DNA or RNA sequence analysis and modification through the

TRICHROMATIC THEORY OF EQUILIBRIUM OF SYSTEMS

1st Chapter (First Part):
Insulin Chain A Sequence n°1/1 Analysis

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Computer Technician: ***Vincenzo Viggiano***

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FIRST CHAPTER INDEX (First Part)

Selected Scientific Bibliography

BIBLIOGRAPHY ON PSEUDOMONAS

BIBLIOGRAPHY ON HELIGMOSOMOIDES POLYGYRUS

INTRODUCTION

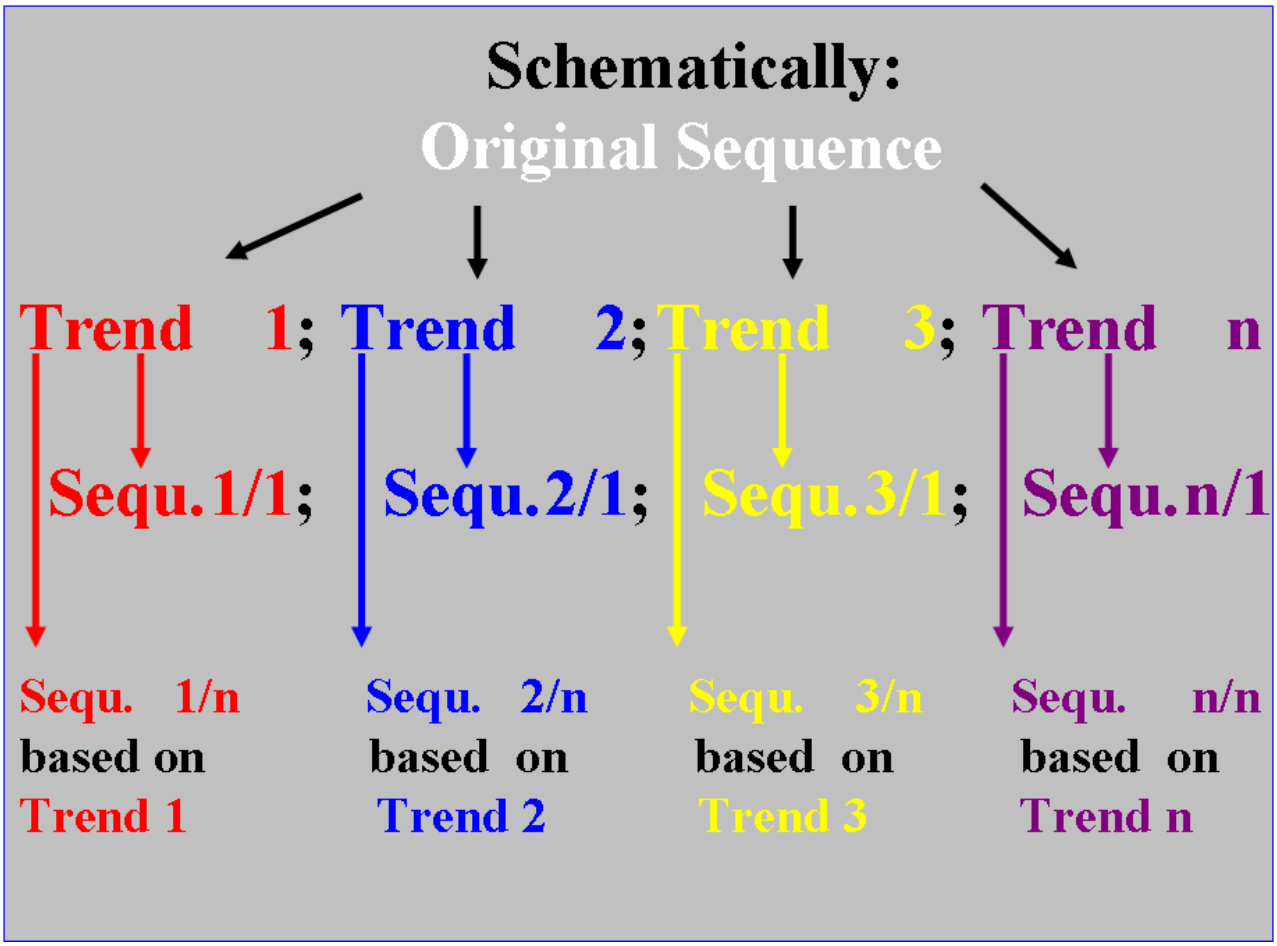
The aim of this work is to present an important application of the **TRICHROMATIC THEORY OF EQUILIBRIUM OF SYSTEMS** (T.T.E.S.) to the DNA or RNA sequence analysis and modification.

With the **T.T.E.S.** software it is possible to analyse a DNA (or RNA) sequence in an *innovative way.*

Starting from the DNA or RNA **original sequence**, the **T.T.E.S.** software produces many different **new** DNA or RNA **sequences that accurately follow many different "non-obvious trends" of the original sequence**.

This result is achievable for **two reasons:**

1) Because every DNA or RNA specific sequence can be «transformed» into many different new sequences, following the many different "non-obvious trends" of the specific original sequence (Pct.1);
2) Because every "non-obvious trend" of the original sequence can generate many different new sequences (Pct. 1).



Pct. 1

These **new** DNA (or RNA) **sequences** are constituted by almost totally different bases**.**

The **hypothesis** to validate, in this paper and in the others that will follow, is that the **new sequences** (produced by following every specific "non-obvious trend" of the original sequence) **have strong connections with the features of the original sequence**.

These new DNA (or RNA) sequences can be used, *totally or partially and/or suitably assembled*, **for scientific, industrial, food research, etc.**

In the I° Chapter of this work, *that is just one of the many chapters that will follow*, we will analyse only one of the many different **new sequences that have been produced**: **Sequence n°1/1.**

The results of the **BLAST** research (*Basic Local Alignment Search Tool* (1)) on **Sequence n°1/1** have pointed out significant similarities with the DNA (or RNA) of different *organisms*.

The **bibliographic research** proves the existence of **important relations** between the characteristics of two *organisms* here considered as case study (that is to say, *Pseudomonas* and *Heligmosomoides polygyrus*), identified with the BLAST research carried out on **Sequence n°1/1**, and some of the functional characteristics of **Insulin**.

In conclusion, the analysis of the *original sequence* (performed through the **T.T.E.S.**) opens up new perspectives about genetics research and its applications. This analysis is based on one of the "non-obvious trends" (**Trend n°1**) of the original sequence, on the creation of a *new DNA sequence* (**Sequence n°1/1**) starting from its ***Trend n°1*** and on the coherence of the results with the data obtained through the *bibliographic detailed study*.

(1) Altschul S. F., Madden T. L., Schaffer A. A., Zhang J., Zhang Z., Miller W. and D. J. Lipman. Gapped BLAST and PSI-BLAST: a new generation of protein database search programs. Nucleic Acids Res., 1997, 25 (17) :3389-3402. PMID: 9254694. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC146917/

1st CHAPTER
(first part)

1.1 THE TRICHROMATIC THEORY OF EQUILIBRIUM OF SYSTEMS (T.T.E.S.)

The **T.T.E.S.** is a theory of systems through which it is possible to observe, analyse, control and modify the state of every system (http://www.ttesystems.eu/index_en.php).

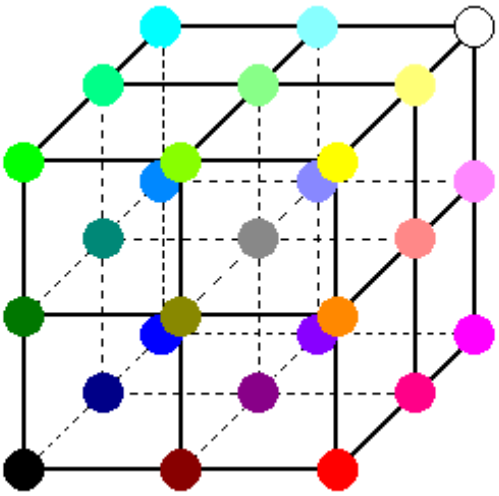
The **T.T.E.S.** was used for the first time to analyse the Vegetative Nervous System through the help of the peripheral biofeedback
(The Peripheral Biofeedback and the Trichromatic Theory of Equilibrium of the Vegetative Nervous System;
The Future of Peripheral Biofeedback: The Trichromatic Theory of Equilibrium of the Vegetative Nervous System;
Hyperventilation: a privileged model for the quantitative and qualitative evaluation of the psychophysiological activation with the Trichromatic Theory of Equilibrium of the Vegetative Nervous System).

Many other applications of the **T.T.E.S.** are expected (http://www.ttesystems.eu/application.php) and some of them are under experimentation and will be published in the future.

To calculate and visually represent every system variation, the **T.T.E.S.** has used the colour model RGB.

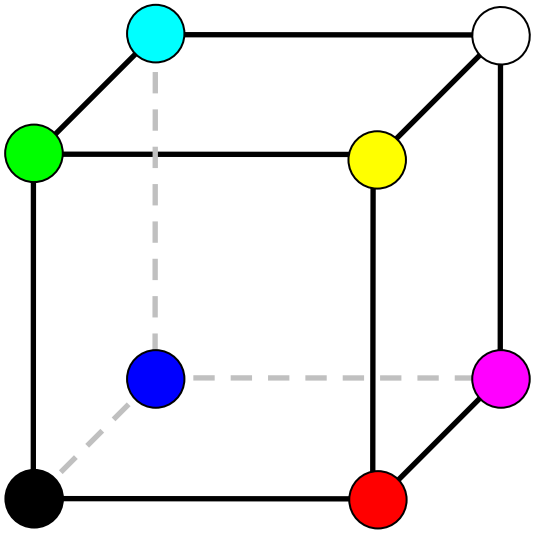
The RGB model is a method to define colours based on *THREE Primary colours* (Red, Green and Blue).

The **CUBE** is the solid used to visually represent all the possible variations of the state of a system (Pct. 2).



Pct. 2

In order to synthetically describe every possible functional state of a system **8 PRINCIPAL CODES** (Pct.3) of the **64 TOTAL CODES** have been used**.**



Pct. 3 *

In the next paragraphs we will show an example of elaboration of a DNA sequence through the **T.T.E.S.**.

* Excerpted and modified from: https://commons.wikimedia.org/wiki/File:Avl3119color4a.jpg

1.2 EXAMPLE OF ELABORATION OF A DNA SEQUENCE THROUGH THE T.T.E.S.

The **acquisition of a DNA (or RNA) sequence** to analyse it or modify it represents the *first stage* of analysis trough the **T.T.E.S.**.

The acquisition of the sequence can be done directly from the website of the **NCBI** (*National Center for Biotechnology Information* (2)) or from any other source.

Let's suppose to analyse the following **63 bases sequence:**

ggcatcgtggagcagtgctgcaccagcatctgttccctctaccagctggagaactactgcaac

All the *codifying* (CDS<1..63) **63** bases of the entire sequence, correspond to the famous **Insulin Chain A**.

Insulin is composed by *two polypeptide chains* linked together by *two disulphide bonds*:

the **A-Chain** of **21** amino acids (GIVEQCCTSICSLYQLENYCN)
and
the **B-Chain** of **30** amino acids (FVNQHLCGSHLVEALYLVCGERGFFYTKPT).

Insulin is an *anabolic protein hormone* produced by *beta cells* of the pancreatic *islets of Langerhans.*

Among its main activities, *insulin* uses *glucose* to produce *energy*, reduces the *glycaemia*, inhibits the *glycogenolysis*, promotes the *glycogenesis* and stimulates the *cell proliferation.*

The **63 DNA bases sequence** of **Insulin Chain A** has been subjected to **BLAST** research.

(2) National Center for Biotechnology Information (**NCBI**)[Internet]. Bethesda (MD): National Library of Medicine (US), National Center for Biotechnology Information; [1988]. Available from: https://www.ncbi.nlm.nih.gov/

Parameters of BLAST research:

Programme	*Blastn*
Word size	*11*
Expect value	*10*
Hitlist size	*100*
Match/Mismatch scores	*2,-3*
Gapcosts	*5,2*
Low Complexity Filter	*Yes*
Filter string	*L;m;*
Genetic Code	*1*

Results of BLAST research:

Query = ggcatcgtggagcagtgctgcaccagcatctgttccctctaccagctggagaactactgcaac

Length = 63

Sequences producing significant alignments:	**Score (Bits)**	**E Value**
XM_021081278.1 PREDICTED: Sus scrofa insulin (INS), transcrip... https://www.ncbi.nlm.nih.gov/nuccore/1191854326/	114	1e-22
NM_001109772.1 Sus scrofa insulin (INS), mRNA https://www.ncbi.nlm.nih.gov/nuccore/172073147/	114	1e-22
AY242112.1 Sus scrofa EWB tyrosine hydroxylase (TH) gene, exo... https://www.ncbi.nlm.nih.gov/nuccore/33242556/	114	1e-22
AY242111.1 Sus scrofa H205 tyrosine hydroxylase (TH) gene, ex... https://www.ncbi.nlm.nih.gov/nuccore/33242553/	114	1e-22
AY242110.1 Sus scrofa H254 tyrosine hydroxylase (TH) gene, ex... https://www.ncbi.nlm.nih.gov/nuccore/33242550/	114	1e-22
AY242108.1 Sus scrofa LRJ tyrosine hydroxylase (TH) gene, exo... https://www.ncbi.nlm.nih.gov/nuccore/33242543/	114	1e-22
AY242107.1 Sus scrofa LW1224 tyrosine hydroxylase (TH) gene, ... https://www.ncbi.nlm.nih.gov/nuccore/33242539/	114	1e-22
AY242106.1 Sus scrofa LW1461 tyrosine hydroxylase (TH) gene, ... https://www.ncbi.nlm.nih.gov/nuccore/33242535/	114	1e-22
AY242105.1 Sus scrofa LW197 tyrosine hydroxylase (TH) gene, e... https://www.ncbi.nlm.nih.gov/nuccore/33242531/	114	1e-22
AY242104.1 Sus scrofa LW209 tyrosine hydroxylase (TH) gene, e... https://www.ncbi.nlm.nih.gov/nuccore/33242527/	114	1e-22
AY242103.1 Sus scrofa LW3 tyrosine hydroxylase (TH) gene, exo... https://www.ncbi.nlm.nih.gov/nuccore/33242523/	114	1e-22

AY242102.1 Sus scrofa LW33361 tyrosine hydroxylase (TH) gene,.. 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/33242519/
AY242101.1 Sus scrofa LW419 tyrosine hydroxylase (TH) gene, e... 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/33242515/
AY242100.1 Sus scrofa LW463 tyrosine hydroxylase (TH) gene, e... 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/33242511/
AY242099.1 Sus scrofa M220 tyrosine hydroxylase (TH) gene, ex... 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/33242508/
AY242098.1 Sus scrofa P208 tyrosine hydroxylase (TH) gene, ex… 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/33242504/
AY044828.1 Sus scrofa tyrosine hydroxylase gene, partial cds;... 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/21956486/
AF064555.1 Sus scrofa preproinsulin mRNA, partial cds 114 1e-22
https://www.ncbi.nlm.nih.gov/nuccore/3885493/
XM_003909376.4 PREDICTED: Papio anubis insulin (INS), transcr... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/1220171442/
XM_009185350.3 PREDICTED: Papio anubis insulin (INS), transcr... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/1220171441/
XM_017948138.2 PREDICTED: Papio anubis insulin (INS), transcr... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/1220171440/
XM_020883287.1 PREDICTED: Odocoileus virginianus texanus insu... 109 5e-21
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XM_020883286.1 PREDICTED: Odocoileus virginianus texanus insu... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/1187570230/
XM_015503336.1 PREDICTED: Marmota marmota marmota insulin (LO... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/984133697/
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https://www.ncbi.nlm.nih.gov/nuccore/984133695/
XM_015434180.1 PREDICTED: Macaca fascicularis insulin (INS), ... 109 5e-21
https://www.ncbi.nlm.nih.gov/nuccore/982292203/
XM_015113354.1 PREDICTED: Macaca mulatta insulin (INS), mRNA 109 5e-21
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https://www.ncbi.nlm.nih.gov/nuccore/795499562/

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XM_007171156.1 PREDICTED: Balaenoptera acutorostrata scammoni... 105 6e-20
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AC188659.9 Canis familiaris chromosome 18, clone XX-484I11, c... 105 6e-20
https://www.ncbi.nlm.nih.gov/nuccore/126032460/
AC187029.8 Canis familiaris chromosome 18, clone XX-127C6, co... 105 6e-20
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X61092.1 C.aethiops gene for preproinsulin 105 6e-20
https://www.ncbi.nlm.nih.gov/nuccore/X61092.1
V00179.1 Dog gene encoding insulin 105 6e-20
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XM_016149753.1 PREDICTED: Rousettus aegyptiacus insulin (INS)... 100 3e-18
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KU548279.1 Uncultured bacterium clone PI_15F_Contig_5 genomic... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/KU548279.1

KU548266.1 Uncultured bacterium clone CZ_15F_Contig_7 genomic... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/KU548266.1
KU548224.1 Uncultured bacterium clone CH_15F_Contig_16 genomi... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/KU548224.1
KU548210.1 Uncultured bacterium clone AZ_15F_Contig_2 genomic... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/KU548210.1
NM_008386.4 Mus musculus insulin I (Ins1), mRNA 100 3e-18
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XM_012743999.1 PREDICTED: Microcebus murinus insulin (INS), mRNA 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_012743999.1
XM_012651969.1 PREDICTED: Propithecus coquereli insulin (INS)... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_012651969.1
XM_007465953.1 PREDICTED: Lipotes vexillifer insulin (INS), mRNA 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_007465953.1
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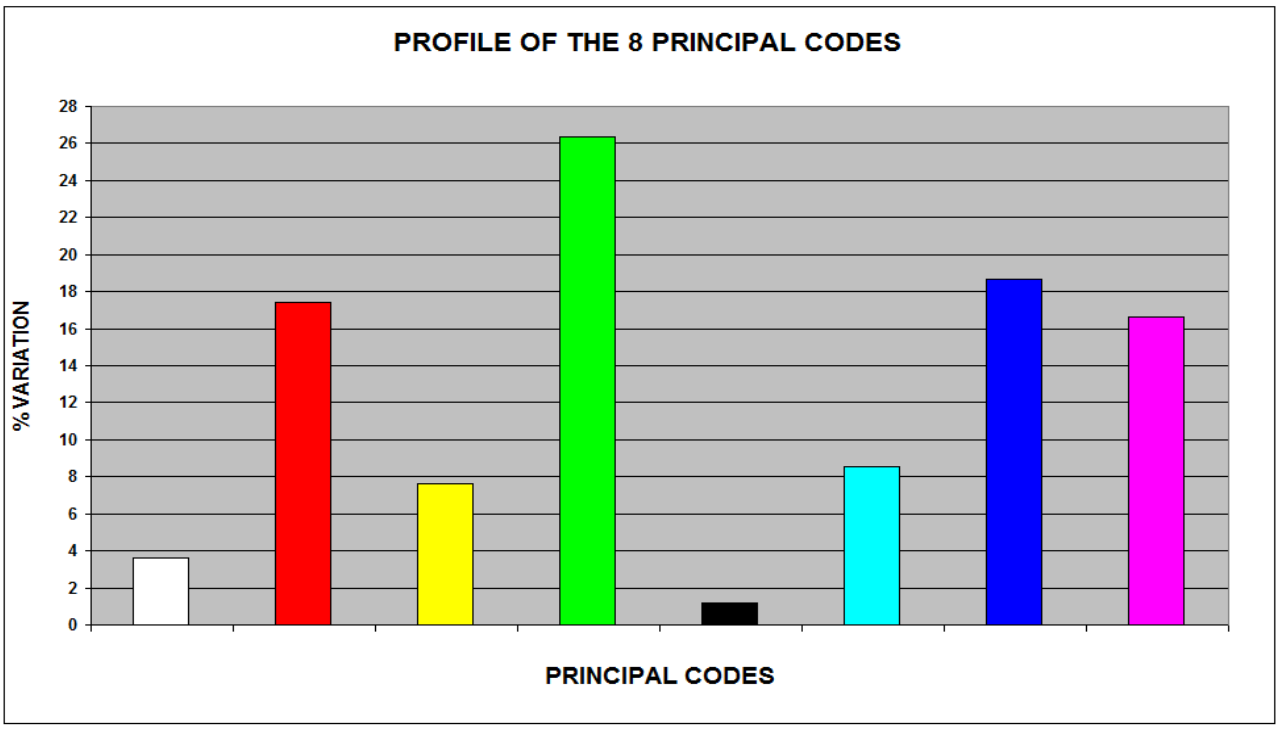
https://www.ncbi.nlm.nih.gov/nuccore/XM_006910977.1
XM_006750095.1 PREDICTED: Leptonychotes weddellii insulin (IN... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_006750095.1
XM_004317860.1 PREDICTED: Tursiops truncatus insulin (INS), mRNA 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_004317860.1
AB649280.1 Suncus murinus mRNA for insulin, partial cds 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/AB649280.1
XM_002920120.1 PREDICTED: Ailuropoda melanoleuca insulin (INS... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/XM_002920120.1
BC145868.1 Mus musculus insulin I, mRNA (cDNA clone MGC:17575... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/BC145868.1
DQ250570.1 Niviventer coxingi preproinsulin 2 (Ins2) gene, co... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/DQ250570.1
DQ250566.1 Niviventer coxingi preproinsulin 1 (Ins1) gene, co... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/DQ250566.1
DQ250564.1 Apodemus semotus preproinsulin 1 (Ins1) gene, comp... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/DQ250564.1
DQ250563.1 Rattus losea preproinsulin 1 (Ins1) gene, complete... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/DQ250563.1
DQ479923.1 Mus musculus strain BTBR T+ tf/J insulin 1 precurs... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/DQ479923.1
AC163452.12 Mus musculus chromosome 19, clone RP23-405C7, com... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/AC163452.12
AK148541.1 Mus musculus adult pancreas islet cells cDNA, RIKE... 100 3e-18
https://www.ncbi.nlm.nih.gov/nuccore/AK148541.1

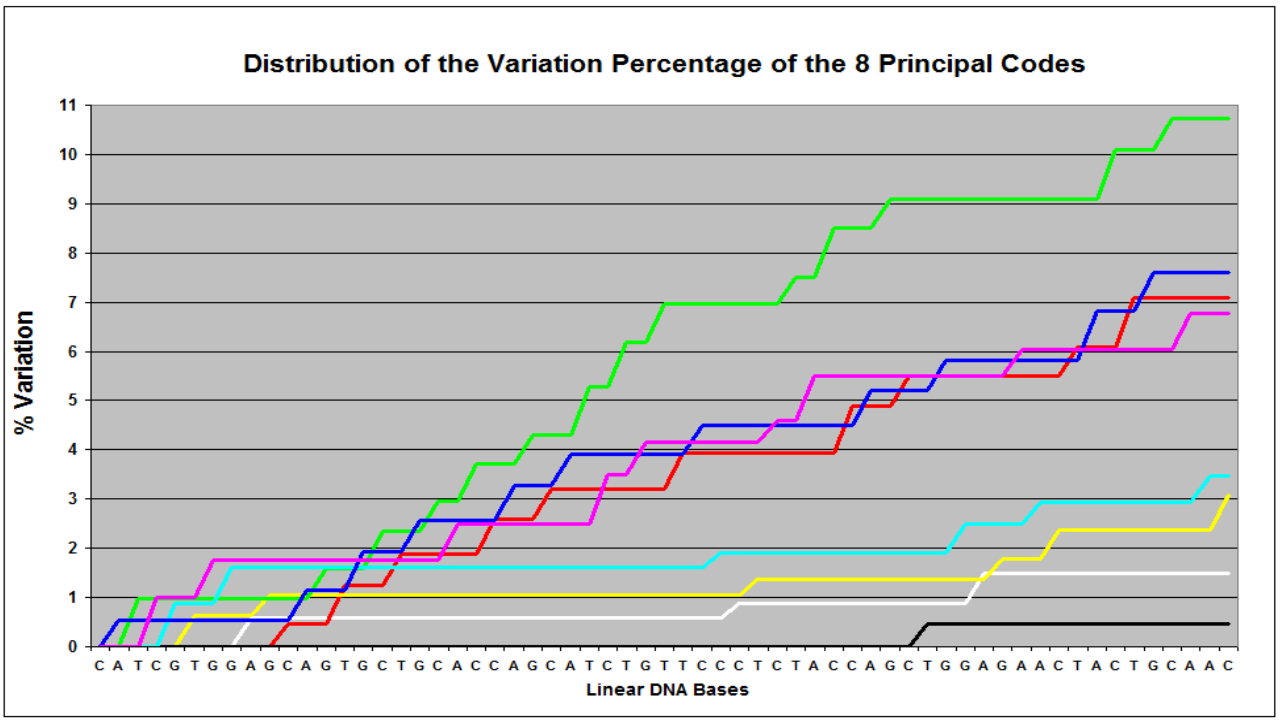
1.3 GRAPHIC RESULTS OF THE ANALYSIS

Through the **T.T.E.S.** software, the **acquired sequence** (or **original sequence**) is analysed on the basis of one of its "non-obvious trend": **Trend n°1**.
The chart in Pct. 4 concerns the **8 Principal Codes Profile** that *synthetically* describe the analysed sequence.



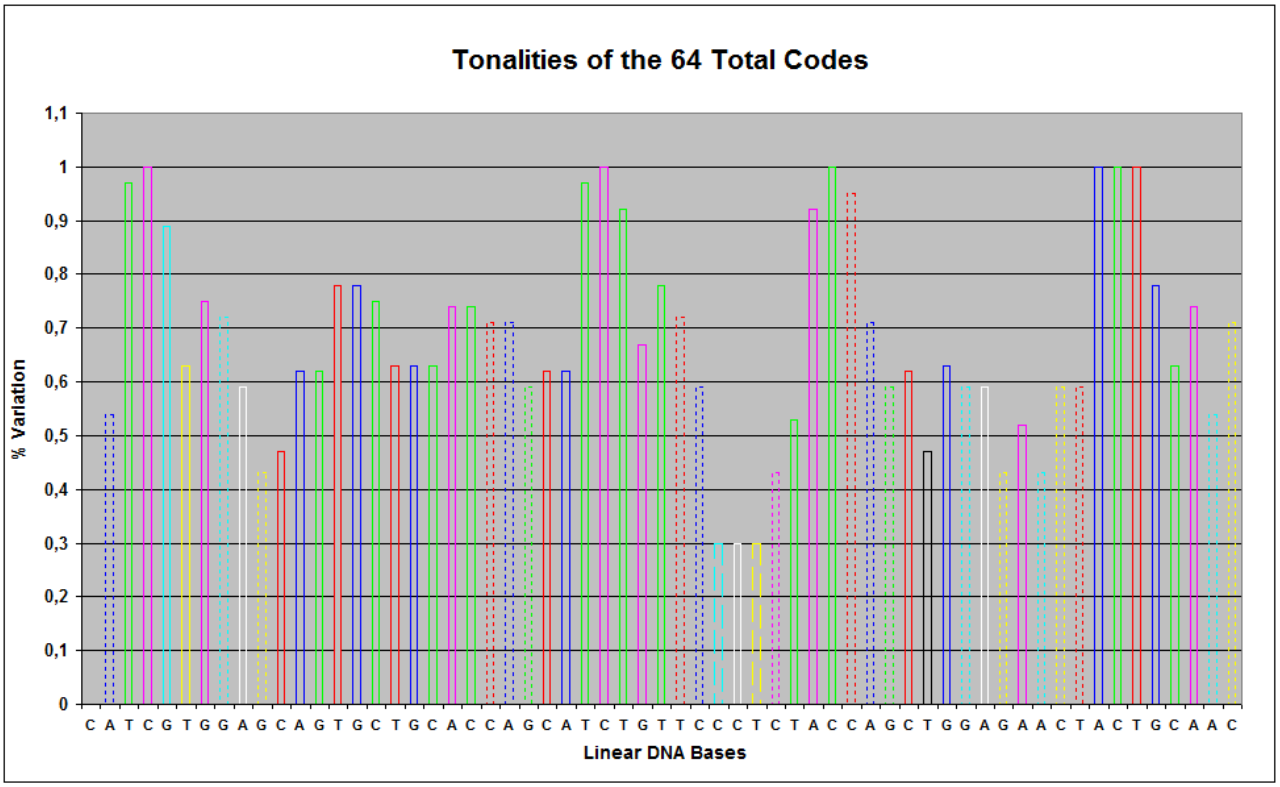
Pct. 4

The chart in Pct. 5 concerns the **Distribution of the Variation Percentage of the 8 Principal Codes** with reference to the analysed sequence.



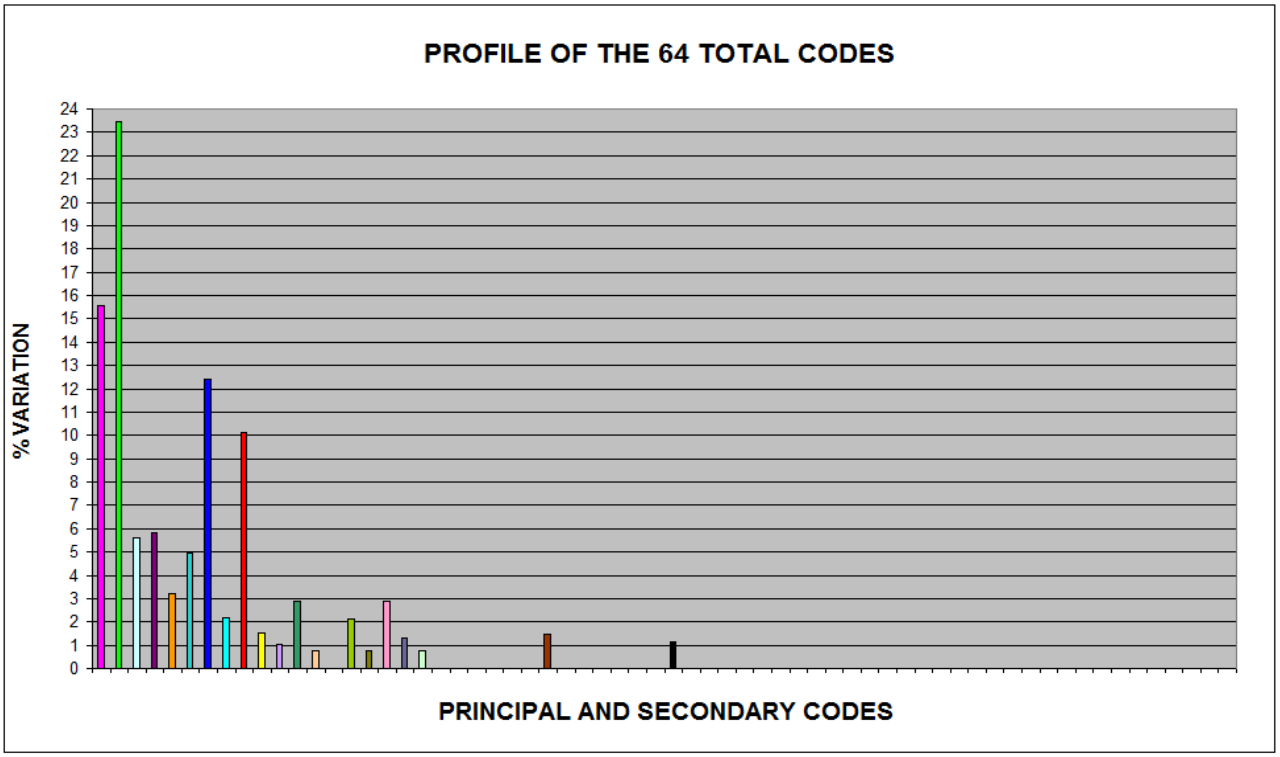
Pct. 5

The chart in Pct. 6 concerns the profile of the **single Tonalities of the 64 Total Codes** that *analytically* describe the analysed sequence.



Pct. 6

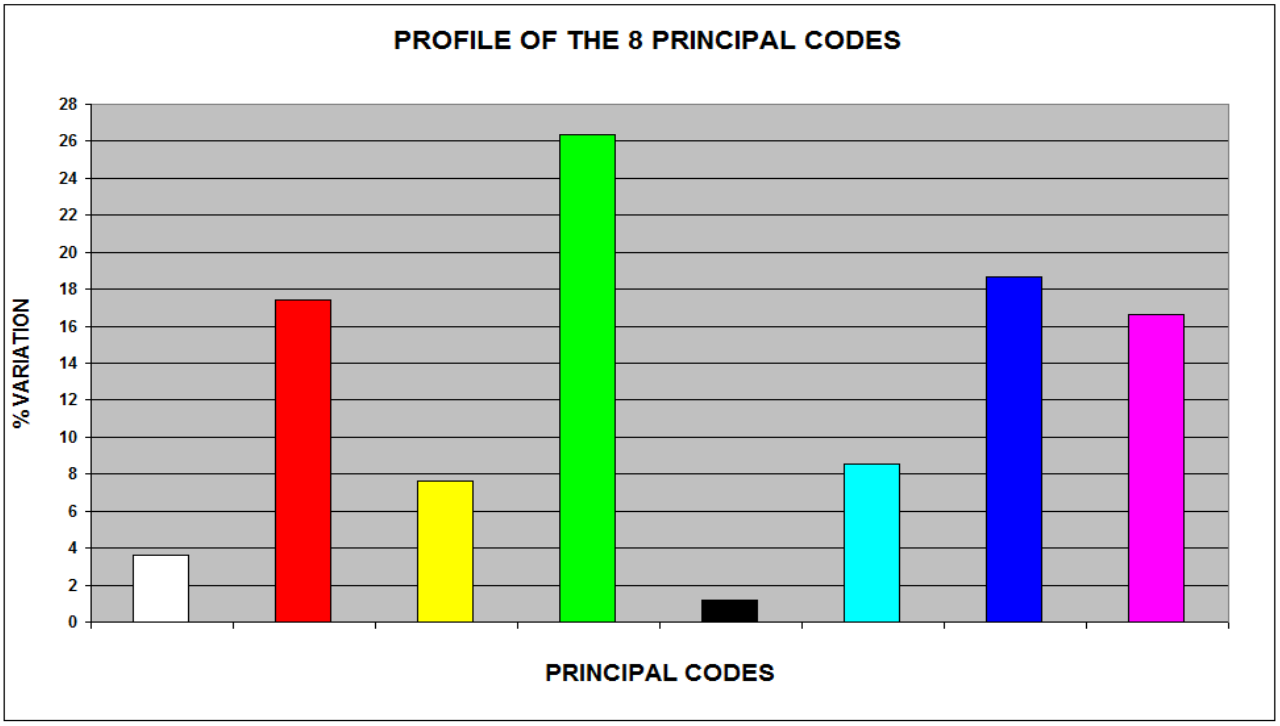
The chart in Pct. 7 concerns the **Profile of the 64 Total Codes,** that analytically describe the analysed sequence.



Pct. 7

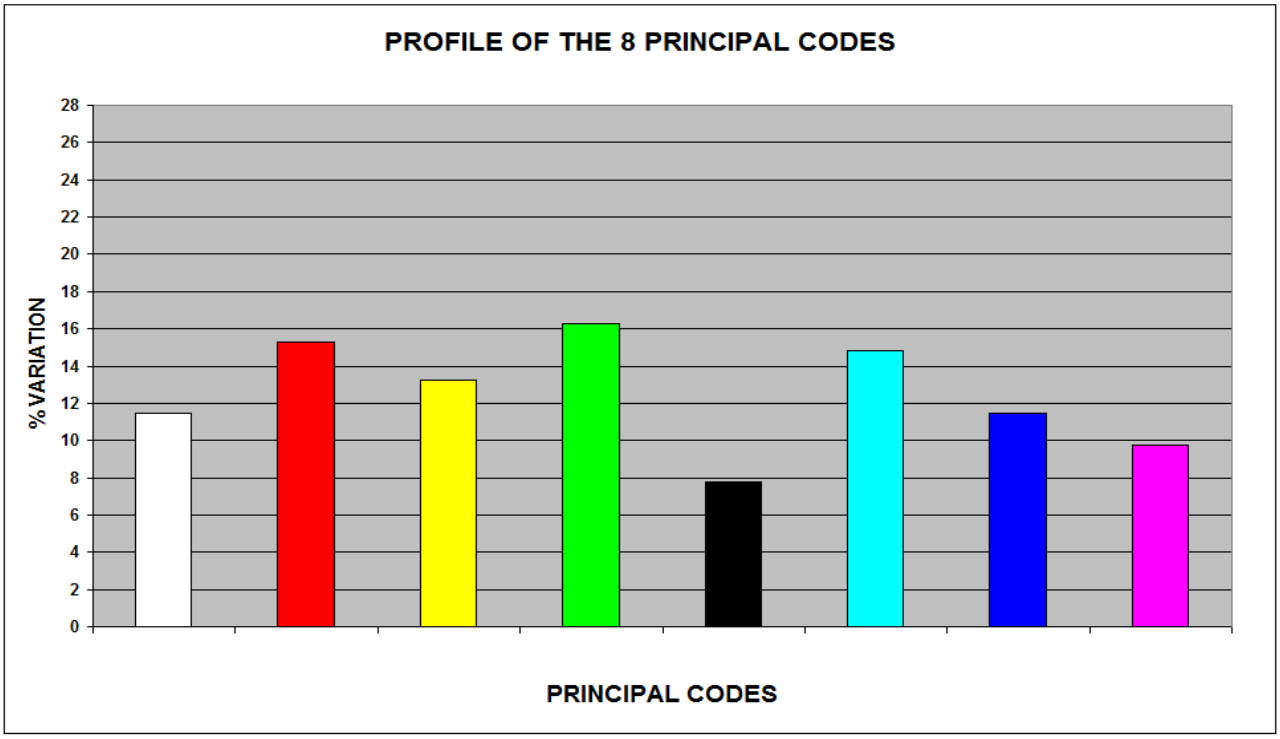
1.4 GRAPHIC RESULTS OF THE ANALYSES ON THE NON-CODIFYING AND CODIFYING READING OF DNA BASES

In Pct. 8 (A and B) two **8 Principal Codes Profiles** are compared**.**
In the chart in Pct. 8 (A) the sequence is analysed **without considering** any variation determined by the CODIFYING interpretation (CDS <1..63) of the bases that codify the **Insulin Chain A**.



Pct. 8 (A)

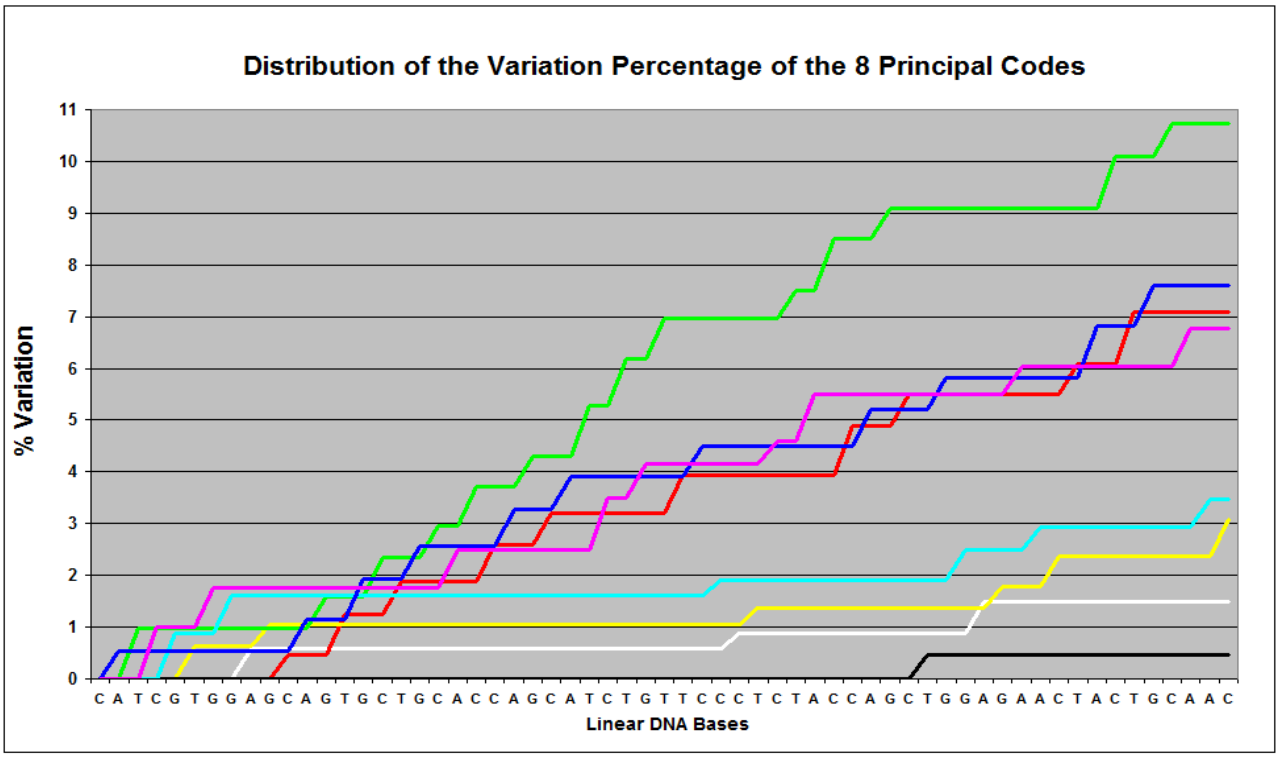
Instead, in the chart in Pct. 8 (B) **they are considered**.



Pct. 8 (B)

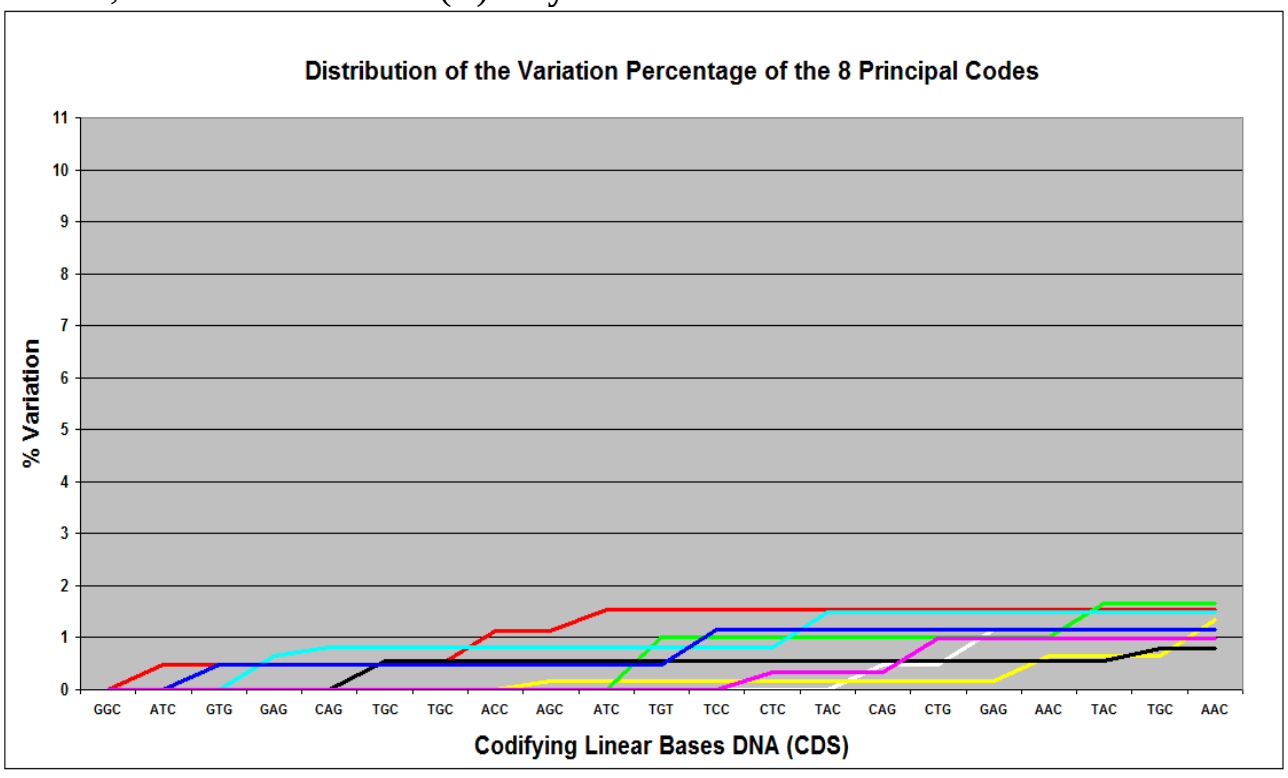
In Pct. 9 (A and B) two charts concerning the **Distribution of the Percentage Variation of the 8 Principal Codes** are compared.

As in the previous figure, in Pct. 9 (A) the sequence is analysed **without considering** any of the bases that CODIFY (CDS <1..63) the **Insulin Chain A**.



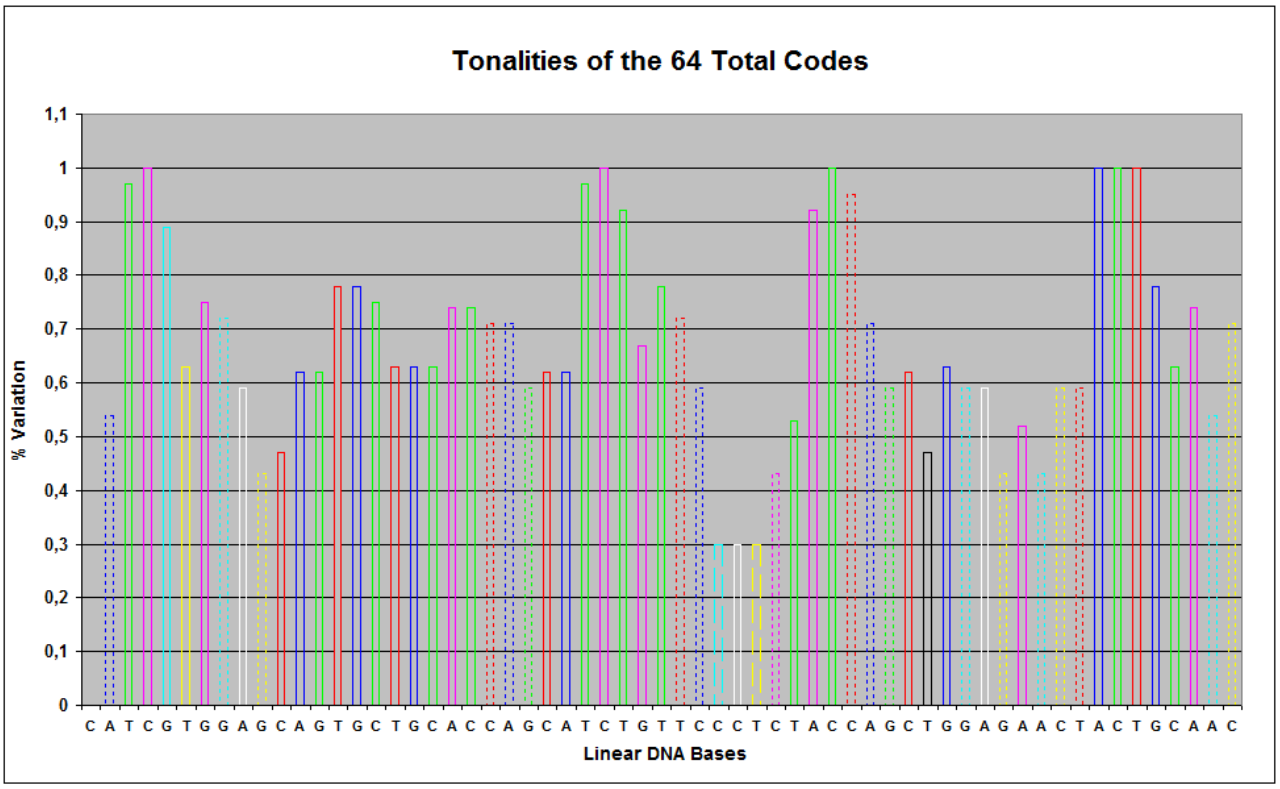
Pct. 9 (A)

Instead, in the chart in Pct. 9 (B) **they are considered**.



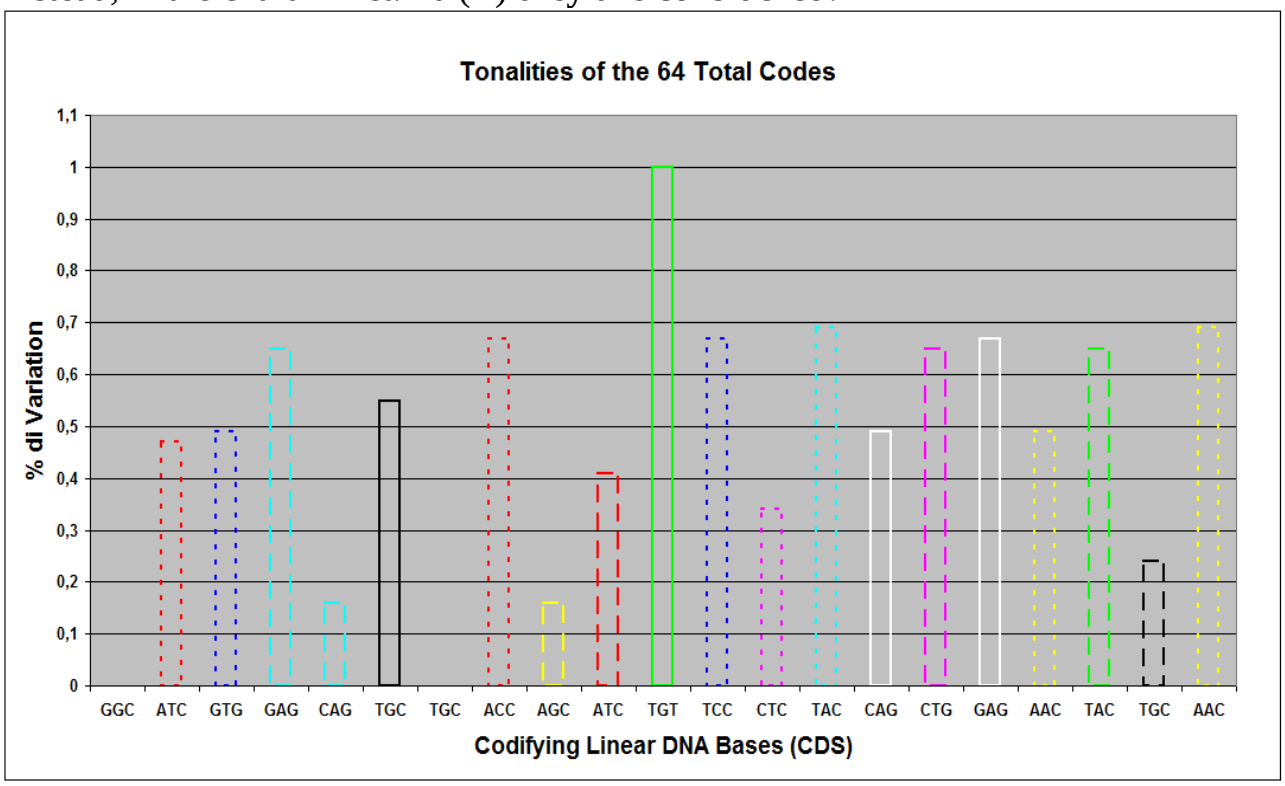
Pct. 9 (B)

In Pct. 10 (A and B) two charts concerning the **Tonalities of the 64 Total Codes** are compared.
As in the previous Figure, in Pct. 10 (A) the sequence is analysed **without considering** any of the bases that CODIFY (CDS <1..63) the **Insulin Chain A**.



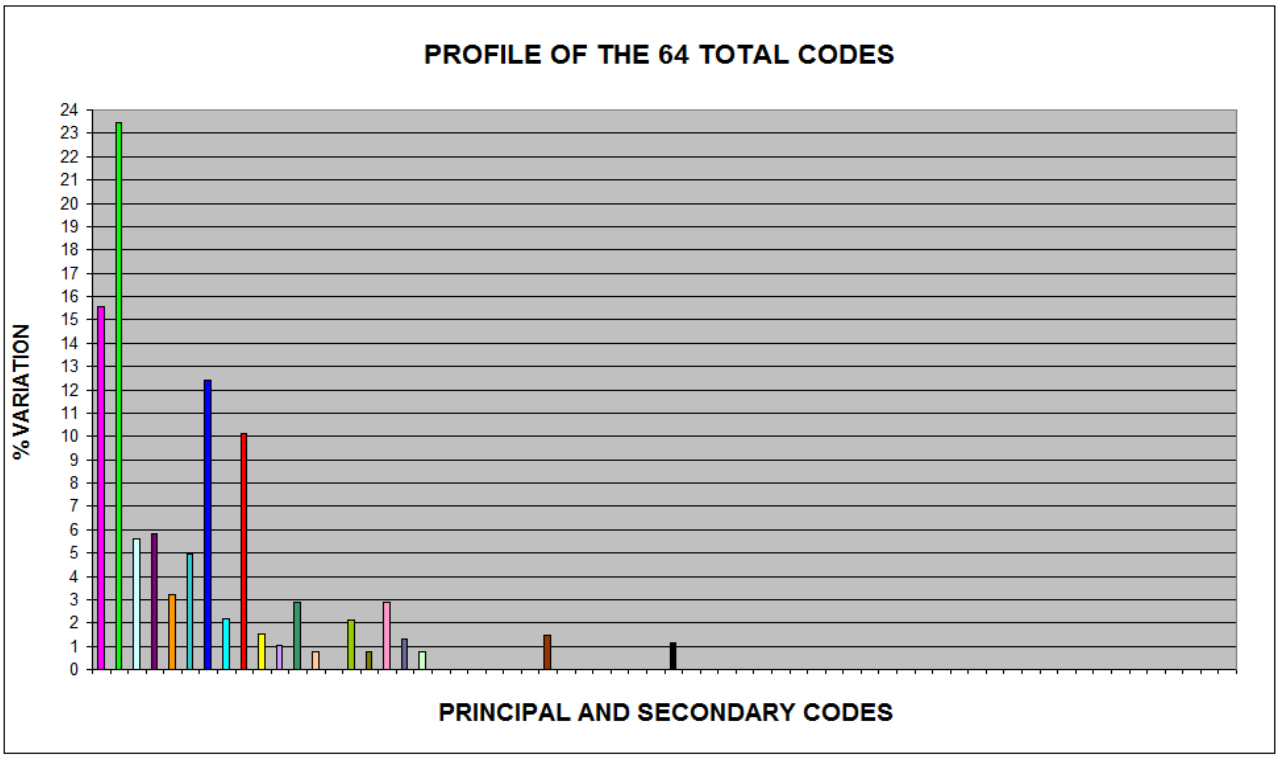
Pct. 10 (A)

Instead, in the chart in Pct. 10 (B) **they are considered**.



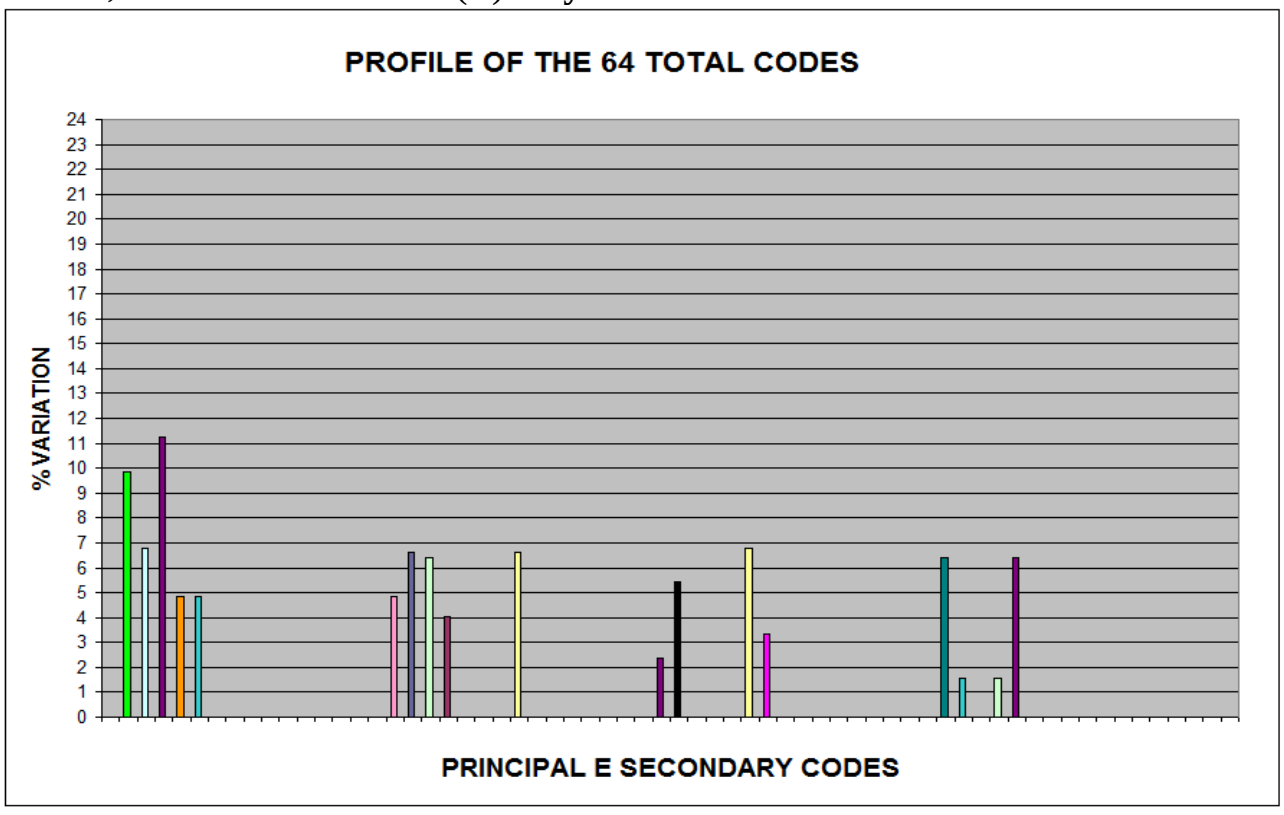
Pct. 10 (B)

In Pct. 11 (A and B) two charts concerning the **Profile of the 64 Total Codes** are compared.
As in the previous Figure, in Pct. 11 (A) the sequence is analysed **without considering** any of the bases that CODIFY (CDS <1..63) the **Insulin Chain A**.



Pct. 11 (A)

Instead, in the chart in Pct. 11 (B) **they are considered**.



Pct. 11 (B)

Insulin Chain A
Sequence n°1/1 Analysis

1.5 PREMISE

Let's examine again the **63** bases sequence of the **Insulin Chain A** *analysed before*:

ggcatcgtggagcagtgctgcaccagcatctgttccctctaccagctggagaactactgcaac

Starting from the **original sequence**, the **T.T.E.S.** software produces many different **new sequences** that accurately follow the many different **"non-obvious trends"** of the **original sequence**.

As already mentioned in the **Introduction**, in this Chapter, *that is just one of the many chapters that will follow*, we will analyse only one of the many different **new sequences that have been produced**: **Sequence n°1/1.**

PLEASE NOTE:

In order to keep up the interest in this work, in the graphic results that will follow, some negligible information concerning the **new sequence** have been omitted. (**Sequence n°1/1**).

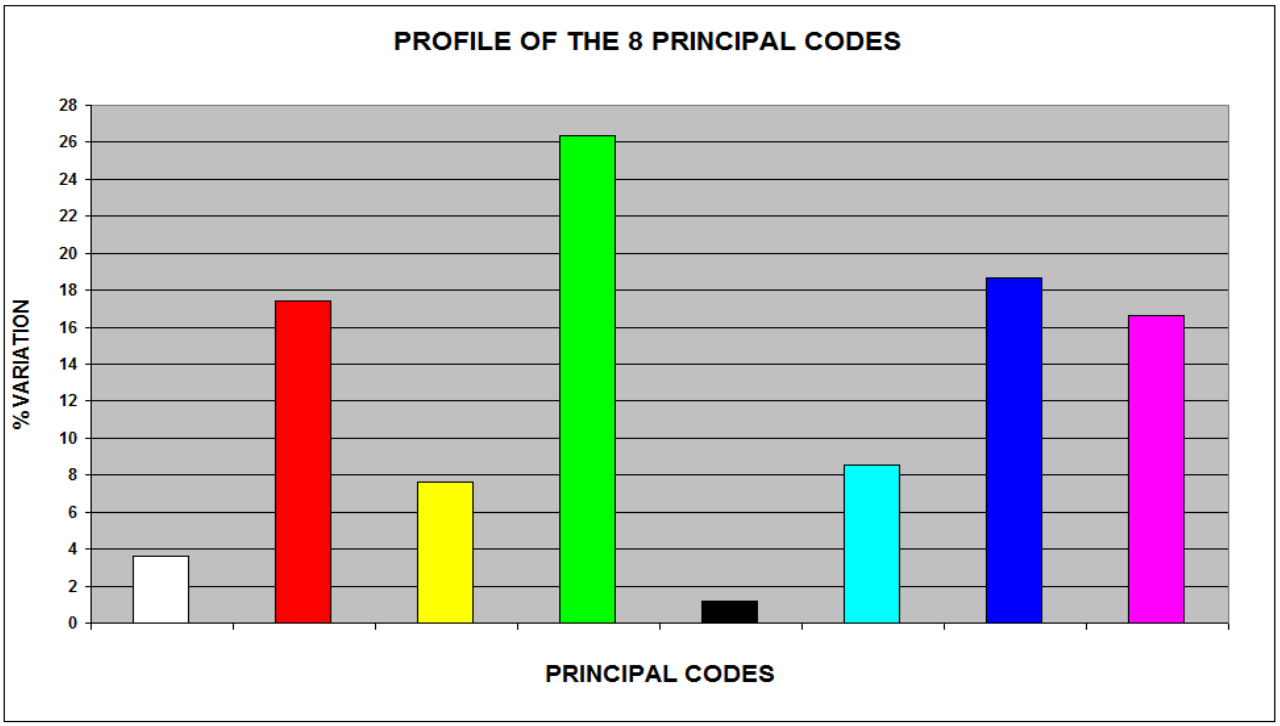
The whole information about all the **new generated sequences** (including the **Sequence n°1/1)**, their corresponding *information* about the ***significant alignments*** produced by *BLAST research* and all the data acquired from *GenBank (3)* will be published in the **Appendix,** after the *General Conclusions.*

(3) Clark K., Karsch-Mizrachi I., Lipman D. J., Ostell J. and Sayers EW. GenBank. Nucleic Acids Res. 44(D1):D67-72 (2016). PMID: 26590407. PMCID: PMC4702903. https://doi.org/10.1093/nar/gkv1276

1.6 GRAPHIC RESULTS OF THE "NON-OBVIOUS TREND" ANALYSIS

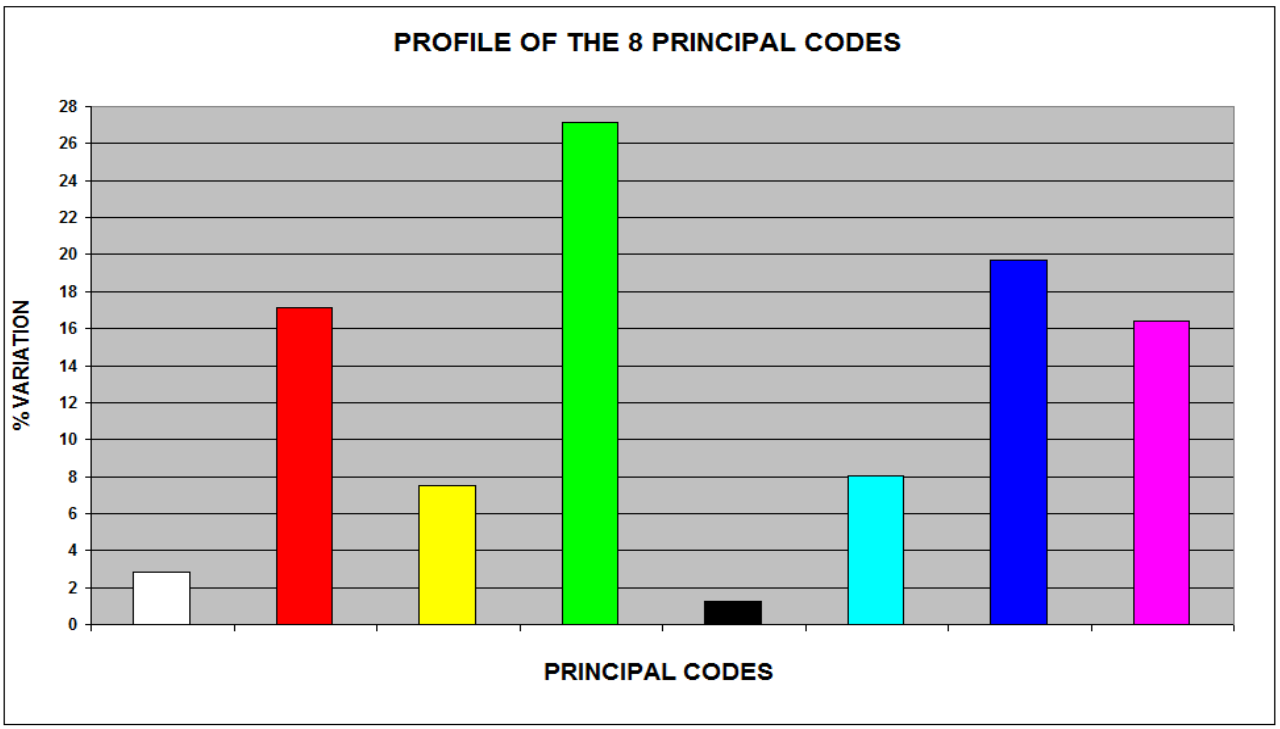
In the Pct. 12 (A and B) two **8 Principal Codes Profiles** are compared.

The chart in Pct. 12 (A) refers to the **original bases sequence** analysed before.



Pct. 12 (A)

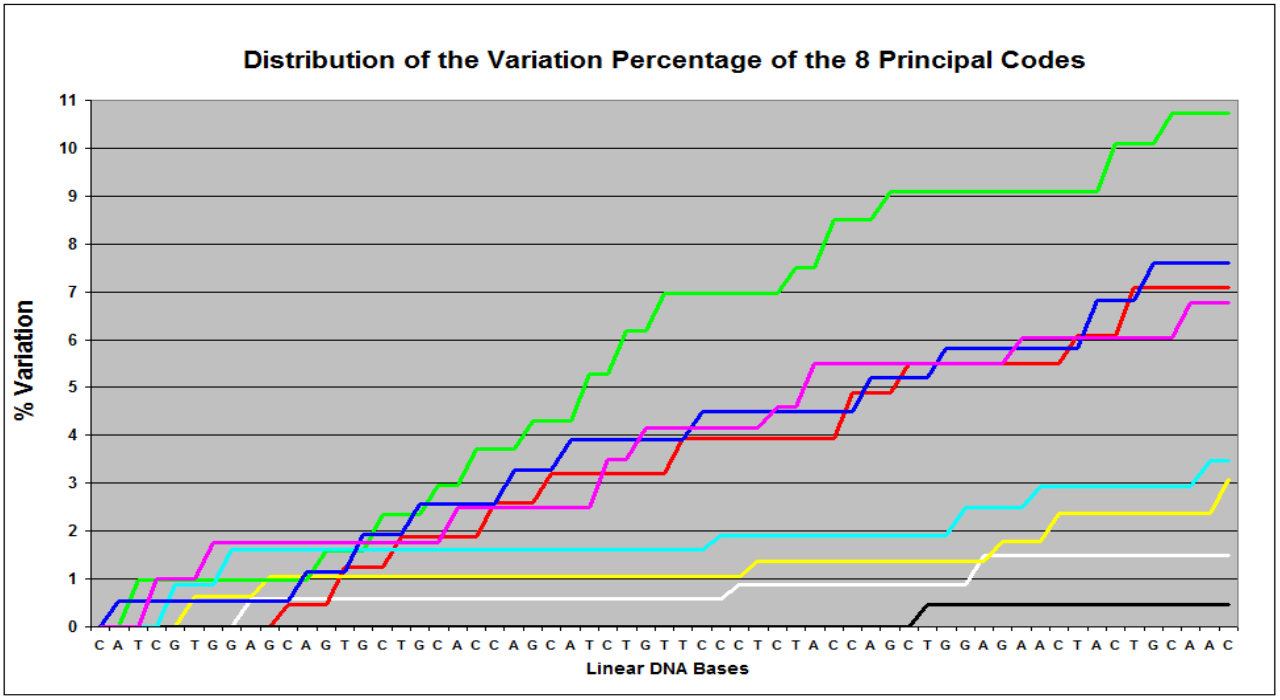
The chart in Pct. 12 (B) refers to the **"new generated sequence"** that originates from the original one.



Pct. 12 (B)

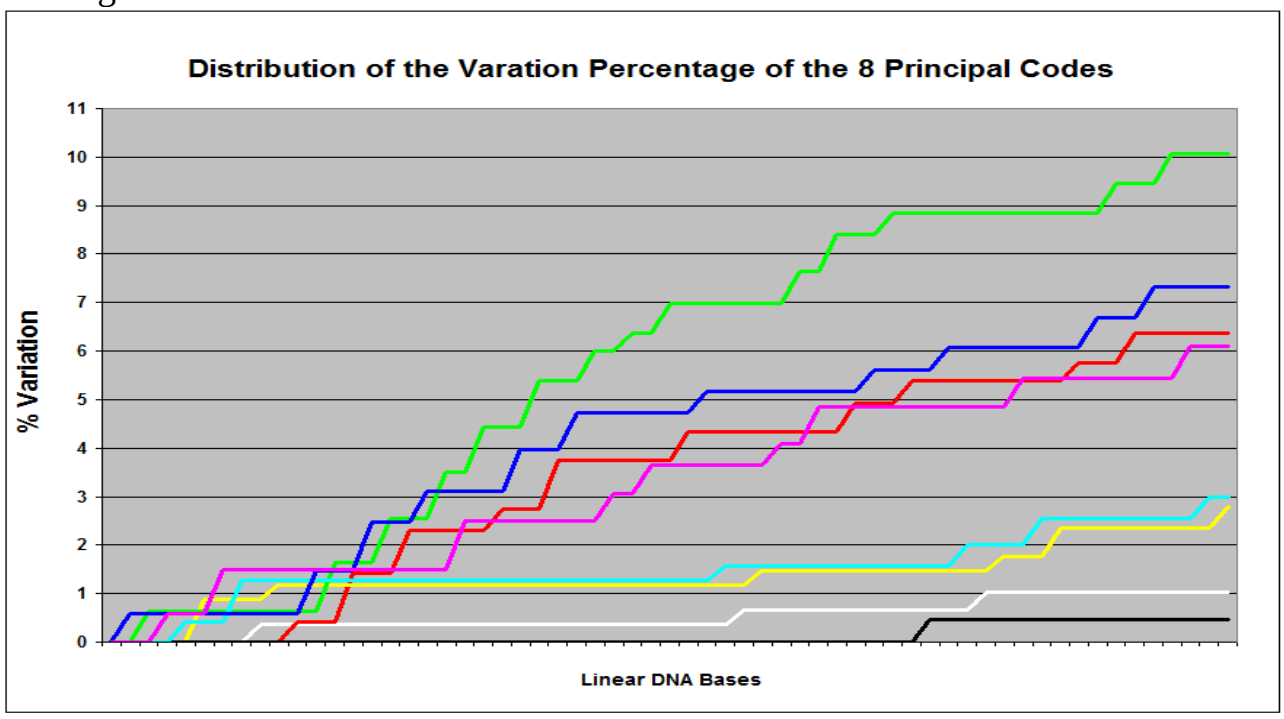
As you can see in the charts, the two **8 Principal Codes Profiles** of the original sequence and of the new generated sequence arising from the original one, ARE ALMOST IDENTICAL.
In Pct. 13 (A and B) two charts concerning the **Distribution of the Variation Percentage of the 8 Principal Codes** are compared.

The charts in Pct. 13 (A) refers to the **original bases sequence** analysed before.



Pct. 13 (A)

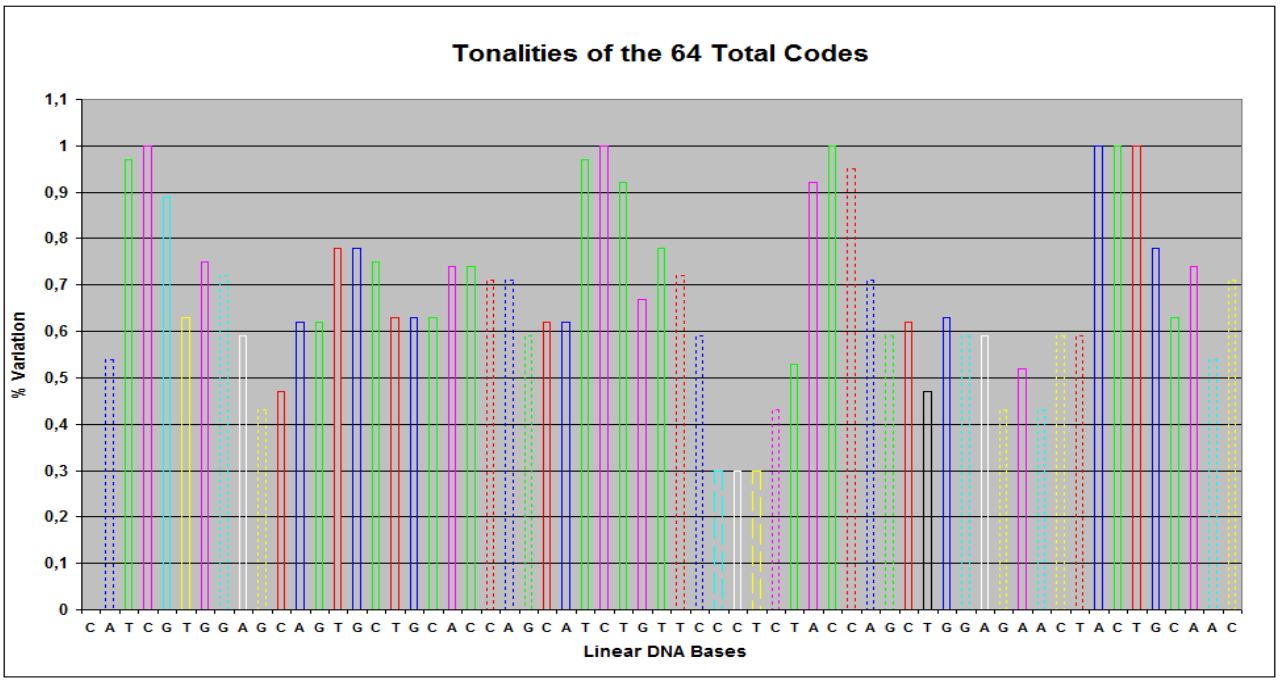
The chart in Pct. 13 (B) refers to the **"new generated sequence"** that originates from the original one.



Pct. 13 (B)

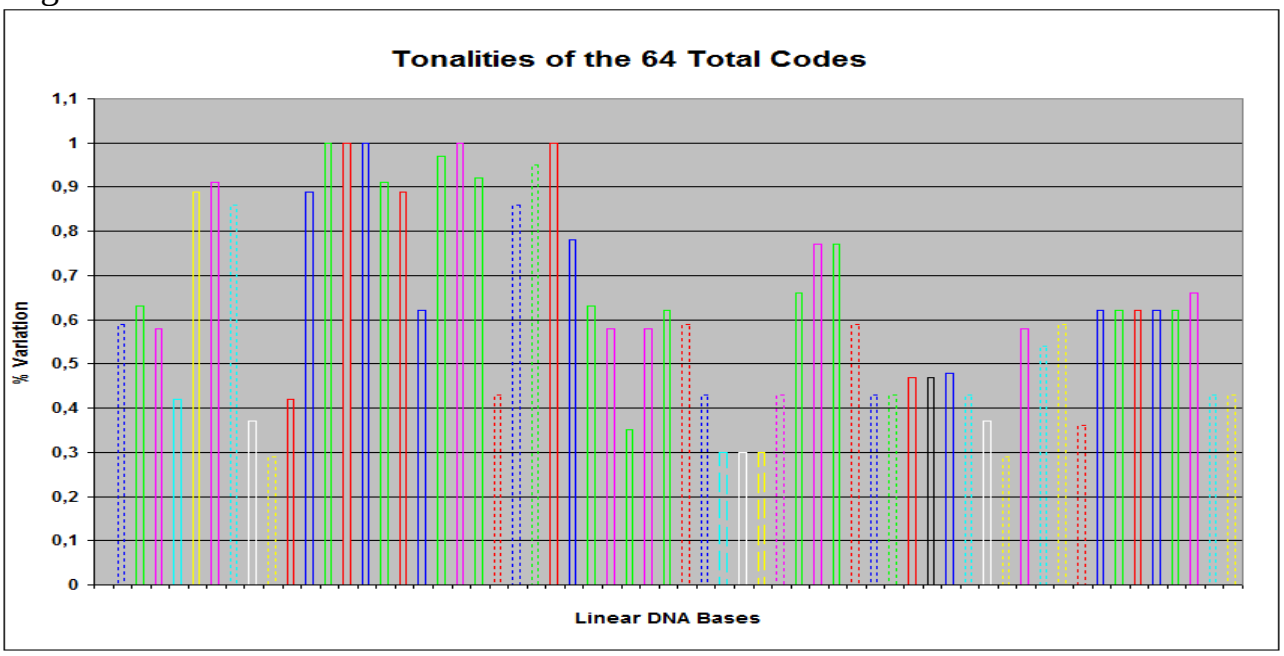
As in Pct. 12, the two charts concerning the **Distribution of the Variation Percentage of the 8 Principal Codes,** respectively of the **original sequence** and of the **new generated sequence** originating from the original one, ARE ALMOST IDENTICAL.
In Pct. 14 (A and B) two charts concerning the single **Tonalities of the 64 Total Codes** are compared.

The chart in Pct. 14 (A) refers to the **original bases sequence** analysed before.



Pct. 14 (A)

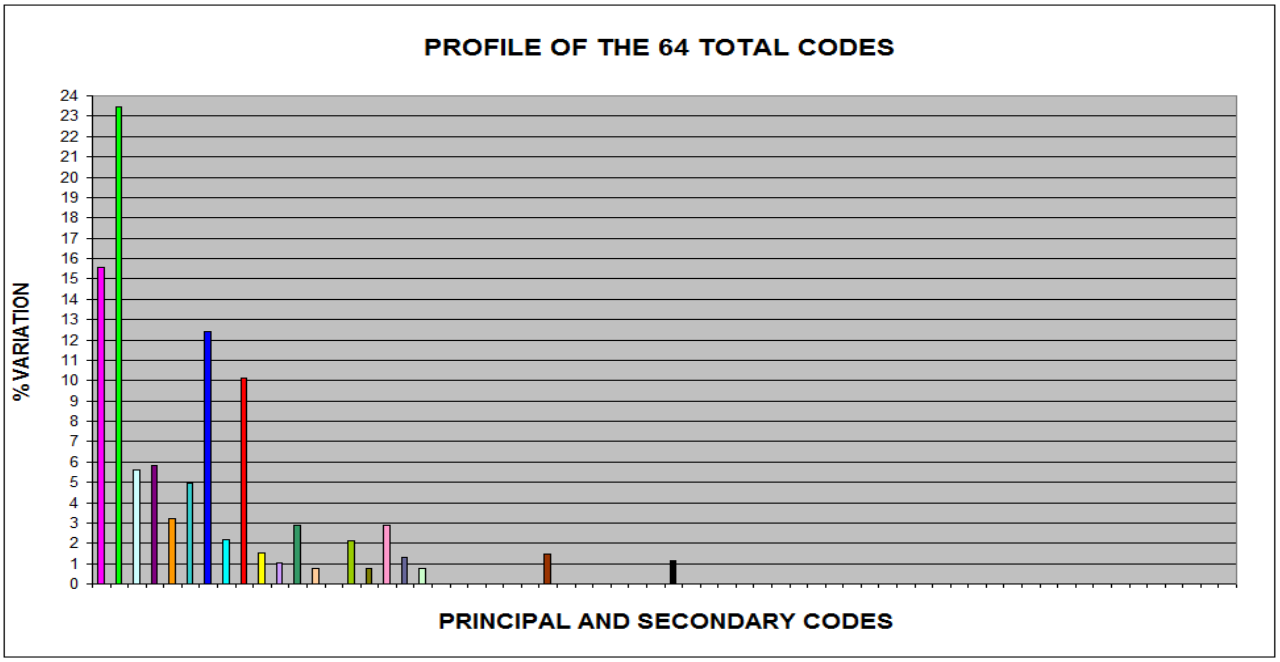
The chart in Pct. 14 (B) refers to the **"new generated sequence"** originated from the original one.



Pct. 14 (B)

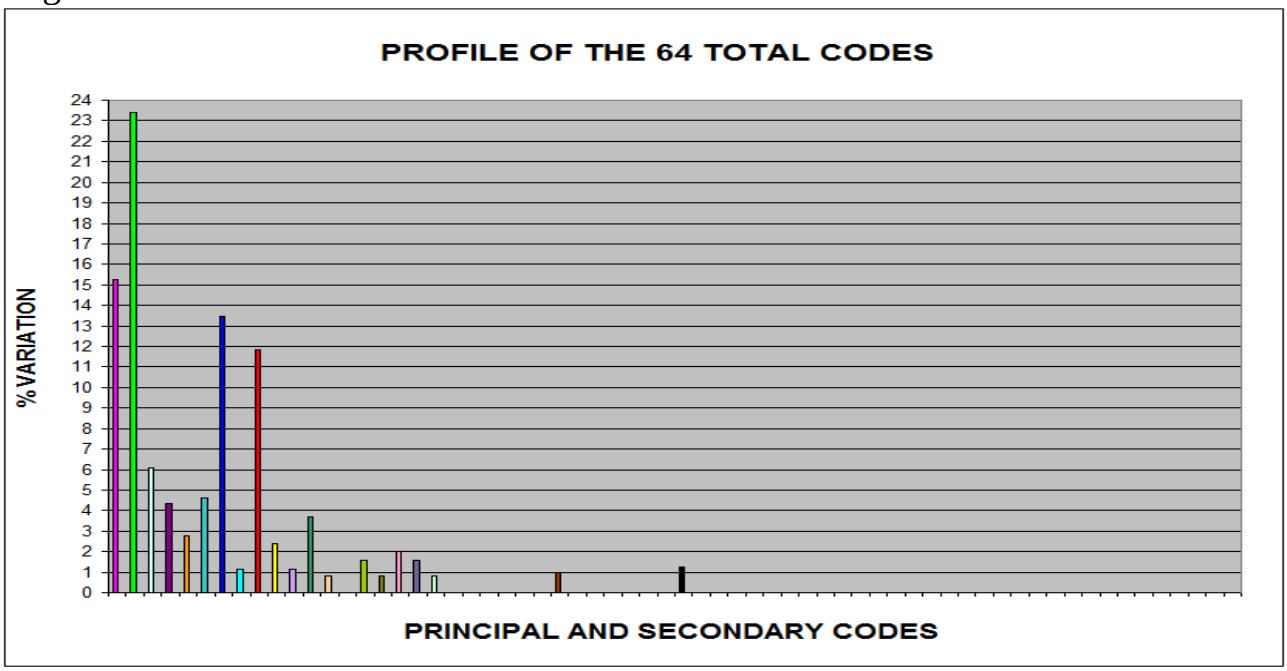
DIFFERENTLY TO THE PREVIOUS CHARTS, the two charts concerning the single **Tonalities of the 64 Total Codes,** respectively of the **original sequence** and of the **new generated sequence** originating from the original one, ARE VERY DIFFERENT FROM ONE ANOTHER.
In Pct. 15 (A and B) two charts concerning the **Profile of the 64 Total Codes** are compared.

The chart in Pct. 15 (A) refers to the **original bases sequence** analysed before.



Pct. 15 (A)

The chart in Pct. 15 (B) refers to the **"new generated sequence"** originated from the original one.



Pct. 15 (B)

Differently to the previous charts, the two charts concerning the **Profile of the 64 Total Codes,** respectively of the **original sequence** and of the **new generated sequence** produced from the original one, ARE PARTLY SIMILAR.
From the **T.T.E.S.** analysis, it comes to light that the differences between the "characteristics" of the original sequence and those of the **new generated sequence**, that arises from the original one, are noticeably pointed out by the charts concerning the **Tonalities of the 64 Total Codes** (Pct. 14 A and B).

This result is clear considering that the charts of the single **Tonalities of the 64 Total Codes** (Pct. 14 A and B), compared to the other charts, **are *more sensitive to the single bases sequences* than to the "non-obvious trend" of the sequences themselves.**

Even the charts relative to the **Profiles of the 64 Total Codes (**Pct. 15 A and B) point out some differences, but they are less evident compared to those that have emerged from the analysis of the charts of the single **Tonalities of the 64 Total Codes** (Pct. 14 A and B).

From the other charts (Pct. 12 A and B, Pct. 13 A and B) it comes to light a nearly absolute likeness of the "characteristics" of the **original sequence** and of the **new generated sequence** that originates from the original one.

This result is remarkable considering that **the 63 DNA bases of the new generated sequence** are ALMOST TOTALLY DIFFERENT FROM THE ORIGINAL ONES.

In conclusion, the level of likeness of the "characteristics" of the **new generated sequence** to the "characteristics" of the **original sequence** is the greater, the higher is the likeness of the **8 Principal Codes Profiles** (Pct. 12 A and B) and those relative to the **Distribution of the Variation Percentage of the 8 Principal Codes** (Pct. 13 A and B). ***These charts are both sensitive to the* "non-obvious trend" *of the sequences.***

1.7 IMPLICATIONS RELATIVE TO THE GRAPHIC RESULTS OF THE "NON-OBVIOUS TREND" ANALYSIS

The **63** DNA bases of the **new generated sequence** that arises from the **original** one have been subject to **BLAST** research.

PLEASE NOTE:

The result of the BLAST Research will be presented in the chapters that will follow. In the first part of this chapter (1st Chapter), we have *partially* reported only the results of the alignments with some species of **Pseudomonas** bacteria and with the nematode **Heligmosomoides polygyrus**.

The whole information about the significant alignments produced by *BLAST research* concerning the **new generated sequence** (**Sequence n°1/1**) and all the other important information acquired from *GenBank* will be published in the **Appendix,** after the *General Conclusions.*

Query = NEW GENERATED SEQUENCE (Sequence n°1/1)

Length = 63

Parameters of the BLAST research:

Programme	*Blastn*
Word size	*11*
Expect value	*10*
Hitlist size	*100*
Match/Mismatch scores	*2,-3*
Gapcosts	*5,2*
Low Complexity Filter	*Yes*
Filter string	*L;m;*
Genetic Code	*1*

Sequences producing significant alignments:	Score (Bits)	E Value	Identit.
CP010359.1 Pseudomonas plecoglossicida strain NyZ12, complete...	44.6	0.18	85%
https://www.ncbi.nlm.nih.gov/nuccore/CP010359.1			
LL188962.1 Heligmosomoides polygyrus genome assembly H_bak..	44.6	0.18	93%
https://www.ncbi.nlm.nih.gov/nuccore/LL188962.1			
CP007620.1 Pseudomonas putida strain DLL-E4, complete genome	44.6	0.18	85%
https://www.ncbi.nlm.nih.gov/nuccore/CP007620.1			
LT629788.1 Pseudomonas moraviensis strain BS3668 genome ass....	39.2	7.6	82%
https://www.ncbi.nlm.nih.gov/nuccore/LT629788.1			
LL194531.1 Heligmosomoides polygyrus genome assembly H_bak..	39.2	7.6	87%
https://www.ncbi.nlm.nih.gov/nuccore/LL194531.1			
CP003961.1 Pseudomonas sp. VLB120, complete genome	39.2	7.6	83%
https://www.ncbi.nlm.nih.gov/nuccore/CP003961.1			

SIGNIFICANT ALIGNMENTS

1.8 PSEUDOMONAS ALIGNMENTS

>CP010359.1
Pseudomonas plecoglossicida strain NyZ12, complete genome
Length=6233254
Features in this part of subject sequence: **cystathionine gamma-synthase**
https://www.ncbi.nlm.nih.gov/nucleotide/752308899?report=gbwithparts&from=5560737&to=5562680&RID=1ZXSZEJC014

>CP007620.1
Pseudomonas putida strain DLL-E4, complete genome
Length=6484062
Features in this part of subject sequence**: cystathionine gamma-synthase**
https://www.ncbi.nlm.nih.gov/nucleotide/635291785?report=gbwithparts&from=176815&to=178758&RID=1ZXSZEJC014

>LT629788.1
Pseudomonas moraviensis strain BS3668 genome assembly, chromosome:I
Length=6092541
Features in this part of subject sequence: **high-affinity iron transporter**
https://www.ncbi.nlm.nih.gov/nucleotide/1086004611?report=gbwithparts&from=4649680&to=4651578&RID=1ZXSZEJC014

>CP003961.1
Pseudomonas sp. VLB120, complete genome
Length=5644569
Features in this part of subject sequence: **cytochrome c class I**
https://www.ncbi.nlm.nih.gov/nucleotide/556072477?report=gbwithparts&from=5441006&to=5442901&RID=1ZXSZEJC014

1.9 HELIGMOSOMOIDES POLYGYRUS ALIGNMENTS

>LL188962.1
Heligmosomoides polygyrus genome assembly H_bakeri_Edinburgh, scaffold HPBE_scaffold0000593
Length=94530
https://www.ncbi.nlm.nih.gov/nucleotide/688429340?report=genbank&log$=nuclalign&blast_rank=2&RID=27MWTXV3014

>LL194531.1
Heligmosomoides polygyrus genome assembly H_bakeri_Edinburgh, scaffold HPBE_contig0000102
Length=27221
https://www.ncbi.nlm.nih.gov/nucleotide/688443549?report=genbank&log$=nuclalign&blast_rank=23&RID=27MWTXV3014

1.10 PSEUDOMONAS

BLAST research points out the *significant alignments of the DNA bases* between the **new generated sequence** and different species of **PSEUDOMONAS bacteria.**
Pseudomonas* is a genus (Gram-negative, aerobic, catalase-positive, oxidase-positive, providing motility) belonging to the family *Pseudomonadaceae*.
It occurs especially in terrains, in wet environments, in water (pools) and plants.
It secretes *pyocyanin*, a pigment that alters the ciliary function, stimulates the inflammatory response and causes damages to the tissues.
A particular substance produced by many species of Pseudomonas under iron-limiting conditions is *pyoverdine* (a fluorescent yellow-green siderophore or high-affinity iron-chelating compound).
The main virulence factors are represented by exotoxin A and endotoxin.
When adhering to the host cells, they can form biofilms (protected by exopolysaccharides) that make it difficult for pseudomonads to be phagocytosed and limit the antibiotic activity. In humans, the species **Pseudomonas aeruginosa** is the most widespread (faeces but also armpits, groin and, more rarely, nails).
In hospital environments with hygienic deficiencies, spread of epidemics with serious consequences (osteoarticular infections, external otitis, pneumonia, cutaneous folliculitis, ocular infections, endocarditis) is possible.
Given their low permeability, pseudomonas are resistant to the majority of the antibiotics and expel them, inactivate the penicillin and the aminoglycosides, producing specific enzymes.
Recently, in order to hinder the virulence of Pseudomonas, researchers have used its iron uptake. *Gallium ions* interact with cellular processes in a manner similar to *iron (III)*. When gallium ions are mistakenly taken up in place of *iron (III)* by bacteria such as *Pseudomonas*, the ions interfere with **respiration**, and bacteria die. This happens because **iron is redox-active**, allowing the transfer of electrons during respiration, while **gallium** is redox-inactive] (4).
The **first significant alignment** of BLAST research concerns **PSEUDOMONAS bacteria**, belonging to the species of ***Plecoglossicida*.**
From the same research, *other significant alignments* with other 3 species of **PSEUDOMONAS bacteria: *Putida*, *Sp*. *and Moraviensis*** emerge**.**
In particular, in the species **Plecoglossicida Nyz12** and **Putida DLL-E4** of **PSEUDOMONAS bacteria,** the *bases alignments* have concerned the CYSTATHIONINE GAMMA-SYNTHASE enzyme.
Instead, in **PSEUDOMONAS bacteria Moraviensis BS3668,** the *alignment* has pointed out the HIGH-AFFINITY IRON TRANSPORTER, while in **PSEUDOMONAS bacteria Sp. VLB120** the *bases alignment* has concerned the CYTOCHROME C CLASS 1.

(4) Excerpted and modified from: https://it.wikipedia.org/wiki/Pseudomonas
https://en.wikipedia.org/wiki/Pseudomonas

1.11 HELIGMOSOMOIDES POLYGYRUS

Heligmosomoides polygyrus, (previously named *Nematospiroides dubius*), is a naturally occurring intestinal roundworm of rodents (found almost ubiquitously within populations of wild wood mice *Apodemus sylvaticus*). It has the ability to establish chronic infections in rodents and alter host immune responses. This nematode is widely used as a gastrointestinal parasitic model in immunological, pharmacological and toxicological studies (especially on the laboratory mouse *Mus musculus)*.

Upon infection with *H. polygyrus*, innate and adaptive host immune responses are generated to prevent the establishment of the parasite in the gut. A strong wound healing immune response (Th2-type) associated with intestinal pathology is mounted. Though, despite this impressive immune response, *H. polygyrus* can redirect the host immune response, weaken the Th2 response and cause chronic infections.] (5)

(5) Excerpted and modified from:
https://en.wikipedia.org/wiki/Heligmosomoides_polygyrus

1.12 REQUIREMENTS FOR FOCUSED BIBLIOGRAPHIC RESEARCHES

In this chapter, as in those that will follow, some **focused bibliographic researches** will be made, in order to find any relation between **Insulin** and the many various organisms identified on different **new generated sequences** by BLAST researches.

In the first part of this chapter the research will focus on Pseudomonas bacteria and nematode **Heligmosomoides polygyrus**.
In the second part of this chapter, the research will be focused on all the remaining *organisms* in which significant alignments with the **Sequence n°1/1** have been found.

The results of the bibliographic researches can be viewed on the **links** and on the **abstracts of scientific papers** (or on the **whole scientific papers**) published on **PubMed** (https://www.ncbi.nlm.nih.gov/pubmed/), [a free source run by the **NCBI** (National Center for Biotechnology Information), at the **NLM** (National Library of Medicine) of the United States in the **NIH** (National Institutes of Health)](see on ***PubMed Help***: *How to Get the Journal Article*).

The specific clarification of those articles is irrelevant for the purposes of the work hereby presented. Though, ***seen as it is not always possible to infer the important relations between Insulin and the different organisms just from their titles****, if interested in a deeper study please see them.*

Our main goal in listing all these scientific papers is to collect evidences to support and give scientific plausibility to our *hypothesis*: that **the new generated sequence** has **strong relations** with the **features** of the **original sequence** (to be precise with the **Insulin Chain A**).

This hypothesis would be plausible if the bibliographic researches **confirmed** that the **original sequence** implies some features of the *organisms* constituted by the DNA or RNA bases of the new generated sequences.

1.13 RESEARCH ON PSEUDOMONAS

The results of BLAST research (presented on page 33) have stimulated a bibliographic research in order to study the **possible relations** between the **features** of the **original DNA sequence** (**63** bases of the **Insulin Chain A**) and the **features** of **Pseudomonas** bacteria.
From the reading of the selected articles (presented from page 51 to page 156) significant *direct and indirect* relations have been found between **Insulin** and various species of **Pseudomonas** bacteria.
These strong bonds between **Insulin** and **Pseudomonas** support the hypothesis that **Sequence n°1/1**, the so called **new generated sequence** [obtained following **Trend n°1** (one of the possible specific "non obvious trends" of the *original sequence*) has **strong relations** with the **characteristics** of the **original sequence** (to be more precise with **Insulin Chain A**).

In short, among other and less important evidences that will not be quoted herein, **there are evidences of strong links** between *Insulin*, *Pseudomonas* (or *Burkholderia*, a species of Pseudomonas bacteria) and:

1) *Diabetes*;
2) *Melioidosis*;
3) *Cystic Fibrosis*;
4) *Pulmonary Infections*;
5) *Obesity*;
6) *Malignant Otitis Externa;*
7) *Endocarditis;*
8) *Immune System*;
9) *Apoptosis*.

To be more precise, Pseudomonas is more widespread and causes more serious consequences [as Malignant Otitis Externa and Endocarditis (this one especially in drug-addicts)] in immunodeficient people and/or with Diabetes, Cystic Fibrosis, Pulmonary Infections and Obesity, than in people who do not suffer from these pathologies. The infective activity of *Pseudomonas* can weaken the immune defense of the host, and increase the process of apoptosis (programmed cell death) and cancer.
Melioidosis is an infection caused by the *Burkholderia* (*or Pseudomonas*) *pseudomallei* bacteria. It is more widespread and serious in patients affected by Diabetes, Cystic Fibrosis and Pulmonary Infections.

1.14 CYSTATHIONINE GAMMA-SYNTHASE

According to the result of BLAST research, there are significant bases alignments with the enzyme CYSTATHIONINE GAMMA-SYNTHASE of **Pseudomonas** bacteria. This result has encouraged a focused bibliographic research on the relationships between **Insulin**, **Pseudomonas** e **Cystathionine Gamma-Synthase**.

[The enzyme **CYSTATHIONINE GAMMA-SYNTHASE (CGS)** catalyzes a chemical reaction. The two substrates of this enzyme are O 4 succinyl-L-homoserine + L-cysteine, while its products are L-cystathionine + succinate. This enzyme takes part in 4 metabolic pathways: *metabolism of methionine, metabolism of cysteine, metabolism of seleno amino acids and metabolism of sulphur*](6).

The bibliographic research on all the **scientific papers** published on **PubMed** in which the terms "*Insulin*", "*Pseudomonas*" and "*Cystathionine Gamma-Synthase*" appear together **gives no results.**
(https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS+CYSTATHIONINE+GAMMA-SYNTHASE).

This finding hypothesizes possible **indirect relations** between *Insulin, Pseudomonas* and *Cystathionine Gamma-Synthase.*

In order to investigate into these **hypothetical relations** further **focused researches** have been made on the combinations of the terms *"Insulin* and *Cystathionine Gamma-Synthase"* and *"Pseudomonas* and *Cystathionine Gamma-Synthase"*.

From the articles about the focused research on the combinations of the terms *"Insulin* and *Cystathionine Gamma-Synthase"* it is possible to find **evidences of strong connections** between *Insulin, Cystathionine Gamma-Synthase* and:

1) *Diabetes*;
2) *Obesity*;
3) *Hydrogen Sulfide (H_2S)*;
4) *Homocysteine*;
5) *Cysteine.*

(6) Excerpted and modified from:
https://en.wikipedia.org/wiki/Cystathionine_gamma-synthase

It is fundamental the role played by **Homocysteine** and **Cysteine** and by their relationships with **Hydrogen Sulphide** (synthetized in the human being by the enzymes *Cystathionine-γ-lyase* and *Cystathionine-β-synthase* of the amino acids Cystathionine, Homocysteine and Cysteine) in **Diabetes** and **Obesity**.

There is a direct and indirect connection between **Insulin** and more than one **metabolic pathway in which the enzyme CYSTATHIONINE GAMMA-SYNTHASE takes part** (metabolism of *methionine*, metabolism of *cysteine*, metabolism of *seleno amino acids* and metabolism of *sulphur*).

In particular, the involvement of **Hydrogen Sulphide** turns attention on its **antioxidant** activity and on its ability to influence the **redox state of the cells** [by inhibiting the dysfunctional action of **ROS** (*Reactive Oxygen Species*), chemically reactive chemical species containing Oxygen as *peroxides*, *superoxide*, *hydroxyl radical* and *singlet oxygen*].

[In a biological context, **ROS** are formed as a natural byproduct of the normal metabolism of **oxygen** and have important roles in **cell signaling** and **homeostasis.** However, during times of **oxidative stress** (due to environmental factors), *ROS levels* can increase dramatically and this may result in significant damage to cell structures. ROS are produced intracellularly through multiple mechanisms. The major sources are **NADPH oxidase** (NOX) present in *cell membranes, mitochondria, peroxisomes, and endoplasmic reticulum*. In Mitochondria the **oxidative phosphorylation**, involves the transport of protons (hydrogen ions) across the inner mitochondrial membrane by means of the **electron transport chain.** The last destination for an electron along this chain is an oxygen molecule. In normal conditions, the oxygen is reduced to produce water; however, in a low percentage of electrons passing through the chain oxygen is instead prematurely and incompletely reduced to give the **superoxide radical**. It can inactivate specific enzymes or initiate lipid peroxidation in its protonated form, producing damages. If too much damage is present in mitochondria, a *cell* undergoes **apoptosis** (or programmed cell death). **Bcl-2 proteins** are layered on the surface of the mitochondria, detect damage, and activate a class of proteins called **Bax,** which punch holes in the mitochondrial membrane, causing **cytochrome C** to leak out and be involved in other processes that will end with the death of the cell. Effects of ROS on cell metabolism are well documented in a variety of species: In the mammalian host, ROS is induced as an **antimicrobial defense**, maybe damaging the mitochondrial DNA. ROS can damage lipid, DNA, RNA, and proteins, and they are involved in the physiology of aging, in the carcinogenesis and in cancer cell **necrosis** and *autophagy*.](7).

(7) Excerpted and modified from:
https://en.wikipedia.org/wiki/Reactive_oxygen_species

ROS have a great importance in our study on **Insulin** because its **production** and its **signalisation** are **redox-sensitive processes** and the impairment of the physiological signalisation by **ROS/RNS** (***R**eactive **N**itrogen **S**pecies*) is implied with the *diabetes* etiology [**Rochette L., Zeller M., Cottin Y., Vergely C**. *Diabetes, oxidative stress and therapeutic strategies*. Biochim. Biophys. Acta. 2014; 1840:2709–2729. PMID: 24905298. DOI: 10.1016/j.bbagen.2014.05.017. https://www.ncbi.nlm.nih.gov/pubmed/24905298].

If interested in a deeper study please see the following article:

Egea J, Fabregat I, Frapart YM, et al. European contribution to the study of ROS: A summary of the findings and prospects for the future from the COST action BM1203 (EU-ROS). Redox Biol. 2017 Oct; 13: 94–162. PMCID: PMC5458069. doi: 10.1016/j.redox.2017.05.007
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5458069

From the articles about the **focused researches** on the combinations of the terms *"Pseudomonas and Cystathionine Gamma-Synthase*" it is possible to find evidences of **strong connections** between *Pseudomonas, Cystathionine Gamma-Synthase* and:

1) *Hydrogen Sulphide (H_2S)*;

2) *Metabolism of Methionine*.

In conclusion, there are **indirect connections** between "*Insulin*" and "*Pseudomonas*" that can be ascribed to one or more **metabolic pathways** (especially metabolism of methionine and metabolism of sulphur) in which **the enzyme CYSTATHIONINE GAMMA-SYNTHASE** is involved.

1.15 CYTOCHROME C

The result of BLAST research has pointed up significant bases alignments with the CYTOCHROME C CLASS 1 of **Pseudomonas** bacteria. This result has encouraged a **focused bibliographic research** on the relationships between **Insulin**, **Pseudomonas** and **Cytochrome c**.

[The **cytochrome c** is a *hemeprotein* (containing **iron**) found loosely in association with the inner membrane of the *mitochondrion.* The *heme* group is connected with the protein chain through two covalent bonds with **cysteine**. It is an essential component of the electron transport chain, between *Coenzyme Q – Cyt C* reductase and *Cyt C oxidase. Cytochrome c* is also involved in initiation of *apoptosis*, a controlled form of cell death used to kill cells in the process of development or in response to infection or DNA damage. It is released by the mitochondrion as response of *pro-apoptotic* stimuli.](8). [For example, *Bax, BAD, Bak, Bok*, etc. (*pro-apoptotic* members of the *Bcl-2* f*amily*), promoting permeabilization of the mitochondrial membrane, release **cytochrome C** in the *cytosol* (intracellular fluid). On the other hand, *Bcl-2, Bcl-xL, Bcl-w, etc*. (*anti-apoptotic* members of the gene *Bcl-2 family*), can inhibit it. The anti-apoptotic protein Bcl-2 impedes the release of **Cytochrome c** from the mitochondria and inhibits apoptosis (by inhibiting Bax protein). *Bax protein*, promoting an influx of ions through the external membrane of the mitochondrion, induces the release of **Cytochrome c** and increases apoptosis.](9).

[**Cytochrome C1** is a protein encoded by the *CYC1* gene and belongs to the *cytochrome c family* of proteins. **Cytochrome C1** plays a role in the *electron transfer* during *oxidative phosphorylation* (***Cytochrome c1 and*** *Cytocrome* b transfer electrons from CoQH2 to *Cytochrome c*)](10).

[Oxidative phosphorylation is a fundamental biochemical cell process for the *production of ATP in mitochondria*. It is the **final phase of cell respiration.** It is composed by two parts: *electron transport chains and ATP synthase*](11).

(8) Excerpted and modified from: https://it.wikipedia.org/wiki/Citocromo_c
(9) Excerpted and modified from: https://it.wikipedia.org/wiki/Bcl-2
(10) Excerpted and modified from: https://en.wikipedia.org/wiki/Cytochrome_C1
(11) Excerpted and modified from: https://it.wikipedia.org/wiki/Fosforilazione_ossidativa

The bibliographic research on all the **scientific papers** published on **PubMed** in which the terms "*Insulin*", "*Pseudomonas*" and "*Cytochrome c*" appear together **gives no results** (https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS+CYTOCHROME+C).

This finding hypothesizes possible **indirect relations** between *Insulin, Pseudomonas* and *Cytochrome C.*

In order to investigate on these **hypothetical relations** further **focused researches** have been made about the combinations of the terms *"Insulin and Cytochrome c (c1 and its alternative definitions)"* and *"Pseudomonas* and *Cytochrome c (c1 and its alternative definitions)".*

From the articles about the **focused research** on the combinations of the terms *"Insulin and Cytochrome c (c1 and its alternative definitions)"* it is possible to find **evidences of strong connections** between *Insulin, Cytochrome c* and:

1) *Apoptosis*;
2) *Oxidative stress and ROS (Reactive Oxygen Species);*
3) *Diabetes*;
4) *Obesity*.

From the articles about the **focused research** on the combinations of the terms *"Pseudomonas* and *Cytochrome c (c1 and its alternative definitions)"* it is possible to find **evidences of strong connections** between *Pseudomonas, Cytochrome c* and:

1) *Apoptosis;*
2) *Oxidative stress and ROS (Reactive Oxygen Species);*
3) *Cystic Fibrosis* and *Pulmonary Infections*.

In conclusion, from the results of the bibliographic research presented in the following pages, it is evident that a significant common factor between **Insulin**, **Pseudomonas** and **Cytochrome c** (c1 and its alternative definitions) is the important role played by the **mitochondrial activity,** especially (but not only) when related to ***Oxidative stress, ROS*** and ***Apoptosis.***

1.16 HIGH-AFFINITY IRON TRASPORTER

The result of the BLAST research has pointed up significant bases alignments with the HIGH-AFFINITY IRON TRANSPORTER of the **Pseudomonas** bacteria. This result has encouraged a **focused bibliographic research** on the relationships between **Insulin**, **Pseudomonas** and **Iron**.

[**Iron** is by far the most common element on Earth and it is a fundamental micronutrient for animals and plants. Iron is part of the *hemeprosthetic groups* and it is at the active site of many important redox enzymes dealing with **cellular respiration** and oxidation and reduction in plants and animals (**redox reactions**).
In the inorganic world, iron is found in nitrogenase and hydrogenase (iron-sulfur clusters of various enzymes). Other *enzymes*, in which iron is fundamental, are implicated in different functions, as the *conversion of methane into methanol (methane monooxygenase)* and the *conversion of ribose into deoxyribose (ribonucleotide reductase).* In our organism, in order to avoid a toxic excess, proteins regulate iron uptake and its oxidation. The distribution of iron ions in mammals is regulated carefully. In case of infection, the organism **subtracts iron** and makes it less available for *bacteria*. Some Iron-containing proteins transport and store oxygen and transfer electrons. Iron is related to specific transport proteins as *apoferritin* (that turns into *ferritin*) and *transferrin* (the main protein that connects *extracellular iron* and transports it in blood). It is distributed in various organs. A type of iron is hydrosoluble (*ferrous iron*) and easily absorbable by plants, while the other type is hardly soluble and absorbable (*ferric iron*). In case of an adequate concentration of iron, ***low affinity iron transporters*** transport *ferrous iron* inside the cell. In case of a low concentration of iron, ***high affinity iron transporters*** intervene. There are receptors (Receptors TfR1) for the *transferrin* **high-affinity** and receptors (Receptors TfR2) for the *transferrin* **low-affinity.** Receptors TfR1 can be found in *hepatocytes*, *enterocytes* and in *erythroid cells*, while Receptors TfR2 are *ubiquitous*](12).

As concerns the argumentations in support of this work, it is important to highlight the **strong relationship** between **iron** and **cytochromes.**
As explained in paragraph 1.15 (page 42), **Cytochrome** is a protein containing *iron* and it plays a role in the ***electron transfer*** during oxidative phosphorylation that leads to the production of ATP. *Iron* and *Cytochromes take part in* **cell respiration.**

(12) Excerpted and modified from: https://it.wikipedia.org/wiki/Ferro
https://en.wikipedia.org/wiki/Iron

As explained in paragraph 1.10 (page 35), recently, in order to contrast **Pseudomonas** virulence, researchers have taken advantage of its *iron* avidity. Bacteria as **Pseudomonas** have developed *siderophores*, agents that take away **high-affinity** iron. *Gallium ions* interact with cellular process in a similar way as *iron (III)*. When *Gallium ions* are erroneously exchanged instead of *iron (III)* from bacteria like **Pseudomonas**, ions **interact with Cytochrome activity** and interfere with the **cell respiration** causing the death of bacteria. This happens because iron is *redox active* and it allows electrons transfer during respiration, while gallium is r*edox inactive.*](13).

For a deeper study on this subject please see the recent work by **Hijazi S., Visca P. and Frangipani E.** [*Gallium-Protoporphyrin IX Inhibits Pseudomonas aeruginosa Growth by Targeting Cytochromes*. Front Cell Infect Microbiol. 2017 Jan 26;7:12. doi: 10.3389/fcimb.2017.00012. eCollection 2017. PubMed PMID: 28184354; PubMed Central PMCID: PMC5266731.
https://www.ncbi.nlm.nih.gov/pubmed/28184354].

The bibliographic research on all the **scientific papers** published on **PubMed** in which the terms "*Insulin*", "*Pseudomonas*" and "*Iron*" appear together **gives no results** (https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS+IRON).

The bibliographic research on all the **scientific papers** published on **PubMed** in which the terms "*Insulin*", "*Burkholderia*" and "*Iron*" appear together **gives no results** (https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS+IRON).

This finding hypothesizes possible **indirect relations** between *Insulin*, *Pseudomonas* (or *Burkholderia*) and *Iron*.

In order to investigate on these **hypothetical relations** further **focused researches** have been made on the combinations of the terms *"Insulin and Iron"*, *"Pseudomonas* and *Iron"* and *"Burkholderia* and *Iron"*.

The quantity of articles about all these combinations is **huge**.

For the aims of our work, it has been necessary to narrow the field of investigation and make it easier to identify the significant relationships between *Insulin* and *Iron*, *Pseudomonas* and *Iron*, *Burkholderia* and *Iron*. In order to make **more focused researches**, other important key terms have then been inserted.

(13) Excerpted and modified from: https://en.wikipedia.org/wiki/Pseudomonas

From the articles about the key terms relative to the combinations *Insulin/Iron*, *Pseudomonas*/*Iron and Burkholderia*/*Iron*, it is possible to find **evidences of strong connections** between every combination and these terms:

1) *Transporter;*
2) *Melioidosis;*
3) *Diabetes;*
4) *Cystic Fibrosis;*
5) *Immune System;*
6) *Apoptosis;*
7) *Cytochrome c;*
8) *Reactive Oxygen Species;*

Besides the results above mentioned, only the combination *Insulin/Iron* has produced **evidences of strong connections** with the following terms:

1) *Obesity;*

2) *Insulite.*

In conclusion, as concerns all the possible connections *Insulin/Pseudomonas*, it appears **fundamental the role of *iron levels* and its transport.**

1. 17 RESEARCH ON HELIGMOSOMOIDES POLYGYRUS

The results of the BLAST research (page 34) have encouraged a focused bibliographic research to study the **possible relationships** between the **features** of the **DNA original sequence** (**63** bases of the **Insulin Chain A**) and the features of nematode **Heligmosomoides polygyrus** (or *Nematospiroides dubius*).

From the reading of the selected articles (presented from page 157 to page 168) significant *direct and indirect* relations have been found between **Insulin** and nematode **Heligmosomoides polygyrus**.

These strong connections between **Insulin** and **Heligmosomoides polygyrus** support the hypothesis that **Sequence n°1/1**, the so called **new generated sequence** [obtained following **Trend n°1** (one of the possible specific "non obvious trends" of the *original sequence*) has **strong relationships** with the **characteristics** of the **original sequence** (to be more precise with **Insulin Chain A**).

In short, even if in some cases the number of articles that demonstrate this hypothesis is small, among other and less important evidences that will not be quoted herein, **there are evidences of strong connections** between *Insulin*, *Heligmosomoides polygyrus* and:

1) *Immune System;*
2) *Apoptosis;*
3) *Pulmonary Infections*;
4) *Diabetes*;
5) *Obesity*;
6) *Insulite*.

F**ocused research** have been made on the relationships between *Heligmosomoides polygyrus* and the relevant terms highlighted in points 1, 2, 3, 4, 5 and 6.

In a scientific paper that **cannot be consulted online**, a correspondence between *Heligmosomoides polygyrus* and *Pseudomonas* has been found.

In general, the **final results** of these researches have proved that infections from ***Heligmosomoides polygyrus*** can reduce, through a strong immune response of the host, *Diabetes type 1*, the tendency to put on weight (*obesity*), many *Pulmonary Infections* (except Pneumococcal pneumonia caused by Streptococcus pneumoniae) and *apoptosis*,.

RISULTS OF BIBLIOGRAPHIC RESEARCH ON PSEUDOMONAS AND HELIGMOSOMOIDES POLYGYRUS

1.18 CONCLUSIONS 1ST CHAPTER (FIRST PART)

According to the bibliographic research on **Pseudomonas**, it is possible to find many and important relationships between different species of **Pseudomonas** bacteria (identified by BLAST research for the significant alignments of **Sequence n°1/1** and some of their DNA bases of *Cystathionine Gamma-Synthase*, *Cytochromes C1* and *High-Affinity Iron Transporters*) and **insulin**, **diabetes mellitus**, **melioidosis**, **obesity**, **cystic fibrosis**, different types of **infections** (especially **pulmonary**), **malignant external otitis**, **endocarditis**, **immune system**, **apoptosis**, **iron levels** and its **transport**.

As concerns nematode **Heligmosomoides polygyrus**, the bibliographic research has pointed out many and important relationships between this hookworm (identified by BLAST research for the significant alignments of **Sequence n°1/1** and some of its DNA bases) and **insulin**, **immune system**, **apoptosis, diabetes type 1, obesity** and **insulite.**

It was not possible to investigate on the relationships between *Pseudomonas* and *Heligmosomoides polygyrus*, because only one article was found on the web. Furthermore, it was dated and not available online.

It is to be hoped that this subject will be extensively studied in the future, especially because some features of *Pseudomonas* appear to be **opposite** than those of *Heligmosomoides polygyrus;* in facts, in case of infection from *Heligmosomoides polygyrus*, the seriousness of *Diabetes type 1*, *obesity*, *insulite*, *apoptosis* seem to decrease (while in case of infection from *Pseudomonas* it increases).

Before moving on, to the second part of this chapter, it is necessary to highlight the importance of the bibliographic research about **cellular respiration**, **ROS** (*Reactive Oxygen Species*) and **iron levels** and its **transport**, that are (together or separately) an essential point of convergence among the different aspects of the phenomena and pathologies displayed in the first part of this chapter.

This **hypothesis** to validate, namely that **the new generated sequence** (generated following one of the possible "non-obvious trends" of the original sequence) would have strong relationships with the features of the **original sequence** (to be precise with **Insulin Chain A**) seem to be plausible and provable. The bibliographic research seem to confirm that **insulin** (and consequently **Insulin Chain A**) is somehow implicated with some features of both **Pseudomonas** bacteria and nematode **Heligmosomoides polygyrus** (*organisms* constituted by DNA bases of the new generated sequence).

In conclusion, the *original sequence* analysis (effected through **T.T.E.S.**) based on one of its "non obvious trends" (***Trend n°1***), the creation of a new DNA sequence (**Sequence n°1/1**) generated from ***Trend n°1*** of the *original sequence* and finally their *congruence* with the data obtained through the *bibliographic detailed-study*, open new perspectives as concerns genetic research and its many implementations.

1.19 RESEARCH PERSPECTIVES IN THE NEXT CHAPTERS

BLAST research on the new generated sequence, generated following one of its possible "non-obvious trends" (***Trend n°1***), has produced other significant bases alignments apart from **Pseudomonas** bacteria and nematode **Heligmosomoides polygyrus**.

In the following parts of this chapter, the same type of bibliographic research will be effected on all the *organisms* in which BLAST research has found other significant alignments with **Sequence n°1/1**.

Therefore, from this paper's standpoint, every *organism*, in which a significant alignment with the **new produced sequence** has been found, should be connected, indirectly or directly, with

1) the **original sequence** (**Insulin Chain A**);
2) those *organisms* that have been identified with Blast research carried out on **Insulin Chain A**;
3) as well as, partly, to those *organisms* in which significant alignments with the **new produced sequence** have been found.

The *aim* of the next chapters will be the research on this new interesting perspective of *genetic investigation.*

Another *goal*, more difficult and challenging, will be the analysis of the result of **every significant alignment** obtained by **every possible sequence** generated by following *all the possible specific* "non-obvious trends" of the *original sequence* (specifically **Insulin Chain A**).

Selected Scientific Bibliography

BIBLIOGRAPHY ON PSEUDOMONAS

1.20 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND PSEUDOMONAS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and "*Pseudomonas*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS

Sort by: Most Recent - Search results = Items: 147

Among the results of the research **some significant scientific papers** have been chosen:

Zhi L, Yu Y, Jiang Z, Wang D. *mir-355 Functions as An Important Link between p38 MAPK Signaling and Insulin Signaling in the Regulation of Innate Immunity*. Sci Rep. 2017 Nov 6;7(1):14560. doi: 10.1038/s41598-017-15271-2. PubMed PMID: 29109437; PubMed Central PMCID: PMC5673931. https://www.ncbi.nlm.nih.gov/pubmed/29109437

Lee K, Mylonakis E. *An Intestine-Derived Neuropeptide Controls Avoidance Behavior in Caenorhabditis elegans*. Cell Rep. 2017 Sep 5;20(10):2501-2512. doi: 10.1016/j.celrep.2017.08.053. PubMed PMID: 28877481.
https://www.ncbi.nlm.nih.gov/pubmed/28877481

Baker EH, Baines DL. *Airway Glucose Homeostasis: A New Target in the Prevention and Treatment of Pulmonary Infection*. Chest. 2017 Jun 10. pii: S0012-3692(17)31051-6. doi: 10.1016/j.chest.2017.05.031. [Epub ahead of print] Review. PubMed PMID: 28610911. https://www.ncbi.nlm.nih.gov/pubmed/28610911

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https://www.ncbi.nlm.nih.gov/pubmed/22577361

1.21 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND PSEUDOMONAS (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*" and "*Pseudomonas*" (**Please note**: the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS

Sort by: Best Match - Search results = Item: 134

Among the results of the research **some significant scientific papers** have been chosen:

Nikolić DM. *Effects of bacterial infection on insulin secretory capacity of human adult pancreatic islets*. Br J Biomed Sci. 2011;68(4):181-4. PubMed PMID: 22263431. https://www.ncbi.nlm.nih.gov/pubmed/22263431

Woods DE, Jones AL, Hill PJ. *Interaction of insulin with Pseudomonas pseudomallei*. Infect Immun. 1993 Oct;61(10):4045-50. PubMed PMID: 7691742; PubMed Central PMCID: PMC281122. https://www.ncbi.nlm.nih.gov/pubmed/7691742

Gauglitz GG, Toliver-Kinsky TE, Williams FN, Song J, Cui W, Herndon DN, Jeschke MG. *Insulin increases resistance to burn wound infection-associated sepsis*. Crit Care Med. 2010 Jan;38(1):202-8. doi: 10.1097/CCM.0b013e3181b43236. PubMed PMID: 19770742; PubMed Central PMCID: PMC3824369. https://www.ncbi.nlm.nih.gov/pubmed/19770742

Currie B. *Pseudomonas pseudomallei-insulin interaction*. Infect Immun. 1995 Sep;63(9):3745. PubMed PMID: 7543888; PubMed Central PMCID: PMC173524. https://www.ncbi.nlm.nih.gov/pubmed/7543888

Evans EA, Kawli T, Tan MW. *Pseudomonas aeruginosa suppresses host immunity by activating the DAF-2 insulin-like signaling pathway in Caenorhabditis elegans*. PLoS Pathog. 2008 Oct;4(10):e1000175. doi: 10.1371/journal.ppat.1000175. Epub 2008 Oct 17. PubMed PMID: 18927620; PubMed Central PMCID: PMC2568960. https://www.ncbi.nlm.nih.gov/pubmed/18927620

Plotkin BJ, Viselli SM. *Effect of insulin on microbial growth*. Curr Microbiol. 2000 Jul;41(1):60-4. PubMed PMID: 10919401. https://www.ncbi.nlm.nih.gov/pubmed/10919401

Chen CS, Bellier A, Kao CY, Yang YL, Chen HD, Los FC, Aroian RV. *WWP-1 is a novel modulator of the DAF-2 insulin-like signalling network involved in pore-forming toxin cellular defenses in Caenorhabditis elegans*. PLoS One. 2010 Mar 2;5(3):e9494. doi: 10.1371/journal.pone.0009494. PubMed PMID: 20209166; PubMed Central PMCID: PMC2830483. https://www.ncbi.nlm.nih.gov/pubmed/20209166

Hunninghake GW, Doerschug KC, Nymon AB, Schmidt GA, Meyerholz DK, Ashare A. *Insulin-like growth factor-1 levels contribute to the development of bacterial translocation in sepsis*. Am J Respir Crit Care Med. 2010 Aug 15;182(4):517-25. doi: 10.1164/rccm.200911-1757OC. Epub 2010 Apr 22. PubMed PMID: 20413631; PubMed Central PMCID: PMC2937242. https://www.ncbi.nlm.nih.gov/pubmed/20413631

Przkora R, Herndon DN, Finnerty CC, Jeschke MG. *Insulin attenuates the cytokine response in a burn wound infection model*. Shock. 2007 Feb;27(2):205-8. PubMed PMID: 17224797. https://www.ncbi.nlm.nih.gov/pubmed/17224797

Shouldice SR, Heras B, Jarrott R, Sharma P, Scanlon MJ, Martin JL. *Characterization of the DsbA oxidative folding catalyst from Pseudomonas aeruginosa reveals a highly oxidizing protein that binds small molecules*. Antioxid Redox Signal. 2010 Apr 15;12(8):921-31. doi: 10.1089/ars.2009.2736. PubMed PMID: 19788398. https://www.ncbi.nlm.nih.gov/pubmed/19788398

Kanai K, Kondo E, Kurata T. *Affinity and response of Burkholderia pseudomallei and Burkholderia cepacia to insulin*. Southeast Asian J Trop Med Public Health. 1996 Sep;27(3):584-91. PubMed PMID: 9185275. https://www.ncbi.nlm.nih.gov/pubmed/9185275

Lanng S, Thorsteinsson B, Nerup J, Koch C. *Diabetes mellitus in cystic fibrosis: effect of insulin therapy on lung function and infections*. Acta Paediatr. 1994 Aug;83(8):849-53. PubMed PMID: 7981562. https://www.ncbi.nlm.nih.gov/pubmed/7981562

Kawli T, Tan MW. *Neuroendocrine signals modulate the innate immunity of Caenorhabditis elegans through insulin signaling*. Nat Immunol. 2008 Dec; 9(12):1415-24. doi: 10.1038/ni.1672. Epub 2008 Oct 14. PubMed PMID: 18854822. https://www.ncbi.nlm.nih.gov/pubmed/18854822

Kitahara Y, Ishibashi T, Harada Y, Takamoto M, Tanaka K. *Reduced resistance to Pseudomonas septicaemia in diabetic mice*. Clin Exp Immunol. 1981 Mar;43(3):590-8.PubMed PMID: 7026096; PubMed Central PMCID: PMC1537194. https://www.ncbi.nlm.nih.gov/pubmed/7026096

Page KA, Dejardin S, Kahn CR, Kulkarni RN, Herold KC, Inzucchi SE. *A patient with type B insulin resistance syndrome, responsive to immune therapy*. Nat Clin Pract Endocrinol Metab. 2007 Dec;3(12):835-40. PubMed PMID: 18026162. https://www.ncbi.nlm.nih.gov/pubmed/18026162

Evans EA, Chen WC, Tan MW. *The DAF-2 insulin-like signaling pathway independently regulates aging and immunity in C. elegans*. Aging Cell. 2008 Dec;7(6):879-93. doi: 10.1111/j.1474-9726.2008.00435.x. Epub 2008 Sep 8. PubMedPMID: 18782349; PubMed Central PMCID: PMC2630471. https://www.ncbi.nlm.nih.gov/pubmed/18782349

Kusunoki T, Kase K, Ikeda K. *A case of orbital apex syndrome due to Pseudomonas aeruginosa infection*. Clin Pract. 2011 Nov 29;1(4):e127. doi: 10.4081/cp.2011.e127. eCollection 2011 Sep 28. PubMed PMID: 24765368; PubMed Central PMCID: PMC3981405. https://www.ncbi.nlm.nih.gov/pubmed/24765368

Prior TI, Helman LJ, FitzGerald DJ, Pastan I. *Cytotoxic activity of a recombinant fusion protein between insulin-like growth factor I and Pseudomonas exotoxin*. Cancer Res. 1991 Jan 1;51(1):174-80. PubMed PMID: 1846308. https://www.ncbi.nlm.nih.gov/pubmed/1846308

Alper S, McElwee MK, Apfeld J, Lackford B, Freedman JH, Schwartz DA. *The Caenorhabditis elegans germ line regulates distinct signaling pathways to control lifespan and innate immunity*. J Biol Chem. 2010 Jan 15;285(3):1822-8. doi: 10.1074/jbc.M109.057323. Epub 2009 Nov 18. PubMed PMID: 19923212; PubMed Central PMCID: PMC2804340.
https://www.ncbi.nlm.nih.gov/pubmed/19923212

1. 22 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, PSEUDOMONAS AND DIABETES (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and "*Pseudomonas*" and "*Diabetes*" (**Please note**: the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+PSEUDOMONAS+DIABETES

Sort by: Most Recent - ***Search results = Items: 49***

Among the results of the research **some significant scientific papers** have been chosen:

Snarski E, Milczarczyk A, Hałaburda K, Torosian T, Paluszewska M, Urbanowska E, Król M, Boguradzki P, Jedynasty K, Franek E, Wiktor-Jedrzejczak W. *Immunoablation and autologous hematopoietic stem cell transplantation in the treatment of new-onset type 1 diabetes mellitus: long-term observations*. Bone Marrow Transplant. 2016 Mar;51(3):398-402. doi: 10.1038/bmt.2015.294. Epub 2015 Dec 7. PubMed PMID: 26642342.
https://www.ncbi.nlm.nih.gov/pubmed/26642342

Choi Y, Kwon Y, Kim DK, Jeon J, Jang SC, Wang T, Ban M, Kim MH, Jeon SG, Kim MS, Choi CS, Jee YK, Gho YS, Ryu SH, Kim YK. *Gut microbe-derived extracellular vesicles induce insulin resistance, thereby impairing glucose metabolism in skeletal muscle*. Sci Rep. 2015 Oct 29;5:15878. doi: 10.1038/srep15878. PubMed PMID: 26510393; PubMed Central PMCID: PMC4625370. https://www.ncbi.nlm.nih.gov/pubmed/26510393

Simkhada R. *Urinary tract infection and antibiotic sensitivity pattern among diabetics*. Nepal Med Coll J. 2013 Mar;15(1):1-4. PubMed PMID: 24592783.
https://www.ncbi.nlm.nih.gov/pubmed/24592783

Watters C, Everett JA, Haley C, Clinton A, Rumbaugh KP. *Insulin treatment modulates the host immune system to enhance Pseudomonas aeruginosa wound biofilms*. Infect Immun. 2014 Jan;82(1):92-100. doi: 10.1128/IAI.00651-13. Epub 2013 Oct 14. PubMed PMID: 24126517; PubMed Central PMCID: PMC3911840. https://www.ncbi.nlm.nih.gov/pubmed/24126517

Watters C, DeLeon K, Trivedi U, Griswold JA, Lyte M, Hampel KJ, Wargo MJ, Rumbaugh KP. *Pseudomonas aeruginosa biofilms perturb wound resolution and antibiotic tolerance in diabetic mice*. Med Microbiol Immunol. 2013 Apr;202(2):131-41. doi: 10.1007/s00430-012-0277-7. Epub 2012 Sep 25. PubMed PMID: 23007678; PubMed Central PMCID: PMC3567255. https://www.ncbi.nlm.nih.gov/pubmed/23007678

Nyirenda KK, Saka JD, Naidoo D, Maharaj VJ, Muller CJ. *Antidiabetic, anti-oxidant and antimicrobial activities of Fadogia ancylantha extracts from Malawi*. J Ethnopharmacol. 2012 Aug 30;143(1):372-6. doi: 10.1016/j.jep.2012.07.002. Epub 2012 Jul 16. PubMed PMID: 22800680. https://www.ncbi.nlm.nih.gov/pubmed/22800680

Murandu M, Webber MA, Simms MH, Dealey C. *Use of granulated sugar therapy in the management of sloughy or necrotic wounds: a pilot study*. J Wound Care. 2011 May;20(5):206, 208, 210 passim. PubMed PMID: 21647066. https://www.ncbi.nlm.nih.gov/pubmed/21647066

Paul S, Hou CT, Kang SC. *alpha-Glucosidase inhibitory activities of 10-hydroxy-8(E)-octadecenoic acid: an intermediate of bioconversion of oleic acid to 7,10-dihydroxy-8(E)-octadecenoic acid*. N Biotechnol. 2010 Sep 30;27(4):419-23. doi: 10.1016/j.nbt.2010.04.002. Epub 2010 Apr 10. PubMed PMID: 20385262. https://www.ncbi.nlm.nih.gov/pubmed/20385262

Phung OJ, Quercia RA, Keating K, Baker WL, Bell JL, White CM, Coleman CI. *Improved glucose control associated with i.v. chromium administration in two patients receiving enteral nutrition*. Am J Health Syst Pharm. 2010 Apr 1;67(7):535-41. doi: 10.2146/ajhp090109. PubMed PMID: 20237381. https://www.ncbi.nlm.nih.gov/pubmed/20237381

Navarro J, Rainisio M, Harms HK, Hodson ME, Koch C, Mastella G, Strandvik B, McKenzie SG. *Factors associated with poor pulmonary function: cross-sectional analysis of data from the ERCF*. European Epidemiologic Registry of Cystic Fibrosis. Eur Respir J. 2001 Aug;18(2):298-305. PubMed PMID: 11529288. https://www.ncbi.nlm.nih.gov/pubmed/11529288

Kanai K, Kondo E, Kurata T. *Affinity and response of Burkholderia pseudomallei and Burkholderia cepacia to insulin*. Southeast Asian J Trop Med Public Health. 1996 Sep;27(3):584-91. PubMed PMID: 9185275. https://www.ncbi.nlm.nih.gov/pubmed/9185275

Hariga I, Mardassi A, Belhaj Younes F, Ben Amor M, Zribi S, Ben Gamra O, Mbarek C, El Khedim A. *Necrotizing otitis externa: 19 cases' report*. Eur Arch Otorhinolaryngol. 2010 Aug;267(8):1193-8. doi: 10.1007/s00405-009-1194-2. Epub 2010 Jan 8. Review. PubMed PMID: 20058154. https://www.ncbi.nlm.nih.gov/pubmed/20058154

Frangoulidis D, Schwab D, Scholz H, Tomaso H, Hogardt M, Meyer H, Splettstoesser WD, Pohle FK. *'Imported' melioidosis in Germany: relapse after 10 years*. Trans R Soc Trop Med Hyg. 2008 Dec;102 Suppl 1:S40-1. doi: 10.1016/S0035-9203(08)70011-7. PubMed PMID: 19121684. https://www.ncbi.nlm.nih.gov/pubmed/19121684

Brennan AL, Gyi KM, Wood DM, Johnson J, Holliman R, Baines DL, Philips BJ, Geddes DM, Hodson ME, Baker EH. *Airway glucose concentrations and effect on growth of respiratory pathogens in cystic fibrosis*. J Cyst Fibros. 2007 Apr;6(2):101-9. Epub 2006 Jul 17. PubMed PMID: 16844431. https://www.ncbi.nlm.nih.gov/pubmed/16844431

Qin KW, Jie ZG, Wang GX, Chang YL, Zhang HY, Cao JP, Chen XH, Peng ZH. *Simultaneous pancreas-kidney transplantation with portal-enteric drainage: a case report*. Hepatobiliary Pancreat Dis Int. 2004 Nov;3(4):620-2. PubMed PMID: 15567759. https://www.ncbi.nlm.nih.gov/pubmed/15567759

Qari FA, Akbar D. *Diabetic foot: presentation and treatment*. Saudi Med J. 2000 May;21(5):443-6. PubMed PMID: 11500678. https://www.ncbi.nlm.nih.gov/pubmed/11500678

Li J, Kamath K, Dwivedi C. Gellan film as an implant for insulin delivery. J Biomater Appl. 2001 Apr;15(4):321-43. PubMed PMID: 11336386. https://www.ncbi.nlm.nih.gov/pubmed/11336386

Martel J, Duclos JY, Darrouzet V, Guyot M, Bébéar JP. [*Malignant or necrotizing otitis externa: experience in 22 cases*]. Ann Otolaryngol Chir Cervicofac. 2000 Nov;117(5):291. French. PubMed PMID: 11084403. https://www.ncbi.nlm.nih.gov/pubmed/11084403

Lazitsh D, Jeshitsh S. [*Malignant otitis externa with diabetes mellitus insulin-dependent patients*]. Srp Arh Celok Lek. 1995 Nov-Dec;123(11-12):317-9. Serbian. PubMed PMID: 16296247. https://www.ncbi.nlm.nih.gov/pubmed/16296247

Naghibi M, Smith RP, Baltch AL, Gates SA, Wu DH, Hammer MC, Michelsen PB. *The effect of diabetes mellitus on chemotactic and bactericidal activity of human polymorphonuclear leukocytes*. Diabetes Res Clin Pract. 1987 Nov;4(1):27-35. PubMed PMID: 3121272. https://www.ncbi.nlm.nih.gov/pubmed/3121272

Meyers BR, Mendelson MH, Parisier SC, Hirschman SZ. *Malignant external otitis*. *Comparison of monotherapy vs combination therapy*. Arch Otolaryngol Head Neck Surg. 1987 Sep;113(9):974-8. PubMed PMID: 3606849. https://www.ncbi.nlm.nih.gov/pubmed/3606849

Rayfield EJ, Curnow RT, Reinhard D, Kochicheril NM. *Effects of acute endotoxemia on glucoregulation in normal and diabetic subjects*. J Clin Endocrinol Metab. 1977 Sep;45(3):513-21. PubMed PMID: 198426. https://www.ncbi.nlm.nih.gov/pubmed/198426

1.23 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND BURKHOLDERIA (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and *Burkholderia*" (**Please note**: the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+BURKHOLDERIA

Sort by: Most Recent - ***Search results = Items: 23***

Schieber AM, Lee YM, Chang MW, Leblanc M, Collins B, Downes M, Evans RM, Ayres JS. *Disease tolerance mediated by microbiome E. coli involves inflammasome and IGF-1 signaling.* Science. 2015 Oct 30;350(6260):558-63. doi: 10.1126/science.aac6468. PMID: 26516283. PMCID: PMC4732872. https://www.ncbi.nlm.nih.gov/pubmed/26516283

Quan HB, Li TY, Gao YY, Chen DX. *Clinical features of diabetes mellitus cases complicated by Burkholderia pseudomallei septicemia*. Genet Mol Res. 2014 Apr 17;13(2):3108-16. doi: 10.4238/2014.April.17.7. PubMed PMID: 24782168.
https://www.ncbi.nlm.nih.gov/pubmed/24782168

Liu X, Foo G, Lim WP, Ravikumar S, Sim SH, Win MS, Goh JG, Lim JH, Ng YH, Fisher D, Khoo CM, Tan G, Chai LY. *Sulphonylurea usage in melioidosis is associated with severe disease and suppressed immune response*. PLoS Negl Trop Dis. 2014 Apr 24;8(4):e2795. doi: 10.1371/journal.pntd.0002795. eCollection 2014 Apr. PubMed PMID: 24762472; PubMed Central PMCID: PMC3998927. https://www.ncbi.nlm.nih.gov/pubmed/24762472

Hodgson KA, Govan BL, Walduck AK, Ketheesan N, Morris JL. *Impaired early cytokine responses at the site of infection in a murine model of type 2 diabetes and melioidosis comorbidity*. Infect Immun. 2013 Feb;81(2):470-7. doi: 10.1128/IAI.00930-12. Epub 2012 Dec 3. PubMed PMID: 23208607; PubMed Central PMCID: PMC3553796.
https://www.ncbi.nlm.nih.gov/pubmed/23208607

Nisr RB, Moody AJ, Gilpin ML. *Screening microorganisms for insulin binding reveals binding by Burkholderia multivorans and Burkholderia cenocepacia and novel attachment of insulin to Aeromonas salmonicida via the A-layer*. FEMS Microbiol Lett. 2012 Mar;328(2):93-9. doi: 10.1111/j.1574-6968.2011.02484.x. Epub2012 Jan 17. PubMed PMID: 22171975.
https://www.ncbi.nlm.nih.gov/pubmed/22171975

Sterescu AE, Rhodes B, Jackson R, Dupuis A, Hanna A, Wilson DC, Tullis E, Pencharz PB. *Natural history of glucose intolerance in patients with cystic fibrosis: ten-year prospective observation program. J Pediatr*. 2010 Apr;156(4):613-7. doi: 10.1016/j.jpeds.2009.10.019. Epub 2009 Dec 3. PubMed PMID: 19962154. https://www.ncbi.nlm.nih.gov/pubmed/19962154

Mori T, Yamashita T, Furihata K, Nagai K, Suzuki K, Hayakawa Y, Shin-Ya K. *Burkholone, a new cytotoxic antibiotic against IGF-I dependent cells from Burkholderia sp. J Antibiot (Tokyo).* 2007 Nov;60(11):713-6. PubMed PMID: 18057702.
https://www.ncbi.nlm.nih.gov/pubmed/18057702

Christenson B, Fuxench Z, Morales JA, Suárez-Villamil RA, Souchet LM. *Severe community-acquired pneumonia and sepsis caused by Burkholderia pseudomallei associated with flooding in Puerto Rico*. Bol Asoc Med P R. 2003 Nov-Dec;95(6):17-20. PubMed PMID: 15449787.
https://www.ncbi.nlm.nih.gov/pubmed/15449787

Kiertiburanakul S, Sungkanuparph S, Kositchiwat S, Vorachit M. *Burkholderia pseudomallei: abscess in an unusual site*. J Postgrad Med. 2002 Apr-Jun;48(2):124-6. PubMed PMID: 12215696.
https://www.ncbi.nlm.nih.gov/pubmed/12215696

Jeromson S, Keig P, Kerr K. *Interaction of insulin and Burkholderia cepacia. Clin Microbiol Infect*. 1999 Jul; 5(7):439-442. PubMed PMID: 11853570. DOI: dx.doi.org/10.1111/j.1469-0691.1999.tb00169.x https://www.ncbi.nlm.nih.gov/pubmed/11853570

Panamonta O, Lumbiganon P. *Diabetic ketoacidosis and melioidosis in a child*. J Med Assoc Thai. 1997 Oct;80(10):671-4. PubMed PMID: 10904572.
https://www.ncbi.nlm.nih.gov/pubmed/10904572

Simpson AJ, Wuthiekanun V. *Interaction of insulin with Burkholderia pseudomallei may be caused by a preservative*. J Clin Pathol. 2000 Feb;53(2):159-60. PubMed PMID: 10767836; PubMed Central PMCID: PMC1763299.https://www.ncbi.nlm.nih.gov/pubmed/10767836

Doershuk CF, Stern RC. *Timing of referral for lung transplantation for cystic fibrosis: overemphasis on FEV1 may adversely affect overall survival*. Chest. 1999 Mar;115(3):782-7. PubMed PMID: 10084492. https://www.ncbi.nlm.nih.gov/pubmed/10084492

1.24 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND CYSTATHIONINE GAMMA-SYNTHASE

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the terms "*Insulin*" and "*Cystathionine Gamma-Synthase*".

https://www.ncbi.nlm.nih.gov/pmc/?term=INSULIN+CYSTATHIONINE+GAMMA-SYNTHASE

Search results = Items: 16

From the results of the research only the **most significant articles** have been chosen:

Hak Joo Lee, Meenalakshmi M. Mariappan, Denis Feliers, Rita C. Cavaglieri, Kavithalakshmi Sataranatarajan, Hanna E. Abboud, Goutam Ghosh Choudhury, Balakuntalam S. Kasinath. *Hydrogen Sulfide Inhibits High Glucose-induced Matrix Protein Synthesis by Activating AMP-activated Protein Kinase in Renal Epithelial Cells*. J Biol Chem. 2012 Feb 10; 287(7): 4451–4461. Published online 2011 Dec 9. doi: 10.1074/jbc.M111.278325 PMCID: PMC3281646. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3281646/

Roderick N Carter, Nicholas M Morton. *Cysteine and hydrogen sulphide in the regulation of metabolism: insights from genetics and pharmacology*. J Pathol. 2016 Jan; 238(2): 321–332. Published online 2015 Nov 13. doi: 10.1002/path.4659 PMCID: PMC4832394. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4832394

Shaimaa S. El-Sayed, Mohamed NM. Zakaria, Rasha H. Abdel-Ghany, Abdel A. Abdel-Rahman. *Cystathionine-γ lyase-derived hydrogen sulfide mediates the cardiovascular protective effects of moxonidine in diabetic rats*. Eur J Pharmacol. Author manuscript; available in PMC 2017 Jul 15.Published in final edited form as: Eur J Pharmacol. 2016 Jul 15; 783: 73–84. Published online 2016 Apr 29. doi: 10.1016/j.ejphar.2016.04.054 PMCID: PMC4893977. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4893977

Fuqiang Yin, Agnieszka Pajak, Ralph Chapman, Andrew Sharpe, Shangzhi Huang, Frédéric Marsolais. *Analysis of common bean expressed sequence tags identifies sulfur metabolic pathways active in seed and sulfur-rich proteins highly expressed in the absence of phaseolin and major lectins*. BMC Genomics. 2011; 12: 268. Published online 2011 May 26. doi: 10.1186/1471-2164-12-268 PMCID: PMC3115882. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3115882

Oksana Tehlivets, Nermina Malanovic, Myriam Visram, Tea Pavkov-Keller, Walter Keller. *S-adenosyl-L-homocysteine hydrolase and methylation disorders: Yeast as a model system*. Biochim Biophys Acta. 2013 Jan; 1832(1): 204–215. doi: 10.1016/j.bbadis.2012.09.007 PMCID: PMC3787734. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3787734

Elosie Y Streeter, Emilio Badoer, Owen L Woodman, Joanne L Hart. *Effect of type 1 diabetes on the production and vasoactivity of hydrogen sulfide in rat middle cerebral arteries.* Physiol Rep. 2013 Oct; 1(5): e00111. Published online 2013 Oct 20. doi: 10.1002/phy2.111 PMCID: PMC3841046. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3841046

Heidi M. Blank, Shefali Gajjar, Andrey Belyanin, Michael Polymenis. *Sulfur Metabolism Actively Promotes Initiation of Cell Division in Yeast.* PLoS One. 2009; 4(11): e8018. Published online 2009 Nov 24. doi: 10.1371/journal.pone.0008018 PMCID: PMC2776973. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2776973

Matthew Whiteman, Philip K Moore. *Hydrogen sulfide and the vasculature: a novel vasculoprotective entity and regulator of nitric oxide bioavailability?* J Cell Mol Med. 2009 Mar; 13(3): 488–507. Published online 2009 Mar 24. doi: 10.1111/j.1582-4934.2009.00645.x PMCID: PMC3822510. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3822510

1.25 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, HOMOCYSTEINE AND HYDROGEN SULFIDE SYSTEM

For a deeper study on this subject please see the following **link** that shows the results of the research :

https://www.ncbi.nlm.nih.gov/pubmed?db=pubmed&cmd=link&linkname=pubmed_pubmed&uid=10470367

Search results = Items: 91

In conclusion, **two articles** and **Ling Zhang**'s PhD thesis (2012), about the relationship between *Insulin, cysteine metabolism,* and the role of *Hydrogen sulphide:*

Kimura H. *Hydrogen sulfide: its production, release and functions.* Amino Acids. 2011 Jun;41(1):113-21. PMID: 20191298. DOI: 10.1007/s00726-010-0510-x. https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+HOMOCYSTEINE+HYDROGEN+SULFIDE+SYSTEM

Yukiko Kaneko, Yuka Kimura, Hideo Kimura, Ichiro Niki. *l-Cysteine Inhibits Insulin Release From the Pancreatic β-Cell. Possible Involvement of Metabolic Production of Hydrogen Sulfide, a Novel Gasotransmitter*. Diabetes May 2006, 55 (5) 1391-1397. PMID: 16644696. DOI: 10.2337/db05-1082. https://www.ncbi.nlm.nih.gov/pubmed/16644696

L. Zhang. *Cystathionine gamma-lyase/hydrogen sulfide system and glucose homeostasis.* Lakehead University. 12-Feb-2013. http://knowledgecommons.lakeheadu.ca/handle/2453/443

1.26 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS AND CYSTATHIONINE GAMMA-SYNTHASE

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) in which the terms "*Pseudomonas*" and "*Cystathionine Gamma-Synthase*" appear together.

https://www.ncbi.nlm.nih.gov/pubmed/?term=Pseudomonas+CYSTATHIONINE+GAMMA-SYNTHASE

Search results = Items: 6

Motoshima H, Inagaki K, Kumasaka T, Furuichi M, Inoue H, Tamura T, Esaki N, Soda K, Tanaka N, Yamamoto M, Tanaka H. *Crystal structure of the pyridoxal 5'-phosphate dependent L-methionine gamma-lyase from Pseudomonas putida*. J Biochem. 2000 Sep;128(3):349-54. PubMed PMID: 10965031. https://www.ncbi.nlm.nih.gov/pubmed/10965031

Vermeij P, Kertesz MA. *Pathways of assimilative sulfur metabolism in Pseudomonas putida*. J Bacteriol. 1999 Sep;181(18):5833-7. PubMed PMID: 10482527; PubMed Central PMCID: PMC94106. https://www.ncbi.nlm.nih.gov/pubmed/10482527

Taté R, Riccio A, Caputo E, Iaccarino M, Patriarca EJ. *The Rhizobium etli metZ gene is essential for methionine biosynthesis and nodulation of Phaseolus vulgaris*. Mol Plant Microbe Interact. 1999 Jan;12(1):24-34. PubMed PMID: 9885190.
https://www.ncbi.nlm.nih.gov/pubmed/9885190

Inoue H, Inagaki K, Sugimoto M, Esaki N, Soda K, Tanaka H. *Structural analysis of the L-methionine gamma-lyase gene from Pseudomonas putida*. J Biochem. 1995 May;117(5):1120-5. PubMed PMID: 8586629. https://www.ncbi.nlm.nih.gov/pubmed/8586629

Foglino M, Borne F, Bally M, Ball G, Patte JC. *A direct sulfhydrylation pathway is used for methionine biosynthesis in Pseudomonas aeruginosa*. Microbiology. 1995 Feb;141 (Pt 2):431-9. PubMed PMID: 7704274. https://www.ncbi.nlm.nih.gov/pubmed/7704274

Nagasawa T, Kanzaki H, Yamada H. *Cystathionine gamma-lyase of Streptomyces phaeochromogenes. The occurrence of cystathionine gamma-lyase in filamentous bacteria and its purification and characterization*. J Biol Chem. 1984 Aug 25;259(16):10393-403. PubMed PMID: 6432781. https://www.ncbi.nlm.nih.gov/pubmed/6432781

To conclude, **two more interesting articles** about this topic:

G L Andersen, G A Beattie and S E Lindow. *Molecular Characterization and Sequence of a Methionine Biosynthetic Locus from Pseudomonas syringae.* Journal of Bacteriology, 1998. Vol. 180 Iss. 17 (1998) p. 4497 - 4507. PMCID: PMC107460.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC107460/

Hacham Y., Gophna U. e Amir R. *In vivo analysis of various substrates utilized by cystathionine gamma-synthase and O-acetylhomoserine sulfhydrylase in methionine biosynthesis.* Molecular Biology and Evolution, Volume 20, Issue 9, 1 September 2003, Pages 1513–1520. PMID: 12832650. https://doi.org/10.1093/molbev/msg169

1.27 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and "*Cytochrome c*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 745

Among the results of the research **some significant scientific papers** have been chosen:

Beyfuss K, Hood DA. *A systematic review of p53 regulation of oxidative stress in skeletal muscle*. Redox Rep. 2018 Jan 3:1-18. doi: 10.1080/13510002.2017.1416773. [Epub ahead of print] PubMed PMID: 29298131. https://www.ncbi.nlm.nih.gov/pubmed/29298131

Yuan F, Woollard JR, Jordan KL, Lerman A, Lerman LO, Eirin A. *Mitochondrial Targeted Peptides Preserve Mitochondrial Organization and Decrease Reversible Myocardial Changes in Early Swine Metabolic Syndrome*. Cardiovasc Res. 2017 Dec 18. doi: 10.1093/cvr/cvx245. [Epub ahead of print] PubMed PMID: 29267873. https://www.ncbi.nlm.nih.gov/pubmed/29267873

Sadighara M, Joktaji JP, Hajhashemi V, Minaiyan M. *Protective effects of coenzyme Q(10) and L-carnitine against statin-induced pancreatic mitochondrial toxicity in rats*. Res Pharm Sci. 2017 Dec;12(6):434-443. doi: 10.4103/1735-5362.217424. PubMed PMID: 29204172; PubMed Central PMCID: PMC5691570. https://www.ncbi.nlm.nih.gov/pubmed/29204172

Park HS, Cho HS, Kim TW. *Physical exercise promotes memory capability by enhancing hippocampal mitochondrial functions and inhibiting apoptosis in obesity-induced insulin resistance by high fat diet*. Metab Brain Dis. 2017 Nov 29. doi: 10.1007/s11011-017-0160-8. [Epub ahead of print] PubMed PMID: 29185193. https://www.ncbi.nlm.nih.gov/pubmed/29185193

Feng CC, Pandey S, Lin CY, Shen CY, Chang RL, Chang TT, Chen RJ, Viswanadha VP, Lin YM, Huang CY. *Cardiac apoptosis induced under high glucose condition involves activation of IGF2R signaling in H9c2 cardiomyoblasts and streptozotocin-induced diabetic rat hearts*. Biomed Pharmacother. 2017 Nov 6;97:880-885. doi: 10.1016/j.biopha.2017.11.020. [Epub ahead of print] PubMed PMID: 29136764. https://www.ncbi.nlm.nih.gov/pubmed/29136764

Zhang Y, Wang M, Dong H, Yu X, Zhang J. *Anti-hypoglycemic and hepatocyte-protective effects of hyperoside from Zanthoxylum bungeanum leaves in mice with high-carbohydrate/high-fat diet and alloxan-induced diabetes*. Int J Mol Med. 2018 Jan;41(1):77-86. doi: 10.3892/ijmm.2017.3211. Epub 2017 Oct 25. PubMed PMID: 29115390. https://www.ncbi.nlm.nih.gov/pubmed/29115390

Liu CM, Ma JQ, Sun JM, Feng ZJ, Cheng C, Yang W, Jiang H. *Association of changes in ER stress-mediated signaling pathway with lead-induced insulin resistance and apoptosis in rats and their prevention by A-type dimeric epigallocatechin-3-gallate*. Food Chem Toxicol. 2017 Dec;110:325-332. doi: 10.1016/j.fct.2017.10.040. Epub 2017 Oct 27. PubMed PMID: 29107025. https://www.ncbi.nlm.nih.gov/pubmed/29107025

Xie X, Sinha S, Yi Z, Langlais PR, Madan M, Bowen BP, Willis W, Meyer C. *Role f adipocyte mitochondria in inflammation, lipemia and insulin sensitivity in humans: effects of pioglitazone treatment*. Int J Obes (Lond). 2017 Aug 14. doi: 10.1038/ijo.2017.192. [Epub ahead of print] PubMed PMID: 29087390. https://www.ncbi.nlm.nih.gov/pubmed/29087390

Onyango AN. *The Contribution of Singlet Oxygen to Insulin Resistance*. Oxid Med Cell Longev. 2017;2017:8765972. doi: 10.1155/2017/8765972. Epub 2017 Sep 7. Review. PubMed PMID: 29081894; PubMed Central PMCID: PMC5610878.
https://www.ncbi.nlm.nih.gov/pubmed/29081894

Jiménez-Maldonado A, Ying Z, Byun HR, Gomez-Pinilla F. *Short-term fructose ingestion affects the brain independently from establishment of metabolic syndrome*. Biochim Biophys Acta. 2018 Jan;1864(1):24-33. doi: 10.1016/j.bbadis.2017.10.012. Epub 2017 Oct 7. PubMed PMID: 29017895; PubMed Central PMCID: PMC5705281.
https://www.ncbi.nlm.nih.gov/pubmed/29017895

Mulder H. *Transcribing β-cell mitochondria in health and disease*. Mol Metab. 2017 May 31;6(9):1040-1051. doi: 10.1016/j.molmet.2017.05.014. eCollection 2017 Sep. Review. PubMed PMID: 28951827; PubMed Central PMCID: PMC5605719.
https://www.ncbi.nlm.nih.gov/pubmed/28951827

Wang G, Lu M, Yao Y, Wang J, Li J. *Esculetin exerts antitumor effect on human gastric cancer cells through IGF-1/PI3K/Akt signaling pathway*. Eur J Pharmacol. 2017 Nov 5;814:207-215. doi: 10.1016/j.ejphar.2017.08.025. Epub 2017 Aug 25. PubMed PMID: 28847482.
https://www.ncbi.nlm.nih.gov/pubmed/28847482

Chandirasegaran G, Elanchezhiyan C, Ghosh K, Sethupathy S. *Berberine chloride ameliorates oxidative stress, inflammation and apoptosis in the pancreas of Streptozotocin induced diabetic rats*. Biomed Pharmacother. 2017 Nov;95:175-185. doi: 10.1016/j.biopha.2017.08.040. Epub 2017 Sep 12. PubMed PMID: 28843149.https://www.ncbi.nlm.nih.gov/pubmed/28843149

Aghanoori MR, Smith DR, Roy Chowdhury S, Sabbir MG, Calcutt NA, Fernyhough P. *Insulin prevents aberrant mitochondrial phenotype in sensory neurons of type 1 diabetic rats*. Exp Neurol. 2017 Nov;297:148-157. doi: 10.1016/j.expneurol.2017.08.005. Epub 2017 Aug 10. PubMed PMID: 28803751; PubMed Central PMCID: PMC5612919.
https://www.ncbi.nlm.nih.gov/pubmed/28803751

Othman AI, El-Sawi MR, El-Missiry MA, Abukhalil MH. *Epigallocatechin-3-gallate protects against diabetic cardiomyopathy through modulating the cardiometabolic risk factors, oxidative stress, inflammation, cell death and fibrosis in streptozotocin-nicotinamide-induced diabetic rats*. Biomed Pharmacother. 2017 Oct;94:362-373. doi: 10.1016/j.biopha.2017.07.129. Epub 2017 Aug 1. PubMed PMID: 28772214. https://www.ncbi.nlm.nih.gov/pubmed/28772214

Silvander JSG, Kvarnström SM, Kumari-Ilieva A, Shrestha A, Alam CM, Toivola DM. *Keratins regulate β-cell mitochondrial morphology, motility, and homeostasis*. FASEB J. 2017 Oct;31(10):4578-4587. doi: 10.1096/fj.201700095R. Epub 2017 Jun 30. PubMed PMID: 28666985.
https://www.ncbi.nlm.nih.gov/pubmed/28666985

Wilson DF, Cember ATJ, Matschinsky FM. *The thermodynamic basis of glucose-stimulated insulin release: a model of the core mechanism*. Physiol Rep. 2017 Jun;5(12). pii: e13327. doi: 10.14814/phy2.13327. PubMed PMID: 28655753; PubMed Central PMCID: PMC5492210.
https://www.ncbi.nlm.nih.gov/pubmed/28655753

Wei XB, Guo L, Liu Y, Zhou SR, Liu Y, Dou X, Du SY, Ding M, Peng WQ, Qian SW, Huang HY, Tang QQ. *Synthesis of cytochrome c oxidase 1 (SCO1) inhibits insulin sensitivity by decreasing copper levels in adipocytes*. Biochem Biophys Res Commun. 2017 Sep 23;491(3):814-820. doi: 10.1016/j.bbrc.2017.06.124. Epub 2017 Jun 21. PubMed PMID: 28647369. https://www.ncbi.nlm.nih.gov/pubmed/28647369

Martín-Montañez E, Millon C, Boraldi F, Garcia-Guirado F, Pedraza C, Lara E, Santin LJ, Pavia J, Garcia-Fernandez M. *IGF-II promotes neuroprotection and neuroplasticity recovery in a long-lasting model of oxidative damage induced by glucocorticoids*. Redox Biol. 2017 Oct;13:69-81. doi: 10.1016/j.redox.2017.05.012. Epub 2017 May 26. PubMed PMID: 28575743; PubMed Central PMCID: PMC5454142. https://www.ncbi.nlm.nih.gov/pubmed/28575743

Candeias E, Sebastião I, Cardoso S, Carvalho C, Santos MS, Oliveira CR, Moreira PI, Duarte AI. *Brain GLP-1/IGF-1 Signaling and Autophagy Mediate Exendin-4 Protection Against Apoptosis in Type 2 Diabetic Rats*. Mol Neurobiol. 2017 Jun 2. doi: 10.1007/s12035-017-0622-3. [Epub ahead of print] PubMed PMID: 28573460. https://www.ncbi.nlm.nih.gov/pubmed/28573460

Hill S, Deepa SS, Sataranatarajan K, Premkumar P, Pulliam D, Liu Y, Soto VY, Fischer KE, Van Remmen H. *Sco2 deficient mice develop increased adiposity and insulin resistance*. Mol Cell Endocrinol. 2017 Nov 5;455:103-114. doi: 10.1016/j.mce.2017.03.019. Epub 2017 Apr 18. PubMed PMID: 28428045; PubMed Central PMCID: PMC5592144. https://www.ncbi.nlm.nih.gov/pubmed/28428045

Zhao B, Zheng Z. *Insulin Growth Factor 1 Protects Neural Stem Cells Against Apoptosis Induced by Hypoxia Through Akt/Mitogen-Activated Protein Kinase/Extracellular Signal-Regulated Kinase (Akt/MAPK/ERK) Pathway in Hypoxia-Ishchemic Encephalopathy*. Med Sci Monit. 2017 Apr 19;23:1872-1879. PubMed PMID: 28420864; PubMed Central PMCID: PMC5405785. https://www.ncbi.nlm.nih.gov/pubmed/28420864

Holvoet P, Vanhaverbeke M, Geeraert B, De Keyzer D, Hulsmans M, Janssens S. *Low Cytochrome Oxidase 1 Links Mitochondrial Dysfunction to Atherosclerosis in Mice and Pigs*. PLoS One. 2017 Jan 25;12(1):e0170307. doi: 10.1371/journal.pone.0170307. eCollection 2017. PubMed PMID: 28122051; PubMed Central PMCID: PMC5266248. 10.1371/journal.pone.0170307. eCollection 2017. PubMed PMID: 28122051; PubMed Central PMCID: PMC5266248. https://www.ncbi.nlm.nih.gov/pubmed/28122051

1.28 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND CYTOCHROME C (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+CYTOCHROME+C

Sort by: Best Match - Search results = Item: 626

Among the results of the research **some significant scientific papers** have been chosen:

Rountree AM, Neal AS, Lisowski M, Rizzo N, Radtke J, White S, Luciani DS, Kim F, Hampe CS, Sweet IR. *Control of insulin secretion by cytochrome C and calcium signaling in islets with impaired metabolism*. J Biol Chem. 2014 Jul 4;289(27):19110-9. doi: 10.1074/jbc.M114.556050. Epub 2014 May 19. PubMed PMID: 24841202; PubMed Central PMCID: PMC4081948. https://www.ncbi.nlm.nih.gov/pubmed/24841202

Sanderson TH, Mahapatra G, Pecina P, Ji Q, Yu K, Sinkler C, Varughese A, Kumar R, Bukowski MJ, Tousignant RN, Salomon AR, Lee I, Hüttemann M. *Cytochrome C is tyrosine 97 phosphorylated by neuroprotective insulin treatment*. PLoS One. 2013 Nov 5;8(11):e78627. doi: 10.1371/journal.pone.0078627. eCollection 2013. PubMed PMID: 24223835; PubMed Central PMCID: PMC3818486. https://www.ncbi.nlm.nih.gov/pubmed/24223835

Jung SR, Kuok IT, Couron D, Rizzo N, Margineantu DH, Hockenbery DM, Kim F, Sweet IR. *Reduced cytochrome C is an essential regulator of sustained insulin secretion by pancreatic islets*. J Biol Chem. 2011 May 20;286(20):17422-34. doi: 10.1074/jbc.M110.202820. Epub 2011 Mar 10. PubMed PMID: 21393241; PubMed Central PMCID: PMC3093816. https://www.ncbi.nlm.nih.gov/pubmed/21393241

Sanderson TH, Kumar R, Sullivan JM, Krause GS. *Insulin blocks cytochrome c release in the reperfused brain through PI3-K signaling and by promoting Bax/Bcl-XL binding*. J Neurochem. 2008 Aug;106(3):1248-58. doi: 10.1111/j.1471-4159.2008.05473.x. Epub 2008 Jun 2. PubMed PMID: 18518905; PubMed Central PMCID: PMC4441329. https://www.ncbi.nlm.nih.gov/pubmed/18518905

Weksler-Zangen S, Aharon-Hananel G, Mantzur C, Aouizerat T, Gurgul-Convey E, Raz I, Saada A. *IL-1β hampers glucose-stimulated insulin secretion in Cohen diabetic rat islets through mitochondrial cytochrome c oxidase inhibition by nitric oxide*. Am J Physiol Endocrinol Metab. 2014 Mar; 306 (6): E648-57. doi: 10.1152/ajpendo.00451.2013. Epub 2014 Jan 14. PubMed PMID: 24425765. https://www.ncbi.nlm.nih.gov/pubmed/24425765

P. Gaignard, M. Menezes, M. Schiff, A. Bayot, M. Rak, Ogier de Baulny, C, Su, M. Gilleron, A. Lombes, H. Abida, A. Tzagoloff, L. Riley, S. T. Cooper, K. Mina, P. Sivadorai, M, R. Davis, R. J. N. Allcock, N. Kresoje, N. G. Laing, D. R. Thorburn, A. Slama, J. Christodoulou and P. Rustin. ***Mutations in CYC1, Encoding Cytochrome c1 Subunit of Respiratory Chain Complex III, Cause Insulin-Responsive Hyperglycemia.*** AJHG, 8 August 2013, Volume 93, Issue 2, p 384–389. doi: 10.1016/j.ajhg.2013.06.015. Epub 2013 Aug 1. PubMed PMID: 23910460; PubMed C. PMCID: PMC3738829. https://www.ncbi.nlm.nih.gov/pubmed/23910460

Naia L, Ferreira IL, Cunha-Oliveira T, Duarte AI, Ribeiro M, Rosenstock TR, Laço MN, Ribeiro MJ, Oliveira CR, Saudou F, Humbert S, Rego AC. *Activation of IGF-1 and insulin signaling pathways ameliorate mitochondrial function and energy metabolism in Huntington's Disease human lymphoblasts*. Mol Neurobiol. 2015 Feb;51(1):331-48. doi: 10.1007/s12035-014-8735-4. Epub 2014 May 20. PubMed PMID: 24841383. https://www.ncbi.nlm.nih.gov/pubmed/24841383

Lee BS, Oh J, Kang SK, Park S, Lee SH, Choi D, Chung JH, Chung YW, Kang SM. *Insulin Protects Cardiac Myocytes from Doxorubicin Toxicity by Sp1-Mediated Transactivation of Survivin*. PLoS One. 2015 Aug 13;10(8):e0135438. doi: 10.1371/journal.pone.0135438. eCollection 2015. PubMed PMID: 26271039; PubMed Central PMCID: PMC4535909. https://www.ncbi.nlm.nih.gov/pubmed/26271039

Ribeiro M, Rosenstock TR, Oliveira AM, Oliveira CR, Rego AC. *Insulin and IGF-1 improve mitochondrial function in a PI-3K/Akt-dependent manner and reduce mitochondrial generation of reactive oxygen species in Huntington's disease knock-in striatal cells*. Free Radic Biol Med. 2014 Sep;74:129-44. doi: 10.1016/j.freeradbiomed.2014.06.023. Epub 2014 Jun 30. PubMed PMID: 24992836. https://www.ncbi.nlm.nih.gov/pubmed/24992836

Liang Y, Zhang M, Xia N, Yang Y, Feng L. *Effects of high concentration glucose on the expression of NF-kappaB, Bax and cytochrome C and apoptosis of islet cells in mice***.** J Huazhong Univ Sci Technolog Med Sci. 2009 Aug;29(4):439-44. doi: 10.1007/s11596-009-0410-z. Epub 2009 Aug 7. PubMed PMID: 19662359. https://www.ncbi.nlm.nih.gov/pubmed/19662359

Li Y, Wu H, Khardori R, Song YH, Lu YW, Geng YJ. *Insulin-like growth factor-1 receptor activation prevents high glucose-induced mitochondrial dysfunction, cytochrome-c release and apoptosis***.** Biochem Biophys Res Commun. 2009 Jun 26;384(2):259-64. doi: 10.1016/j.bbrc.2009.04.113. Epub 2009 May 4. PubMed PMID: 19406106. https://www.ncbi.nlm.nih.gov/pubmed/19662359

Lin Y, Sun X, Qiu L, Wei J, Huang Q, Fang C, Ye T, Kang M, Shen H, Dong S. *Exposure to bisphenol A induces dysfunction of insulin secretion and apoptosis through the damage of mitochondria in rat insulinoma (INS-1) cells*. Cell Death Dis. 2013 Jan 17;4:e460. doi: 10.1038/cddis.2012.206. PubMed PMID: 23328667; PubMed Central PMCID: PMC3563994. https://www.ncbi.nlm.nih.gov/pubmed/23328667

Zhao Z, Zhao C, Zhang XH, Zheng F, Cai W, Vlassara H, Ma ZA. *Advanced glycation end products inhibit glucose-stimulated insulin secretion through nitric oxide-dependent inhibition of cytochrome c oxidase and adenosine triphosphate synthesis*. Endocrinology. 2009 Jun;150(6):2569-76. doi: 10.1210/en.2008-1342. Epub 2009 Feb 26. PubMed PMID: 19246537; PubMed Central PMCID: PMC2689792. https://www.ncbi.nlm.nih.gov/pubmed/19246537

Rountree AM, Reed BJ, Cummings BP, Jung SR, Stanhope KL, Graham JL, Griffen SC, Hull RL, Havel PJ, Sweet IR. *Loss of coupling between calcium influx, energy consumption and insulin secretion associated with development of hyperglycaemia in the UCD-T2DM rat model of type 2 diabetes*. Diabetologia. 2013 Apr;56(4):803-13. doi: 10.1007/s00125-012-2808-6. Epub 2013 Feb 13. PubMed PMID: 23404441; PubMed Central PMCID: PMC3855025. https://www.ncbi.nlm.nih.gov/pubmed/23404441

Francés DE, Ronco MT, Monti JA, Ingaramo PI, Pisani GB, Parody JP, Pellegrino JM, Sanz PM, Carrillo MC, Carnovale CE. *Hyperglycemia induces apoptosis in rat liver through the increase of hydroxyl radical: new insights into the insulin effect*. J Endocrinol. 2010 May;205(2):187-200. doi: 10.1677/JOE-09-0462. Epub 2010 Feb 17. PubMed PMID: 20164374. https://www.ncbi.nlm.nih.gov/pubmed/20164374

Litwiniuk A, Pijet B, Pijet-Kucicka M, Gajewska M, Pająk B, Orzechowski A. *FOXO1 and GSK-3β Are Main Targets of Insulin-Mediated Myogenesis in C2C12 Muscle Cells*. PLoS One. 2016 Jan 19;11(1):e0146726. doi: 10.1371/journal.pone.0146726. eCollection 2016. PubMed PMID: 26785133; PubMed Central PMCID: PMC4718532. https://www.ncbi.nlm.nih.gov/pubmed/26785133

Deepa SS, Pulliam D, Hill S, Shi Y, Walsh ME, Salmon A, Sloane L, Zhang N, Zeviani M, Viscomi C, Musi N, Van Remmen H. *Improved insulin sensitivity associated with reduced mitochondrial complex IV assembly and activity*. FASEB J. 2013 Apr;27(4):1371-80. doi: 10.1096/fj.12-221879. Epub 2012 Dec 14. PubMed PMID: 23241310.
https://www.ncbi.nlm.nih.gov/pubmed/23241310

Sweet IR, Gilbert M, Jensen R, Sabek O, Fraga DW, Gaber AO, Reems J. *Glucose stimulation of cytochrome C reduction and oxygen consumption as assessment of human islet quality. Transplantation*. 2005 Oct 27;80(8):1003-11. PubMed PMID: 16278578.
https://www.ncbi.nlm.nih.gov/pubmed/16278578

Wu H, Xu G, Liao Y, Ren H, Fan J, Sun Z, Zhang M. *Supplementation with antioxidants attenuates transient worsening of retinopathy in diabetes caused by acute intensive insulin therapy*. Graefes Arch Clin Exp Ophthalmol. 2012 Oct;250(10):1453-8. doi: 10.1007/s00417-012-2079-4. Epub 2012 Jun 14. PubMed PMID: 22695936. https://www.ncbi.nlm.nih.gov/pubmed/22695936

Li Y, Higashi Y, Itabe H, Song YH, Du J, Delafontaine P. *Insulin-like growth factor-1 receptor activation inhibits oxidized LDL-induced cytochrome C release and apoptosis via the phosphatidylinositol 3 kinase/Akt signaling pathway*. Arterioscler Thromb Vasc Biol. 2003 Dec;23(12):2178-84. Epub 2003 Oct 9. PubMed PMID: 14551153.
https://www.ncbi.nlm.nih.gov/pubmed/14551153

1.29 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND CYTOCHROME C1 (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and "*Cytochrome c1*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+CYTOCHROME+C1

Sort by: Most Recent - Search results = Item: 12

Among the results of the research **some significant scientific papers** have been chosen:

Alecu I, Othman A, Penno A, Saied EM, Arenz C, von Eckardstein A, Hornemann T. *Cytotoxic 1-deoxysphingolipids are metabolized by a cytochrome P450-dependent pathway*. J Lipid Res. 2017 Jan;58(1):60-71. doi: 10.1194/jlr.M072421. Epub 2016 Nov 21. PubMed PMID: 27872144; PubMed Central PMCID: PMC5234722.
https://www.ncbi.nlm.nih.gov/pubmed/27872144

Sugizaki T, Watanabe M, Horai Y, Kaneko-Iwasaki N, Arita E, Miyazaki T, Morimoto K, Honda A, Irie J, Itoh H. *The Niemann-Pick C1 like 1 (NPC1L1) inhibitor ezetimibe improves metabolic disease via decreased liver X receptor (LXR) activity in liver of obese male mice*. Endocrinology. 2014 Aug;155(8):2810-9. doi: 10.1210/en.2013-2143. Epub 2014 Apr 28. PubMed PMID: 24773344. https://www.ncbi.nlm.nih.gov/pubmed/24773344

Shertzer HG, Krishan M, Genter MB. *Dietary whey protein stimulates mitochondrial activity and decreases oxidative stress in mouse female brain*. Neurosci Lett. 2013 Aug 26;548:159-64. doi: 10.1016/j.neulet.2013.05.061. Epub 2013 Jun 6. PubMed PMID: 23748211; PubMed Central PMCID: PMC3749878. https://www.ncbi.nlm.nih.gov/pubmed/23748211

Sharma TS, Jacobson DL, Anderson L, Gerschenson M, Van Dyke RB, McFarland EJ, Miller TL; Pediatric HIV/AIDS Cohort Study (PHACS). *Short communication: The relationship between mitochondrial dysfunction and insulin resistance in HIV-infected children receiving antiretroviral therapy. AIDS Res Hum Retroviruses*. 2013 Sep;29(9):1211-7. PubMed PMID: 23742635; PubMed Central PMCID: PMC3749716.
https://www.ncbi.nlm.nih.gov/pubmed/23742635

M. H. Holmström, R. Z. Tom, M. Björnholm, P. M. Garcia-Roves and J. R. Zierath. *Effect of leptin treatment on mitochondrial function in obese leptin-deficient ob/ob mice*. Metabolism. 2013 Sep; 62(9): 1258-67. doi: 10.1016/j.metabol.2013.04.001. Epub 2013 May 8. PubMed PMID: 23664724. https://www.ncbi.nlm.nih.gov/pubmed/23664724

A. Gesing, M. M. Masternak, F. Wang, M. Karbownik-Lewinska and A. Bartke. *Deletion of growth hormone receptor gene but not visceral fat removal decreases expression of apoptosis-related genes in the kidney-potential mechanism of lifespan extension*. Age (Dordr). 2012 Apr; 34(2): 295-304. doi: 10.1007/s11357-011-9232-6. Epub 2011 Mar 23. PubMed PMID: 21431351; PubMed Central PMCID: PMC3312636. https://www.ncbi.nlm.nih.gov/pubmed/21431351

E. J. Wilson and W. C. McMurray. *Effects of hormones on the maintenance and mitochondrial functions of rat hepatocytes cultured in serum-free medium*. Can J Biochem Cell Biol., 1983 Jul; 61(7):636-43. PMID: 6354397.
https://www.ncbi.nlm.nih.gov/pubmed/6354397

Y. Ogawa, K. Matsumoto and S. Ofuji. *Changes in adenine nucleotide and mitochondrial metabolism of the kidney of burned rats and their relation to insulin.* J Lab Clin Med. 1977 Sep; 90(3): 457-65. PMID: 894101. https://www.ncbi.nlm.nih.gov/m/pubmed/894101/

1.30 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND THE ALTERNATIVE DENOMINATIONS OF THE CYTOCHROME C1 (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link**s redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best or most recent* correspondences between the term "*Insulin*" and the alternative denominations of ***"Cytochrome c1"***: "*Cytochrome c-1*", "*Complex III Subunit IV*" and "*Complex III Subunit 4*" (**Please note:** the articles already mentioned will not be mentioned again).

Among the results of the research **some significant scientific papers** have been chosen:

1) Cytochrome c-1:

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+CYTOCHROME+C-1

Sort by: Best Match - Search results = Item: 13

Anastasio N, Tarailo-Graovac M, Al-Khalifah R, Legault L, Drogemoller B, Ross CJ, Wasserman WW, van Karnebeek C, Buhas D. *Mitochondrial Complex III Deficiency with Ketoacidosis and Hyperglycemia Mimicking Neonatal Diabetes.* JIMD Rep. 2017;31:57-62. doi: 10.1007/8904_2016_557. Epub 2016 Apr 14. PubMed PMID: 27074787; PubMed Central PMCID: PMC5388639. https://www.ncbi.nlm.nih.gov/pubmed/27074787

2) Complex III Subunit IV:

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+COMPLEX+III+SUBUNIT+IV

Sort by: Most Recent - Search results = Item: 18

Rowley TJ 4th, Bitner BF, Ray JD, Lathen DR, Smithson AT, Dallon BW, Plowman CJ, Bikman BT, Hansen JM, Dorenkott MR, Goodrich KM, Ye L, O'Keefe SF, Neilson AP, Tessem JS. *Monomeric cocoa catechins enhance β-cell function by increasing mitochondrial respiration*. J Nutr Biochem. 2017 Nov;49:30-41. doi: 10.1016/j.jnutbio.2017.07.015. Epub 2017 Jul 27. PubMed PMID: 28863367. https://www.ncbi.nlm.nih.gov/pubmed/28863367

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3) Complex III Subunit 4:

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+COMPLEX+III+SUBUNIT+4

Sort by: Most Recent - Search results = Item: 18

Shelley P, Martin-Gronert MS, Rowlerson A, Poston L, Heales SJ, Hargreaves IP, McConnell JM, Ozanne SE, Fernandez-Twinn DS. *Altered skeletal muscle insulin signaling and mitochondrial complex II-III linked activity in adult offspring of obese mice*. Am J Physiol Regul Integr Comp Physiol. 2009 Sep; 297(3) :R675-81. doi: 10.1152/ajpregu.00146.2009. Epub 2009 Jun 17. PubMed PMID: 19535678; PubMed Central PMCID: PMC2739782.

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4) Complex III Subunit 4:

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+COMPLEX+III+SUBUNIT+4

Sort by: Best Match - Search results = Item: 12

Balhara B, Burkart A, Topcu V, Lee YK, Cowan C, Kahn CR, Patti ME. *Severe insulin resistance alters metabolism in mesenchymal progenitor cells*. Endocrinology. 2015 Jun;156(6):2039-48. doi: 10.1210/en.2014-1403. Epub 2015 Mar 26. PubMed PMID: 25811318; PubMed Central PMCID: PMC4430624. https://www.ncbi.nlm.nih.gov/pubmed/25811318

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1.31 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link**s redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*" and "*Cytochrome c*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 726

Among the results of the research **some significant scientific papers** have been chosen:

Jo J, Cortez KL, Cornell WC, Price-Whelan A, Dietrich LE. *An orphan cbb(3)-type cytochrome oxidase subunit supports Pseudomonas aeruginosa biofilm growth and virulence*. Elife. 2017 Nov 21;6. pii: e30205. doi: 10.7554/eLife.30205. PubMed PMID: 29160206.
https://www.ncbi.nlm.nih.gov/pubmed/29160206

Calero P, Jensen SI, Bojanovič K, Lennen RM, Koza A, Nielsen AT. *Genome-wide identification of tolerance mechanisms toward p-coumaric acid in Pseudomonas putida*. Biotechnol Bioeng. 2017 Nov 13. doi: 10.1002/bit.26495. [Epub ahead of print] PubMed PMID: 29131301.
https://www.ncbi.nlm.nih.gov/pubmed/29131301

Albada B, Metzler-Nolte N. *Highly Potent Antibacterial Organometallic Peptide Conjugates*. Acc Chem Res. 2017 Oct 17; 50(10): 2510-2518. doi: 10.1021/acs.accounts.7b00282. Epub 2017 Sep 27. PubMed PMID: 28953347. https://www.ncbi.nlm.nih.gov/pubmed/28953347

Jiang T, Guo X, Yan J, Zhang Y, Wang Y, Zhang M, Sheng B, Ma C, Xu P, Gao C. *A Bacterial Multidomain NAD-Independent d-Lactate Dehydrogenase Utilizes Flavin Adenine Dinucleotide and Fe-S Clusters as Cofactors and Quinone as an Electron Acceptor for d-Lactate Oxidization*. J Bacteriol. 2017 Oct 17;199(22). pii: e00342-17. doi: 10.1128/JB.00342-17. Print 2017 Nov 15. PubMed PMID: 28847921; PubMed Central PMCID: PMC5648861**.**
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Osamura T, Kawakami T, Kido R, Ishii M, Arai H. *Specific expression and function of the A-type cytochrome c oxidase under starvation conditions in Pseudomonas aeruginosa*. PLoS One. 2017 May 18;12(5):e0177957. doi: 10.1371/journal.pone.0177957. eCollection 2017. PubMed PMID: 28542449; PubMed Central PMCID: PMC5436846.
https://www.ncbi.nlm.nih.gov/pubmed/28542449

Baldissera MD, Souza CF, Grings M, Parmeggiani BS, Leipnitz G, Moreira KLS, da Rocha MIUM, da Veiga ML, Santos RCV, Stefani LM, Baldisserotto B. *Inhibition of the mitochondrial respiratory chain in gills of Rhamdia quelen experimentally infected by Pseudomonas aeruginosa: Interplay with reactive oxygen species*. Microb Pathog. 2017 Jun;107:349-353. doi: 10.1016/j.micpath.2017.04.017. Epub 2017 Apr 13. PubMed PMID: 28414167. https://www.ncbi.nlm.nih.gov/pubmed/28414167

Carvalheda CA, Pisliakov AV. *Insights into proton translocation in cbb(3) oxidase from MD simulations. Biochim Biophys Acta*. 2017 May; 1858(5): 396-406. doi: 10.1016/j.bbabio.2017.02.013. Epub 2017 Mar 1. PubMed PMID: 28259641. https://www.ncbi.nlm.nih.gov/pubmed/28259641

Kohlstaedt M, Buschmann S, Langer JD, Xie H, Michel H. *Subunit CcoQ is nvolved in the assembly of the Cbb(3)-type cytochrome c oxidases from pseudomonas stutzeri ZoBell but not required for their activity*. Biochim Biophys cta. 2017 Mar;1858(3):231-238. doi: 10.1016/j.bbabio.2016.12.006. Epub 2016 Dec 20. PubMed PMID: 28007379. https://www.ncbi.nlm.nih.gov/pubmed/28007379

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Melin F, Xie H, Meyer T, Ahn YO, Gennis RB, Michel H, Hellwig P. *The unusual redox properties of C-type oxidases*. Biochim Biophys Acta. 2016 Dec;1857(12):1892-1899. doi: 10.1016/j.bbabio.2016.09.009. Epub 2016 Sep 21. PubMed PMID: 27664317. https://www.ncbi.nlm.nih.gov/pubmed/27664317

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Hazan R, Que YA, Maura D, Strobel B, Majcherczyk PA, Hopper LR, Wilbur DJ, Hreha TN, Barquera B, Rahme LG. *Auto Poisoning of the Respiratory Chain by a Quorum-Sensing-Regulated Molecule Favors Biofilm Formation and Antibiotic Tolerance*. Curr Biol. 2016 Jan 25;26(2):195-206. doi: 10.1016/j.cub.2015.11.056. Epub 2016 Jan 14. PubMed PMID: 26776731; PubMed Central PMCID: PMC4729643. https://www.ncbi.nlm.nih.gov/pubmed/26776731

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Veena VK, Popavath RN, Kennedy K, Sakthivel N. *In vitro antiproliferative, pro-apoptotic, antimetastatic and anti-inflammatory potential of 2,4-diacetylphloroglucinol (DAPG) by Pseudomonas aeruginosa strain FP10*. Apoptosis. 2015 Oct;20(10):1281-95. doi: 10.1007/s10495-015-1162-9. PubMed PMID: 26283170. https://www.ncbi.nlm.nih.gov/pubmed/26283170

Matsuno T, Yumoto I. *Bioenergetics and the role of soluble cytochromes C for alkaline adaptation in gram-negative alkaliphilic Pseudomonas*. Biomed Res Int. 2015;2015:847945. doi: 10.1155/2015/847945. Epub 2015 Feb 2. Review. PubMed PMID: 25705691; PubMed Central PMCID: PMC4332470. https://www.ncbi.nlm.nih.gov/pubmed/25705691

Managò A, Becker KA, Carpinteiro A, Wilker B, Soddemann M, Seitz AP, Edwards MJ, Grassmé H, Szabò I, Gulbins E. *Pseudomonas aeruginosa pyocyanin induces neutrophil death via mitochondrial reactive oxygen species and mitochondrial acid sphingomyelinase*. Antioxid Redox Signal. 2015 May 1;22(13):1097-110. doi: 10.1089/ars.2014.5979. Epub 2015 Mar 18. PubMed PMID: 25686490; PubMed Central PMCID: PMC4403017.
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Hamada M, Toyofuku M, Miyano T, Nomura N. *cbb3-type cytochrome c oxidases, aerobic respiratory enzymes, impact the anaerobic life of Pseudomonas aeruginosa PAO1*. J Bacteriol. 2014 Nov;196(22):3881-9. doi: 10.1128/JB.01978-14. Epub 2014 Sep 2. PubMed PMID: 25182494; PubMed Central PMCID: PMC4248832.
https://www.ncbi.nlm.nih.gov/pubmed/25182494

1.32 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS AND CYTOCHROME C (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+CYTOCHROME+C

Sort by: Best Match - Search results = Item: 634

Among the results of the research **some significant scientific papers** have been chosen:

Schwarzer C, Fu Z, Shuai S, Babbar S, Zhao G, Li C, Machen TE. *Pseudomonas aeruginosa homoserine lactone triggers apoptosis and Bak/Bax-independent release of mitochondrial cytochrome C in fibroblasts*. Cell Microbiol. 2014 Jul;16(7):1094-104. doi: 10.1111/cmi.12263. Epub 2014 Feb 13. PubMed PMID: 24438098; PubMed Central PMCID: PMC4065231. https://www.ncbi.nlm.nih.gov/pubmed/24438098

Sun Y, Benabbas A, Zeng W, Kleingardner JG, Bren KL, Champion PM. *Investigations of heme distortion, low-frequency vibrational excitations, and electron transfer in cytochrome c*. Proc Natl Acad Sci U S A. 2014 May 6;111(18):6570-5. doi: 10.1073/pnas.1322274111. Epub 2014 Apr 21. PubMed PMID: 24753591; PubMed Central PMCID: PMC4020103. https://www.ncbi.nlm.nih.gov/pubmed/24753591

Xie H, Buschmann S, Langer JD, Ludwig B, Michel H. *Biochemical and biophysical characterization of the two isoforms of cbb3-type cytochrome c oxidase from Pseudomonas stutzeri*. J Bacteriol. 2014 Jan;196(2):472-82. doi: 10.1128/JB.01072-13. Epub 2013 Nov 8. PubMed PMID: 24214947; PubMed Central PMCID: PMC3911263. https://www.ncbi.nlm.nih.gov/pubmed/24214947

Buschmann S, Richers S, Ermler U, Michel H. *A decade of crystallization drops: crystallization of the cbb3 cytochrome c oxidase from Pseudomonas stutzeri*. Protein Sci. 2014 Apr;23(4):411-22. doi: 10.1002/pro.2423. Epub 2014 Feb 4. PubMed PMID: 24488923; PubMed Central PMCID: PMC3970892. https://www.ncbi.nlm.nih.gov/pubmed/24488923

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Matsuno T, Yoshimune K, Yumoto I. *Physiological function of soluble cytochrome c-552 from alkaliphilic Pseudomonas alcaliphila AL15-21(T). J Bioenerg Biomembr*. 2011 Oct;43(5):473-81. doi: 10.1007/s10863-011-9376-1. Epub 2011 Jul 16. PubMed PMID: 21766198. https://www.ncbi.nlm.nih.gov/pubmed/21766198

Matsuno T, Mie Y, Yoshimune K, Yumoto I. *Physiological role and redox properties of a small cytochrome c(5), cytochrome c-552, from alkaliphile, Pseudomonas alcaliphila AL15-21(T)*. J Biosci Bioeng. 2009 Dec;108(6):465-70. doi: 10.1016/j.jbiosc.2009.06.008. Epub 2009 Jul 14. PubMed PMID: 19914577. https://www.ncbi.nlm.nih.gov/pubmed/19914577

Liu X, Tremblay PL, Malvankar NS, Nevin KP, Lovley DR, Vargas M. *A Geobacter sulfurreducens strain expressing pseudomonas aeruginosa type IV pili localizes OmcS on pili but is deficient in Fe(III) oxide reduction and current production*. Appl Environ Microbiol. 2014 Feb;80(3):1219-24. doi: 10.1128/AEM.02938-13. Epub2013 Dec 2. PubMed PMID: 24296506; PubMed Central PMCID: PMC3911229. https://www.ncbi.nlm.nih.gov/pubmed/24296506

Nazmutdinov RR, Bronshtein MD, Zinkicheva TT, Chi Q, Zhang J, Ulstrup J. *Modeling and computations of the intramolecular electron transfer process in the two-heme protein cytochrome c(4)*. Phys Chem Chem Phys. 2012 May 7;14(17):5953-65. doi: 10.1039/c2cp24084j. Epub 2012 Mar 23. PubMed PMID: 22430606. https://www.ncbi.nlm.nih.gov/pubmed/22430606

Can M, Zoppellaro G, Andersson KK, Bren KL. *Modulation of ligand-field parameters by heme ruffling in cytochromes c revealed by EPR spectroscopy*. Inorg Chem. 2011 Dec 5;50(23):12018-24. doi: 10.1021/ic201479q. Epub 2011 Nov 1. PubMed PMID: 22044358; PubMed Central PMCID: PMC3258502. https://www.ncbi.nlm.nih.gov/pubmed/22044358

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Paes de Sousa PM, Rodrigues D, Timóteo CG, Simões Gonçalves ML, Pettigrew GW, Moura I, Moura JJ, Correia dos Santos MM. *Analysis of the activation mechanism of Pseudomonas stutzeri cytochrome c peroxidase through an electron transfer chain*. J Biol Inorg Chem. 2011 Aug;16(6):881-8. doi: 10.1007/s00775-011-0785-8. Epub 2011 May 6. PubMed PMID: 21547574. https://www.ncbi.nlm.nih.gov/pubmed/21547574

Di Matteo A, Calosci N, Gianni S, Jemth P, Brunori M, Travaglini-Allocatelli C. *Structural and functional characterization of CcmG from Pseudomonas aeruginosa, a key component of the bacterial cytochrome c maturation apparatus*. Proteins. 2010 Aug 1;78(10):2213-21. doi: 10.1002/prot.22733. PubMed PMID: 20544959. https://www.ncbi.nlm.nih.gov/pubmed/20544959

Kleingardner JG, Bowman SE, Bren KL. *The influence of heme ruffling on spin densities in ferricytochromes c probed by heme core 13C NMR*. Inorg Chem. 2013 Nov 18;52(22):12933-46. doi: 10.1021/ic401250d. Epub 2013 Nov 4. PubMed PMID: 24187968; PubMed Central PMCID: PMC3873139. https://www.ncbi.nlm.nih.gov/pubmed/24187968

Baert B, Baysse C, Matthijs S, Cornelis P. *Multiple phenotypic alterations caused by a c-type cytochrome maturation ccmC gene mutation in Pseudomonas aeruginosa. Microbiology*. 2008 Jan;154(Pt 1):127-38. doi: 10.1099/mic.0.2007/008268-0. PubMed PMID: 18174132. https://www.ncbi.nlm.nih.gov/pubmed/18174132

Baysse C, Matthijs S, Schobert M, Layer G, Jahn D, Cornelis P. *Co-ordination of iron acquisition, iron porphyrin chelation and iron-protoporphyrin export via the cytochrome c biogenesis protein CcmC in Pseudomonas fluorescens*. Microbiology. 2003 Dec;149(Pt 12):3543-52. PubMed PMID: 14663086. https://www.ncbi.nlm.nih.gov/pubmed/14663086

Matsushita K, Shinagawa E, Adachi O, Ameyama M. *Membrane-bound cytochromes c of Pseudomonas aeruginosa grown aerobically. Purification and characterization of cytochromes c-551 and c-555*. J Biochem. 1982 Nov;92(5):1607-13. PubMed PMID: 6296063. https://www.ncbi.nlm.nih.gov/pubmed/6296063

Almassy RJ, Dickerson RE. *Pseudomonas cytochrome c551 at 2.0 A resolution: enlargement of the cytochrome c family*. Proc Natl Acad Sci U S A. 1978 Jun;75(6):2674-8. PubMed PMID: 96440; PubMed Central PMCID: PMC392625. https://www.ncbi.nlm.nih.gov/pubmed/96440

Ambler RP. *The evolutionary stability of cytochrome c-551 in Pseudomonas aeruginosa and Pseudomonas fluorescens biotype C*. Biochem J. 1974 Jan;137(1):3-14. PubMed PMID: 4362497; PubMed Central PMCID: PMC1166074. https://www.ncbi.nlm.nih.gov/pubmed/4362497

Needleman SB, Blair TT. *Homology of Pseudomonas cytochrome c-551 with eukaryotic c-cytochromes*. Proc Natl Acad Sci U S A. 1969 Aug;63(4):1227-33. PubMed PMID: 5260924; PubMed Central PMCID: PMC223454. https://www.ncbi.nlm.nih.gov/pubmed/5260924

1.33 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS AND CYTOCHROME C1 (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*" and "*Cytochrome c1*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+CYTOCHROME+C1

Sort by: Most Recent - Search results = Items: 18

Among the results of the research **some significant scientific papers** have been chosen:

García I, Rosas T, Bejarano ER, Gotor C, Romero LC. *Transient transcriptional regulation of the CYS-C1 gene and cyanide accumulation upon pathogen infection in the plant immune response*. Plant Physiol. 2013 Aug;162(4):2015-27. doi: 10.1104/pp.113.219436. Epub 2013 Jun 19. PubMed PMID: 23784464; PubMed Central PMCID: PMC3729779.
https://www.ncbi.nlm.nih.gov/pubmed/23784464

Wazawa T, Miyazaki T, Sambongi Y, Suzuki M. *Hydration analysis of Pseudomonas aeruginosa cytochrome c551 upon acid unfolding by dielectric relaxation spectroscopy*. Biophys Chem. 2010 Oct;151(3):160-9. doi: 10.1016/j.bpc.2010.06.008. Epub 2010 Jun 30. PubMed PMID: 20630646. https://www.ncbi.nlm.nih.gov/pubmed/20630646

Zoppellaro G, Harbitz E, Kaur R, Ensign AA, Bren KL, Andersson KK. *Modulation of the ligand-field anisotropy in a series of ferric low-spin cytochrome c mutants derived from Pseudomonas aeruginosa cytochrome c-551 and Nitrosomonas europaea cytochrome c-552: a nuclear magnetic resonance and electron paramagnetic resonance study***.** J Am Chem Soc. 2008 Nov 19;130(46):15348-60. doi: 10.1021/ja8033312. Epub 2008 Oct 24. PubMed PMID: 18947229; PubMed Central PMCID: PMC2664661. https://www.ncbi.nlm.nih.gov/pubmed/18947229

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Matsushita K, Yamada M, Shinagawa E, Adachi O, Ameyama M. *Membrane-bound respiratory chain of Pseudomonas aeruginosa grown aerobically*. J Bacteriol. 1980 Jan;141(1):389-92. PubMed PMID: 6766443; PubMed Central PMCID: PMC293608.
https://www.ncbi.nlm.nih.gov/pubmed/6766443

Netrusov AI, Anthony C. *The microbial metabolism of C1 compounds. Oxidative phosphorylation in membrane preparations of Pseudomonas AM1*. Biochem J. 1979 Feb 15;178(2):353-60. PubMed PMID: 220960; PubMed Central PMCID: PMC1186522.
https://www.ncbi.nlm.nih.gov/pubmed/220960

Ben-Bassat A, Goldberg I. *Oxidation of C1-compounds in Pseudomonas C*. Biochim Biophys Acta. 1977 Apr 27;497(2):586-97. PubMed PMID: 192317. https://www.ncbi.nlm.nih.gov/pubmed/192317

Netrusov AI, Rodionov YV, Kondratieva EN. *ATP-generation coupled with C1-compound oxidation by methylotrophic bacterium Pseudomonas sp.2*. FEBS Lett. 1977 Apr 1;76(1):56-8. PubMed PMID: 192596. https://www.ncbi.nlm.nih.gov/pubmed/192596

Taylor IJ, Anthony C. *A biochemical basis for obligate methylotrophy: properties of a mutant of Pseudomonas AM1 lacking 2-oxoglutarate dehydrogenase*. J Gen Microbiol. 1976 Apr;93(2):259-65. PubMed PMID: 932679.https://www.ncbi.nlm.nih.gov/pubmed/932679

Widdowson D, Anthony C. *The microbial metabolism of C1 compounds. The electron-transport chain of Pseudomonas am1*. Biochem J. 1975 Nov;152(2):349-56. PubMed PMID: 1220689; PubMed Central PMCID: PMC1172477. https://www.ncbi.nlm.nih.gov/pubmed/1220689

Wilson MT, Greenwood C, Brunori M, Antonini E. *Electron transfer between azurin and cytochrone c-551 from Pseudomonas aeruginosa*. Biochem J. 1975 Mar;145(3):449-57. PubMed PMID: 168867; PubMed Central PMCID: PMC1165244. https://www.ncbi.nlm.nih.gov/pubmed/168867

Anthony C. *The microbial metabolism of C1 compounds. The cytochromes of Pseudomaonas AM1*. Biochem J. 1975 Feb;146(2):289-98. PubMed PMID: 239691; PubMed Central PMCID: PMC1165305. https://www.ncbi.nlm.nih.gov/pubmed/239691

Anthony C. *Cytochrome c and the oxidation of C1 compounds in Pseudomonas AM1*. Biochem J. 1970 Oct;119(5):54P-55P. PubMed PMID: 5492832; PubMed Central PMCID: PMC1179533. https://www.ncbi.nlm.nih.gov/pubmed/5492832

1.34 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS AND CYTOCHROME C1 (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*" and "*Cytochrome c1*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+CYTOCHROME+C1

Sort by: Best Match - Search results = Item: 20

Among the results of the research **some significant scientific papers** have been chosen:

Yamaguchi M, Fujisawa H. *Reconstitution of iron-sulfur cluster of NADH-cytochrome c reductase, a component of benzoate 1,2-dioxygenase system from Pseudomonas arvilla C-1*. J Biol Chem. 1981 Jul 10;256(13):6783-7. PubMed PMID: 7240244.
https://www.ncbi.nlm.nih.gov/pubmed/7240244

Yamaguchi M, Fujisawa H. *Purification and characterization of an oxygenase component in benzoate 1,2-dioxygenase system from Pseudomonas arvilla C-1*. J BiolChem. 1980 Jun 10;255(11):5058-63. PubMed PMID: 7372624. https://www.ncbi.nlm.nih.gov/pubmed/7372624

Yamaguchi M, Fujisawa H. *Characterization of NADH-cytochrome c reductase, a component of benzoate 1,2-dioxygenase system from Pseudomonas arvilla c-1*. J Biol Chem. 1978 Dec 25;253(24):8848-53. PubMed PMID: 214433. https://www.ncbi.nlm.nih.gov/pubmed/214433

1. 35 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*" and "*Cytochrome c*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 13

Among the results of the research **some significant scientific papers** have been chosen:

Jones-Carson J, Zweifel AE, Tapscott T, Austin C, Brown JM, Jones KL, Voskuil MI, Vázquez-Torres A. *Nitric oxide from IFNγ-primed macrophages modulates the antimicrobial activity of β-lactams against the intracellular pathogens Burkholderia pseudomallei and Nontyphoidal Salmonella*. PLoS Negl Trop Dis. 2014 Aug 14;8(8):e3079. doi: 10.1371/journal.pntd.0003079. eCollection 2014 Aug. PubMed PMID: 25121731; PubMed Central PMCID: PMC4133387. https://www.ncbi.nlm.nih.gov/pubmed/25121731

Wagley S, Hemsley C, Thomas R, Moule MG, Vanaporn M, Andreae C, Robinson M, Goldman S, Wren BW, Butler CS, Titball RW. *The twin arginine translocation system is essential for aerobic growth and full virulence of Burkholderia thailandensis*. J Bacteriol. 2014 Jan;196(2):407-16. doi: 10.1128/JB.01046-13. Epub 2013 Nov 8. PubMed PMID: 24214943; PubMed Central PMCID: PMC3911251. https://www.ncbi.nlm.nih.gov/pubmed/24214943

Okuda K, Hasui K, Abe M, Matsumoto K, Shindo M. *Molecular design, synthesis, and evaluation of novel potent apoptosis inhibitors inspired from bongkrekic acid*. Chem Res Toxicol. 2012 Oct 15;25(10):2253-60. doi: 10.1021/tx300315h. Epub 2012 Oct 4. PubMed PMID: 22998163. https://www.ncbi.nlm.nih.gov/pubmed/22998163

Kakehi N, Yamazaki T, Tsugawa W, Sode K. *A novel wireless glucose sensor employing direct electron transfer principle based enzyme fuel cell. Biosens Bioelectron*. 2007 Apr 15;22(9-10):2250-5. Epub 2006 Dec 12. PubMed PMID: 17166711.
https://www.ncbi.nlm.nih.gov/pubmed/17166711

Tsuya T, Ferri S, Fujikawa M, Yamaoka H, Sode K. *Cloning and functional expression of glucose dehydrogenase complex of Burkholderia cepacia in Escherichia coli*. J Biotechnol. 2006 May 17;123(2):127-36. Epub 2005 Dec 6. PubMed PMID: 16337300**.**
https://www.ncbi.nlm.nih.gov/pubmed/16337300

Punj V, Sharma R, Zaborina O, Chakrabarty AM. *Energy-generating enzymes of Burkholderia cepacia and their interactions with macrophages*. J Bacteriol. 2003 May;185(10):3167-78. PubMed PMID: 12730177; PubMed Central PMCID: PMC154058.
https://www.ncbi.nlm.nih.gov/pubmed/12730177

1. 36 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA AND CYTOCHROME C1

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+CYTOCHROME+C1

Search results = Items: 1

Kang MJ, Lee MH, Shim JK, Seo ST, Shrestha R, Cho MS, Hahn JH, Park DS. *PCR-based specific detection of Ralstonia solanacearum by amplification of cytochrome c1 signal peptide sequences*. J Microbiol Biotechnol. 2007 Nov;17(11):1765-71. PubMed PMID: 18092459. https://www.ncbi.nlm.nih.gov/pubmed/18092459

1.37 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND TRANSPORTER (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Transporter*.

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+TRANSPORTER

Sort by: Most Recent - Search results = Items: 76

Among the results of the research **some significant scientific papers** have been chosen:

Stechemesser L, Eder SK, Wagner A, Patsch W, Feldman A, Strasser M, Auer S, Niederseer D, Huber-Schönauer U, Paulweber B, Zandanell S, Ruhaltinger S, Weghuber D, Haschke-Becher E, Grabmer C, Rohde E, Datz C, Felder TK, Aigner E. *Metabolomic profiling identifies potential pathways involved in the interaction of iron homeostasis with glucose metabolism*. Mol Metab. 2016 Oct 31;6(1):38-47. doi: 10.1016/j.molmet.2016.10.006. eCollection 2017 Jan. PubMed PMID: 28123936; PubMed Central PMCID: PMC5220278.
https://www.ncbi.nlm.nih.gov/pubmed/28123936

Coffey R, Knutson MD. The *plasma membrane metal-ion transporter ZIP14 contributes to nontransferrin-bound iron uptake by human β-cells*. Am J Physiol Cell Physiol. 2017 Feb 1;312(2):C169-C175. doi: 10.1152/ajpcell.00116.2016. Epub 2016 Nov 30. PubMed PMID: 27903581; PubMed Central PMCID: PMC5336597.
https://www.ncbi.nlm.nih.gov/pubmed/27903581

Ntimbane T, Mailhot G, Spahis S, Rabasa-Lhoret R, Kleme ML, Melloul D, Brochiero E, Berthiaume Y, Levy E. *CFTR silencing in pancreatic β-cells reveals a functional impact on glucose-stimulated insulin secretion and oxidative stress response*. Am J Physiol Endocrinol Metab. 2016 Feb 1;310(3):E200-12. doi: 10.1152/ajpendo.00333.2015. Epub 2015 Dec 1. PubMed PMID: 26625901. https://www.ncbi.nlm.nih.gov/pubmed/26625901

Liu KL, Chen PY, Wang CM, Chen WY, Chen CW, Owaga E, Chang JS. *Dose-related effects of ferric citrate supplementation on endoplasmic reticular stress responses and insulin signalling pathways in streptozotocin-nicotinamide-induced diabetes*. Food Funct. 2016 Jan;7(1):194-201. doi: 10.1039/c5fo01252j. PubMed PMID: 26611621.
https://www.ncbi.nlm.nih.gov/pubmed/26611621

Mehdad A, Campos NA, Arruda SF, Siqueira EM. *Iron Deprivation May Enhance Insulin Receptor and Glut4 Transcription in Skeletal Muscle of Adult Rats*. J Nutr Health Aging. 2015 Oct;19(8):846-54. doi: 10.1007/s12603-015-0541-9. PubMed PMID: 26412289.
https://www.ncbi.nlm.nih.gov/pubmed/26412289

Lee HJ, Choi JS, Lee HJ, Kim WH, Park SI, Song J. ***Effect of excess iron on oxidative stress and gluconeogenesis through hepcidin during mitochondrial dysfunction***. J Nutr Biochem. 2015 Dec;26(12): 1414-23. doi: 10.1016/j.jnutbio.2015.07.008. Epub 2015 Jul 29. PubMed PMID: 26383538. https://www.ncbi.nlm.nih.gov/pubmed/26383538

Chirumbolo S, Rossi AP, Rizzatti V, Zoico E, Franceschetti G, Girelli D, Zamboni M. *Iron primes 3T3-L1 adipocytes to a TLR4-mediated inflammatory response. Nutrition*. 2015 Oct;31(10):1266-74. doi: 10.1016/j.nut.2015.04.007. Epub 2015 May 5. PubMed PMID: 26206271. https://www.ncbi.nlm.nih.gov/pubmed/26206271

Chen YC, Wu YT, Wei YH. *Depletion of mitoferrins leads to mitochondrial dysfunction and impairment of adipogenic differentiation in 3T3-L1 preadipocytes*. Free Radic Res. 2015;49(11):1285-95. doi: 10.3109/10715762.2015.1067695. Epub 2015 Aug 12. PubMed PMID: 26118715. https://www.ncbi.nlm.nih.gov/pubmed/26118715

Yu F, Hao S, Yang B, Zhao Y, Zhang R, Zhang W, Yang J, Chen J. *Insulin resistance due to dietary iron overload disrupts inner hair cell ribbon synapse plasticity in male mice*. Neurosci Lett. 2015 Jun 15;597:183-8. doi: 10.1016/j.neulet.2015.04.049. Epub 2015 May 5. PubMed PMID: 25956034. https://www.ncbi.nlm.nih.gov/pubmed/25956034

Stanley SA, Sauer J, Kane RS, Dordick JS, Friedman JM. *Remote regulation of glucose homeostasis in mice using genetically encoded nanoparticles*. Nat Med. 2015 Jan;21(1):92-98. doi: 10.1038/nm.3730. Epub 2014 Dec 15. Erratum in: Nat Med. 2015 May;21(5):537. PubMed PMID: 25501906; PubMed Central PMCID: PMC4894538.
https://www.ncbi.nlm.nih.gov/pubmed/25501906

Lortz S, Schröter S, Stückemann V, Mehmeti I, Lenzen S. *Influence of cytokines on Dmt1 iron transporter and ferritin expression in insulin-secreting cells*. J Mol Endocrinol. 2014 Jun;52(3):301-10. doi: 10.1530/JME-13-0261. PubMed PMID: 24850829.
https://www.ncbi.nlm.nih.gov/pubmed/24850829

Hansen JB, Moen IW, Mandrup-Poulsen T. *Iron: the hard player in diabetes pathophysiology*. Acta Physiol (Oxf). 2014 Apr;210(4):717-32. doi: 10.1111/apha.12256. Review. PubMed PMID: 24521359. https://www.ncbi.nlm.nih.gov/pubmed/24521359

Vecchi C, Montosi G, Garuti C, Corradini E, Sabelli M, Canali S, Pietrangelo A. *Gluconeogenic signals regulate iron homeostasis via hepcidin in mice. Gastroenterology*. 2014 Apr;146(4):1060-9. doi: 10.1053/j.gastro.2013.12.016. Epub 2013 Dec 17. PubMed PMID: 24361124; PubMed Central PMCID: PMC3989026.
https://www.ncbi.nlm.nih.gov/pubmed/24361124

Mechlovich D, Amit T, Bar-Am O, Mandel S, Youdim MB, Weinreb O. *The novel multi-target iron chelator, M30 modulates HIF-1α-related glycolytic genes and insulin signaling pathway in the frontal cortex of APP/PS1 Alzheimer's disease mice*. Curr Alzheimer Res. 2014 Feb;11(2):119-27. PubMed PMID: 24359498. https://www.ncbi.nlm.nih.gov/pubmed/24359498

Jia X, Kim J, Veuthey T, Lee CH, Wessling-Resnick M. *Glucose metabolism in the Belgrade rat, a model of iron-loading anemia*. Am J Physiol Gastrointest Liver Physiol. 2013 Jun 15;304(12):G1095-102. doi: 10.1152/ajpgi.00453.2012. Epub 2013 Apr 18. PubMed PMID: 23599042; PubMed Central PMCID: PMC3680718.
https://www.ncbi.nlm.nih.gov/pubmed/23599042

Markelic M, Velickovic K, Golic I, Klepal W, Otasevic V, Stancic A, Jankovic A, Vucetic M, Buzadzic B, Korac B, Korac A. *The origin of lipofuscin in brown adipocytes of hyperInsulinemic rats: the role of lipid peroxidation and iron*. Histol Histopathol. 2013 Apr;28(4):493-503. doi: 10.14670/HH-28.493. Epub 2013 Jan 18. PubMed PMID: 23335278.
https://www.ncbi.nlm.nih.gov/pubmed/23335278

Hansen JB, Tonnesen MF, Madsen AN, Hagedorn PH, Friberg J, Grunnet LG, Heller RS, Nielsen AØ, Størling J, Baeyens L, Anker-Kitai L, Qvortrup K, Bouwens L, Efrat S, Aalund M, Andrews NC, Billestrup N, Karlsen AE, Holst B, Pociot F, Mandrup-Poulsen T. *Divalent metal transporter 1 regulates iron-mediated ROS and pancreatic β cell fate in response to cytokines*. Cell Metab. 2012 Oct 3;16(4):449-61. doi: 10.1016/j.cmet.2012.09.001. Epub 2012 Sep 20. PubMed PMID: 23000401. https://www.ncbi.nlm.nih.gov/pubmed/23000401

Gabrielsen JS, Gao Y, Simcox JA, Huang J, Thorup D, Jones D, Cooksey RC, Gabrielsen D, Adams TD, Hunt SC, Hopkins PN, Cefalu WT, McClain DA. *Adipocyte iron regulates adiponectin and insulin sensitivity*. J Clin Invest. 2012 Oct;122(10):3529-40. doi: 10.1172/JCI44421. Epub 2012 Sep 10. PubMed PMID: 22996660; PubMed Central PMCID: PMC3461897. https://www.ncbi.nlm.nih.gov/pubmed/22996660

Kusminski CM, Holland WL, Sun K, Park J, Spurgin SB, Lin Y, Askew GR, Simcox JA, McClain DA, Li C, Scherer PE. *MitoNEET-driven alterations in adipocyte mitochondrial activity reveal a crucial adaptive process that preserves insulin sensitivity in obesity*. Nat Med. 2012 Oct;18(10):1539-49. doi: 10.1038/nm.2899. Epub 2012 Sep 9. PubMed PMID: 22961109; PubMed Central PMCID: PMC3745511. https://www.ncbi.nlm.nih.gov/pubmed/22961109

Le Blanc S, Villarroel P, Candia V, Gavilán N, Soto N, Pérez-Bravo F, Arredondo M. *Type 2 diabetic patients and their offspring show altered parameters of iron status, oxidative stress and genes related to mitochondrial activity*. Biometals. 2012 Aug;25(4):725-35. doi: 10.1007/s10534-012-9540-z. Epub 2012 Mar 27. PubMed PMID: 22450556.
https://www.ncbi.nlm.nih.gov/pubmed/22450556

Pollak Y, Mechlovich D, Amit T, Bar-Am O, Manov I, Mandel SA, Weinreb O, Meyron-Holtz EG, Iancu TC, Youdim MB. *Effects of novel neuroprotective and neurorestorative multifunctional drugs on iron chelation and glucose metabolism*. J Neural Transm (Vienna). 2013 Jan;120(1):37 48. doi: 10.1007/s00702-012-0795-x. Epub 2012 Mar 25. PubMed PMID: 22446839.
https://www.ncbi.nlm.nih.gov/pubmed/22446839

1.38 SCIENTIFIC PAPERS ABOUTTHE RELATIONSHIPS BETWEEN INSULIN, IRON AND TRANSPORTER (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*", "*Iron*" and "*Transporter*" (**Please note**: the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+TRANSPORTER

Sort by: Best Match - Search results = Item: 68

Among the results of the research **some significant scientific** papers have been chosen:

Dongiovanni P, Valenti L, Ludovica Fracanzani A, Gatti S, Cairo G, Fargion S. *Iron depletion by deferoxamine up-regulates glucose uptake and insulin signaling in hepatoma cells and in rat liver*. Am J Pathol. 2008 Mar;172(3):738-47. doi: 10.2353/ajpath.2008.070097. Epub 2008 Feb 2. PubMed PMID: 18245813; PubMed Central PMCID: PMC2258266. https://www.ncbi.nlm.nih.gov/pubmed/18245813

Datz C, Felder TK, Niederseer D, Aigner E. *Iron homeostasis in the metabolic syndrome*. Eur J Clin Invest. 2013 Feb;43(2):215-24. doi: 10.1111/eci.12032. Epub 2013 Jan 7. Review. PubMed PMID: 23289518. https://www.ncbi.nlm.nih.gov/pubmed/23289518

Aydemir TB, Chang SM, Guthrie GJ, Maki AB, Ryu MS, Karabiyik A, Cousins RJ.B *Zinc transporter ZIP14 functions in hepatic zinc, iron and glucose homeostasis during the innate immune response (endotoxemia).* PLoS One. 2012;7(10):e48679. doi: 10.1371/journal.pone.0048679. Epub 2012 Oct 24. PubMed PMID: 23110240; PubMed Central PMCID: PMC3480510. https://www.ncbi.nlm.nih.gov/pubmed/23110240

Yoshikawa O, Ebata Y, Tsuchiya H, Kawahara A, Kojima C, Ikeda Y, Hama S, Kogure K, Shudo K, Shiota G. *A retinoic acid receptor agonist tamibarotene suppresses iron accumulation in the liver*. Obesity (Silver Spring). 2013 Jan;21(1):E22-5. doi: 10.1002/oby.20013. PubMed PMID: 23404745. https://www.ncbi.nlm.nih.gov/pubmed/23404745

Stanley SA, Gagner JE, Damanpour S, Yoshida M, Dordick JS, Friedman JM. *Radio-wave heating of iron oxide nanoparticles can regulate plasma glucose in mice*. Science. 2012 May 4;336(6081):604-8. doi: 10.1126/science.1216753. PubMed PMID: 22556257; PubMed Central PMCID: PMC3646550. https://www.ncbi.nlm.nih.gov/pubmed/22556257

Masuda Y, Ichii H, Vaziri ND. *At pharmacologically relevant concentrations intravenous iron preparations cause pancreatic beta cell death*. Am J Transl Res. 2013 Dec 1;6(1):64-70. eCollection 2013. PubMed PMID: 24349622; PubMed Central PMCID: PMC3853425. https://www.ncbi.nlm.nih.gov/pubmed/24349622

Sil R, Ray D, Chakraborti AS. *Glycyrrhizin ameliorates insulin resistance, hyperglycemia, dyslipidemia and oxidative stress in fructose-induced metabolic syndrome-X in rat model*. Indian J Exp Biol. 2013 Feb;51(2):129-38. PubMed PMID: 23923606. https://www.ncbi.nlm.nih.gov/pubmed/23923606

Ong WY, Tanaka K, Dawe GS, Ittner LM, Farooqui AA. *Slow excitotoxicity in Alzheimer's disease*. J Alzheimers Dis. 2013;35(4):643-68. doi: 10.3233/JAD-121990. Review. PubMed PMID: 23481689. https://www.ncbi.nlm.nih.gov/pubmed/23481689

Han DH, Hancock CR, Jung SR, Higashida K, Kim SH, Holloszy JO. *Deficiency of the mitochondrial electron transport chain in muscle does not cause insulin resistance*. PLoS One. 2011 May 12;6(5):e19739. doi: 10.1371/journal.pone.0019739. PubMed PMID: 21589859; PubMed Central PMCID: PMC3093385. https://www.ncbi.nlm.nih.gov/pubmed/21589859

Ruivard M. [*Genetic iron overloads and hepatic insulin-resistance iron overload syndrome: an update*]. Rev Med Interne. 2009 Jan;30(1):35-42. doi: 10.1016/j.revmed.2008.05.004. Epub 2008 Jun 26. Review. French. PubMed PMID: 18584923. https://www.ncbi.nlm.nih.gov/pubmed/18584923

Davis RJ, Corvera S, Czech MP. *Insulin stimulates cellular iron uptake and causes the redistribution of intracellular transferrin receptors to the plasma membrane.* J Biol Chem. 1986 Jul 5;261(19):8708-11. PubMed PMID: 3013860. https://www.ncbi.nlm.nih.gov/pubmed/3013860

McCarty MF. *Hyperinsulinemia may boost both hematocrit and iron absorption by up-regulating activity of hypoxia-inducible factor-1alpha*. Med Hypotheses. 2003 Nov-Dec;61(5-6):567-73. PubMed PMID: 14592787. https://www.ncbi.nlm.nih.gov/pubmed/14592787

Lenzen S. *The mechanisms of alloxan- and streptozotocin-induced diabetes. Diabetologia*. 2008 Feb;51(2):216-26. Epub 2007 Dec 18. Review. PubMed PMID: 18087688. https://www.ncbi.nlm.nih.gov/pubmed/18087688

Fainberg HP, Sharkey D, Sebert S, Wilson V, Pope M, Budge H, Symonds ME. *Suboptimal maternal nutrition during early fetal kidney development specifically promotes renal lipid accumulation following juvenile obesity in the offspring*. Reprod Fertil Dev. 2013;25(5):728-36. doi: 10.1071/RD12037. PubMed PMID:22951182. https://www.ncbi.nlm.nih.gov/pubmed/22951182

Ward DT, Hamilton K, Burnand R, Smith CP, Tomlinson DR, Riccardi D. *Altered expression of iron transport proteins in streptozotocin-induced diabetic rat kidney*. Biochim Biophys Acta. 2005 Apr 15;1740(1):79-84. Epub 2005 Feb 23. PubMed PMID: 15878745. https://www.ncbi.nlm.nih.gov/pubmed/15878745

Cooksey RC, Jouihan HA, Ajioka RS, Hazel MW, Jones DL, Kushner JP, McClain DA. *Oxidative stress, beta-cell apoptosis, and decreased insulin secretory capacity in mouse models of hemochromatosis.* Endocrinology. 2004 Nov;145(11):5305-12. Epub 2004 Aug 12. PubMed PMID: 15308612.https://www.ncbi.nlm.nih.gov/pubmed/15308612

Shin SM, Kim SG. *Inhibition of arachidonic acid and iron-induced mitochondrial dysfunction and apoptosis by oltipraz and novel 1,2-dithiole-3-thione congeners*. Mol Pharmacol. 2009 Jan;75(1):242-53. doi:10.1124/mol.108.051128. Epub 2008 Oct 22. PubMed PMID: 18945820. https://www.ncbi.nlm.nih.gov/pubmed/18945820

Potashnik R, Kozlovsky N, Ben-Ezra S, Rudich A, Bashan N. *Regulation of glucose transport and GLUT-1 expression by iron chelators in muscle cells in culture*. Am J Physiol. 1995 Dec;269(6 Pt 1):E1052-8. PubMed PMID: 8572196.https://www.ncbi.nlm.nih.gov/pubmed/8572196

Tang S, Lu B, Fantus IG. *Stimulation of 125I-transferrin binding and 59Fe uptake in rat adipocytes by vanadate: treatment time determines apparent tissue sensitivity*. Metabolism. 1998 Jun;47(6):630-6. PubMed PMID: 9627358.https://www.ncbi.nlm.nih.gov/pubmed/9627358

Zhang Y, Tatsuno T, Carney JM, Mattson MP. *Basic FGF, NGF, and IGFs protect hippocampal and cortical neurons against iron-induced degeneration*. J Cereb Blood Flow Metab. 1993 May;13(3):378-88. PubMed PMID: 8478396. https://www.ncbi.nlm.nih.gov/pubmed/8478396

1.39 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND DIABETES (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Diabetes*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+DIABETES

Sort by: Most Recent - Search results = Items: 650

Among the results of the research **some significant scientific papers** have been chosen:

Shalitin S, Deutsch V, Tauman R. *Hepcidin, soluble transferrin receptor and IL-6 levels in obese children and adolescents with and without type 2 diabetes mellitus/impaired glucose tolerance and their association with obstructive sleep apnea*. J Endocrinol Invest. 2018 Jan 5. doi: 10.1007/s40618-017-0823-7. [Epubahead of print] PubMed PMID: 29305826. https://www.ncbi.nlm.nih.gov/pubmed/29305826

Ansari AM, Bhat KG, Dsa SS, Mahalingam S, Joseph N. *Study of Insulin Resistance in Patients With β Thalassemia Major and Validity of Triglyceride Glucose (TYG) Index*. J Pediatr Hematol Oncol. 2017 Dec 8. doi: 10.1097/MPH.0000000000001011. [Epub ahead of print] PubMed PMID: 29227325. https://www.ncbi.nlm.nih.gov/pubmed/29227325

Søgaard KL, Ellervik C, Svensson J, Thorsen SU. *The Role of Iron in Type 1 Diabetes Etiology: A Systematic Review of New Evidence on a Long-Standing Mystery*. Rev Diabet Stud. 2017 Summer-Fall;14(2-3):269-278. doi: 10.1900/RDS.2017.14.269. Epub 2017 Oct 10. PubMed PMID: 29145537. https://www.ncbi.nlm.nih.gov/pubmed/29145537

Ambachew S, Biadgo B. *Hepcidin in Iron Homeostasis: Diagnostic and Therapeutic Implications in Type 2 Diabetes Mellitus Patients*. Acta Haematol. 2017 Nov 15;138(4):183-193. doi: 10.1159/000481391. [Epub ahead of print] PubMed PMID: 29136618. https://www.ncbi.nlm.nih.gov/pubmed/29136618

Schindler C, Birkenfeld AL, Hanefeld M, Schatz U, Köhler C, Grüneberg M, Tschöpe D, Blüher M, Hasslacher C, Bornstein SR. *Intravenous Ferric Carboxymaltose in Patients with Type 2 Diabetes Mellitus and Iron Deficiency: CLEVER Trial Study Design and Protocol*. Diabetes Ther. 2017 Nov 13. doi: 10.1007/s13300-017-0330-z. [Epub ahead of print] PubMed PMID: 29134606. https://www.ncbi.nlm.nih.gov/pubmed/29134606

Misra G, Bhatter SK, Kumar A, Gupta V, Khan MY. *Iron Profile and Glycaemic Control in Patients with Type 2 Diabetes Mellitus*. Med Sci (Basel). 2016 Dec 9;4(4). pii: E22. doi: 10.3390/medsci4040022. PubMed PMID: 29083385; PubMed Central PMCID: PMC5635795. https://www.ncbi.nlm.nih.gov/pubmed/29083385

Vela D, Leshoski J, Gjorgievska ES, Hadzi-Petrushev N, Jakupaj M, Sopi RB, Mladenov M. *The Role of Insulin Therapy in Correcting Hepcidin Levels in Patients with Type 2 Diabetes Mellitus*. Oman Med J. 2017 May;32(3):195-200. doi: 10.5001/omj.2017.37. PubMed PMID: 28584599; PubMed Central PMCID: PMC5447797.
https://www.ncbi.nlm.nih.gov/pubmed/28584599

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https://www.ncbi.nlm.nih.gov/pubmed/28662967

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1.40 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND DIABETES (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*", "*Iron*" and "*Diabetes*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+DIABETES

Sort by: Best Match - Search results = Items: 585

Among the results of the research **some significant scientific papers** have been chosen:

Sen S, Ghatak SK, Majumdar D, Sen K, Bhattacharya B. *Free iron status & insulin resistance in type 2 diabetes mellitus: Analyzing the probable role of a peanut protein*. Indian J Med Res. 2015 Nov;142(5):606-9. doi: 10.4103/0971-5916.171291. PubMed PMID: 26658597; PubMed Central PMCID: PMC4743349. https://www.ncbi.nlm.nih.gov/pubmed/26658597

Huang J, Karnchanasorn R, Ou HY, Feng W, Chuang LM, Chiu KC, Samoa R. *Association of insulin resistance with serum ferritin and aminotransferases-iron hypothesis*. World J Exp Med. 2015 Nov 20;5(4):232-43. doi: 10.5493/wjem.v5.i4.232. eCollection 2015 Nov 20. PubMed PMID: 26618110; PubMed Central PMCID: PMC4655253.
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Zhuang T, Han H, Yang Z. *Iron, oxidative stress and gestational diabetes*. *Nutrients*. 2014 Sep 25;6(9):3968-80. doi: 10.3390/nu6093968. Review. PubMed PMID: 25255832; PubMed Central PMCID: PMC4179198. https://www.ncbi.nlm.nih.gov/pubmed/25255832

Araújo Sampaio F, Monte Feitosa M, Hermes Sales C, Costa e Silva DM, Clímaco Cruz KJ, Oliveira FE, Colli C, do Nascimento Marreiro D. *Influence of magnesium on biochemical parameters of iron and oxidative stress in patients with type 2 diabetes*. Nutr Hosp. 2014 Sep 1;30(3):570-6. doi: 10.3305/nh.2014.30.3.7333. PubMed PMID: 25238833. https://www.ncbi.nlm.nih.gov/pubmed/25238833

Blasco G, Puig J, Daunis-I-Estadella J, Molina X, Xifra G, Fernández-Aranda F, Pedraza S, Ricart W, Portero-Otín M, Fernández-Real JM. *Brain iron overload, insulin resistance, and cognitive performance in obese subjects: a preliminary MRI case-control study*. Diabetes Care. 2014 Nov;37(11):3076-83. doi: 10.2337/dc14-0664. Epub 2014 Aug 14. PubMed PMID: 25125507. https://www.ncbi.nlm.nih.gov/pubmed/25125507

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Li J, Wang R, Xiao C. *Association between chilli food habits with iron status and insulin resistance in a Chinese population*. J Med Food. 2014 Apr;17(4):472-8. doi: 10.1089/jmf.2013.2748. Epub 2014 Jan 30. PubMed PMID: 24479485; PubMed Central PMCID: PMC3993078. https://www.ncbi.nlm.nih.gov/pubmed/24479485

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Ye Y, Wang M, Chen K, Xie AL. [*Investigation of iron deficiency status in the newborns of gestational diabetes mellitus women*]. Zhonghua Fu Chan Ke Za Zhi. 2013 Jan;48(1):25-8. Chinese. PubMed PMID: 23531247. https://www.ncbi.nlm.nih.gov/pubmed/23531247

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Noetzli LJ, Mittelman SD, Watanabe RM, Coates TD, Wood JC. *Pancreatic iron and glucose dysregulation in thalassemia major*. Am J Hematol. 2012 Feb;87(2):155-60. doi: 10.1002/ajh.22223. Epub 2011 Nov 24. PubMed PMID: 22120775.
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Juanola-Falgarona M, Cándido-Fernández J, Salas-Salvadó J, Martínez-González MA, Estruch R, Fiol M, Arija-Val V; Mònica Bulló; PREDIMED Study Investigators. *Association between serum ferritin and osteocalcin as a potential mechanism explaining the iron-induced insulin resistance*. PLoS One. 2013 Oct 22;8(10):e76433. doi: 10.1371/journal.pone.0076433. eCollection 2013. PubMed PMID: 24167545; PubMed Central PMCID: PMC3805539.
https://www.ncbi.nlm.nih.gov/pubmed/24167545

1.41 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND OBESITY (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Obesity*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+OBESITY

Sort by: Most Recent - Search results = Items: 207

Among the results of the research **some significant scientific papers** have been chosen:

Stankowiak-Kulpa H, Kargulewicz A, Styszyński A, Swora-Cwynar E, Grzymisławski M. *Iron status in obese women*. Ann Agric Environ Med. 2017 Dec 23;24(4):587-591. doi: 10.5604/12321966.1232092. Epub 2017 May 11. PubMed PMID: 29284229.
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Ma X, Pham VT, Mori H, MacDougald OA, Shah YM, Bodary PF. *Iron elevation and adipose tissue remodeling in the epididymal depot of a mouse model of polygenic obesity*. PLoS One. 2017 Jun 26;12(6):e0179889. doi: 10.1371/journal.pone.0179889. eCollection 2017. PubMed PMID: 28651003; PubMed Central PMCID: PMC5484604.
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Gordon HM, Majithia N, MacDonald PE, Fox JEM, Sharma PR, Byrne FL, Hoehn KL, Evans-Molina C, Langman L, Brayman KL, Nunemaker CS. *STEAP4 expression in human islets is associated with differences in body mass index, sex, HbA1c, and inflammation*. Endocrine. 2017 Jun;56(3):528-537. doi: 10.1007/s12020-017-1297-2. Epub 2017 Apr 12. PubMed PMID: 28405880. https://www.ncbi.nlm.nih.gov/pubmed/28405880

Kanwar P, Nelson JE, Yates K, Kleiner DE, Unalp-Arida A, Kowdley KV. *Association between metabolic syndrome and liver histology among NAFLD patients without diabetes*. BMJ Open Gastroenterol. 2016 Nov 9;3(1):e000114. eCollection 2016. PubMed PMID: 27933201; PubMed Central PMCID: PMC5128831.https://www.ncbi.nlm.nih.gov/pubmed/27933201

Mayeur S, Veilleux A, Pouliot Y, Lamarche B, Beaulieu JF, Hould FS, Richard D, Tchernof A, Levy E. *Plasma Lactoferrin Levels Positively Correlate with Insulin Resistance despite an Inverse Association with Total Adiposity in Lean and Severely Obese Patients*. PLoS One. 2016 Nov 30;11(11):e0166138. doi: 10.1371/journal.pone.0166138. eCollection 2016. PubMed PMID: 27902700; PubMed Central PMCID: PMC5130198.
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González-Villalva A, Colín-Barenque L, Bizarro-Nevares P, Rojas-Lemus M, Rodríguez-Lara V, García-Pelaez I, Ustarroz-Cano M, López-Valdez N, Albarrán-Alonso JC, Fortoul TI. *Pollution by metals: Is there a relationship in glycemic control?* Environ Toxicol Pharmacol. 2016 Sep;46:337-343. doi: 10.1016/j.etap.2016.06.023. Epub 2016 Aug 10. Review. PubMed PMID: 27552445. https://www.ncbi.nlm.nih.gov/pubmed/27552445

Gotardo ÉM, Caria CR, de Oliveira CC, Rocha T, Ribeiro ML, Gambero A. *Effects of iron supplementation in mice with hypoferremia induced by obesity*. Exp Biol Med (Maywood). 2016 Dec;241(18):2049-2055. doi: 10.1177/1535370216660398. Epub 2016 Jul 24. PubMed PMID: 27439539; PubMed Central PMCID: PMC5102132.
https://www.ncbi.nlm.nih.gov/pubmed/27439539

Pelusi C, Gasparini DI, Bianchi N, Pasquali R. *Endocrine dysfunction in hereditary hemochromatosis*. J Endocrinol Invest. 2016 Aug;39(8):837-47. doi: 10.1007/s40618-016-0451-7. Epub 2016 Mar 7. Review. PubMed PMID: 26951056.
https://www.ncbi.nlm.nih.gov/pubmed/26951056

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https://www.ncbi.nlm.nih.gov/pubmed/26813526

Grgurevic L, Christensen GL, Schulz TJ, Vukicevic S. *Bone morphogenetic proteins in inflammation, glucose homeostasis and adipose tissue energy metabolism*. Cytokine Growth Factor Rev. 2016 Feb;27:105-18. doi: 10.1016/j.cytogfr.2015.12.009. Epub 2015 Dec 29. Review. PubMed PMID: 26762842. https://www.ncbi.nlm.nih.gov/pubmed/26762842

Yang JH, Chou CH, Yang WS, Ho HN, Yang YS, Chen MJ. *Iron stores and obesity are negatively associated with ovarian volume and anti-Müllerian hormone levels in women with polycystic ovary syndrome*. Taiwan J Obstet Gynecol. 2015 Dec;54(6):686-92. doi: 10.1016/j.tjog.2014.11.025. PubMed PMID: 26700986.
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Pihan-Le Bars F, Bonnet F, Loréal O, Le Loupp AG, Ropert M, Letessier E, Prieur X, Bach K, Deugnier Y, Fromenty B, Cariou B. *Indicators of iron status are correlated with adiponectin expression in adipose tissue of patients with morbid obesity*. Diabetes Metab. 2016 Apr;42(2):105-11. doi: 10.1016/j.diabet.2015.10.007. Epub 2015 Dec 8. PubMed PMID: 26677772.
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https://www.ncbi.nlm.nih.gov/pubmed/26474757

Ko PC, Huang SY, Hsieh CH, Hsu MI, Hsu CS. *Serum ferritin levels and polycystic ovary syndrome in obese and nonobese women*. Taiwan J Obstet Gynecol. 2015 Aug;54(4):403-7. doi: 10.1016/j.tjog.2014.06.005. PubMed PMID: 26384059.
https://www.ncbi.nlm.nih.gov/pubmed/26384059

1.42 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND OBESITY (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*", "*Iron*" and "*Obesity*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+OBESITY

Sort by: Best Match - Search results = Items: 189

Among the results of the research **some significant scientific papers** have been chosen:

Aigner E, Feldman A, Datz C. *Obesity as an emerging risk factor for iron deficiency*. Nutrients. 2014 Sep 11;6(9):3587-600. doi: 10.3390/nu6093587. Review. PubMed PMID: 25215659; PubMed Central PMCID: PMC4179177. https://www.ncbi.nlm.nih.gov/pubmed/25215659

Altunoğlu E, Müderrisoğlu C, Erdenen F, Ulgen E, Ar MC. *The impact of obesity and insulin resistance on iron and red blood cell parameters: a single center, cross-sectional study*. Turk J Haematol. 2014 Mar;31(1):61-7. doi: 10.4274/Tjh.2012.0187. Epub 2014 Mar 5. PubMed PMID: 24764731; PubMed Central PMCID: PMC3996629.
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Fernández-Real JM, Puig J, Serrano M, Sabater M, Rubió A, Moreno-Navarrete JM, Fontan M, Casamitjana R, Xifra G, Ortega FJ, Salvador J, Frühbeck G, Ricart W. *Iron and obesity status-associated insulin resistance influence circulating fibroblast-growth factor-23 concentrations*. PLoS One. 2013;8(3):e58961. doi: 10.1371/journal.pone.0058961. Epub 2013 Mar 21. PubMed PMID: 23555610; PubMed Central PMCID: PMC3605441.
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Suliburska J, Bogdański P, Szulińska M. *Iron excess disturbs metabolic status and relative gonad mass in rats on high fat, fructose, and salt diets*. Biol Trace Elem Res. 2013 Feb;151(2):263 8. doi: 10.1007/s12011-012-9548-9. Epub 2012 Nov 22. PubMed PMID: 23179349; PubMed Central PMCID: PMC3548103. https://www.ncbi.nlm.nih.gov/pubmed/23179349

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Lee HJ, Jang HB, Park JE, Park KH, Kang JH, Park SI, Song J. *Relationship between Serum Levels of Body Iron Parameters and Insulin Resistance and Metabolic Syndrome in Korean Children*. Osong Public Health Res Perspect. 2014 Aug;5(4):204-10. doi: 10.1016/j.phrp.2014.06.005. Epub 2014 Jul 1. PubMed PMID: 25379371; PubMed Central PMCID: PMC4214999. https://www.ncbi.nlm.nih.gov/pubmed/25379371

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1.43 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND INSULITE (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Insulite*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+INSULITIS

Sort by: Most Recent - Search results = Items: 4

Van den Driessche A, Eenkhoorn V, Van Gaal L, De Block C. *Type 1 diabetes and autoimmune polyglandular syndrome: a clinical review*. Neth J Med. 2009 Dec;67(11):376-87. Review. PubMed PMID: 20009114. https://www.ncbi.nlm.nih.gov/pubmed/20009114

Moore A, Sun PZ, Cory D, Högemann D, Weissleder R, Lipes MA. *MRI of insulitis in autoimmune diabetes*. Magn Reson Med. 2002 Apr;47(4):751-8. PubMed PMID: 11948737.
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Olejnicka BT, Andersson A, Tyrberg B, Dalen H, Brunk UT. *Beta-cells, oxidative stress, lysosomal stability, and apoptotic/necrotic cell death*. Antioxid Redox Signal. 1999 Fall;1(3):305-15. PubMed PMID: 11229442. https://www.ncbi.nlm.nih.gov/pubmed/11229442

Olejnicka BT, Dalen H, Brunk UT. *Minute oxidative stress is sufficient to induce apoptotic death of NIT-1 insulinoma cells*. APMIS. 1999 Aug;107(8):747-61. PubMed PMID: 10515125. https://www.ncbi.nlm.nih.gov/pubmed/10515125

1.44 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND CYSTIC FIBROSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Cystic Fibrosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+CYSTIC+FIBROSIS

Sort by: Most Recent - Search results = Items: 4

Kessler L, Abély M. [*Pancreatic infringement exocrine and endocrine in cystic fibrosis*]. Arch Pediatr. 2016 Dec;23(12S):12S21-12S32. doi: 10.1016/S0929-693X(17)30059-3. French. PubMed PMID: 28231890. https://www.ncbi.nlm.nih.gov/pubmed/28231890

Gifford AH, Nymon AB, Ashare A. *Serum insulin-like growth factor-1 (IGF-1) during CF pulmonary exacerbation: trends and biomarker correlations*. Pediatr Pulmonol. 2014 Apr;49(4):335-41. doi: 10.1002/ppul.22822. Epub 2013 Jun 18. PubMed PMID: 23775841; PubMed Central PMCID: PMC4709121. https://www.ncbi.nlm.nih.gov/pubmed/23775841

Aitken ML, Martinez S, McDonald GJ, Seifert CC, Burke W. *Sensation of smell does not determine nutritional status in patients with cystic fibrosis*. Pediatr Pulmonol. 1997 Jul;24(1):52-6. PubMed PMID: 9261854. https://www.ncbi.nlm.nih.gov/pubmed/9261854

1.45 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND PULMONARY INFECTIONS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Pulmonary Infections*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+PULMONARY+INFECTION

Sort by: Most Recent - Search results = Items: 4

Tomita T, Ho H, Allen M, Diaz J. *Zygomycosis involving lungs, heart and brain, superimposed on pulmonary edema*. Pathol Int. 2005 Apr;55(4):202-5. PubMed PMID:15826246. https://www.ncbi.nlm.nih.gov/pubmed/15826246

1.46 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND IMMUNE SYSTEM (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Immune System*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+IMMUNE+SYSTEM

Sort by: Most Recent - Search results = Items: 57

Among the results of the research **some significant scientific papers** have been chosen:

Hubler MJ, Peterson KR, Hasty AH. *Iron homeostasis: a new job for macrophages in adipose tissue?* Trends Endocrinol Metab. 2015 Feb;26(2):101-9. doi: 10.1016/j.tem.2014.12.005. Epub 2015 Jan 16. Review. PubMed PMID: 25600948; PubMed Central PMCID: PMC4315734. https://www.ncbi.nlm.nih.gov/pubmed/25600948

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Hill AA, Reid Bolus W, Hasty AH. *A decade of progress in adipose tissue macrophage biology*. Immunol Rev. 2014 Nov;262(1):134-52. doi: 10.1111/imr.12216. Review. PubMed PMID: 25319332; PubMed Central PMCID: PMC4203421.
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Vuong J, Qiu Y, La M, Clarke G, Swinkels DW, Cembrowski G. *Reference intervals of complete blood count constituents are highly correlated to waist circumference: should obese patients have their own "normal values?*". Am J Hematol. 2014 Jul;89(7):671-7. doi: 10.1002/ajh.23713. Epub 2014 Apr 26. PubMed PMID: 24644218.
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Kusminski CM, Park J, Scherer PE. *MitoNEET-mediated effects on browning of white adipose tissue*. Nat Commun. 2014 May 28;5:3962. doi: 10.1038/ncomms4962. PubMed PMID: 24865177; PubMed Central PMCID: PMC4084619. https://www.ncbi.nlm.nih.gov/pubmed/24865177

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Krośniak M, Francik R, Kowalska J, Gryboś R, Blusz M, Kwiatek WM. *Effects of vanadium complexes supplementation on V, Fe, Cu, Zn, Mn, Ca and K concentration in STZ diabetic rat's spleen*. Acta Pol Pharm. 2013 Jan-Feb;70(1):71-7. PubMed PMID: 23610961.
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Venn-Watson S, Benham C, Carlin K, DeRienzo D, St Leger J. *Hemochromatosis and fatty liver disease: building evidence for insulin resistance in bottlenose dolphins (Tursiops truncatus)*. J Zoo Wildl Med. 2012 Sep;43(3 Suppl):S35-47. PubMed PMID: 23156704.
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Fujita N, Takei Y. *Iron overload in nonalcoholic steatohepatitis*. Adv Clin Chem. 2011;55:105-32. Review. PubMed PMID: 22126026. https://www.ncbi.nlm.nih.gov/pubmed/22126026

Lefkowitch JH. *Hepatobiliary pathology*. Curr Opin Gastroenterol. 2008 May;24(3):269-77. doi: 10.1097/MOG.0b013e3282f8e28f. Review. PubMed PMID: 18408454.
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1.47 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND APOPTOSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Apoptosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+APOPTOSIS

Sort by: Most Recent - Search results = Items: 57

Among the results of the research **some significant scientific papers** have been chosen:

Backe MB, Moen IW, Ellervik C, Hansen JB, Mandrup-Poulsen T. *Iron Regulation of Pancreatic Beta-Cell Functions and Oxidative Stress*. Annu Rev Nutr. 2016 Jul 17;36:241-73. doi: 10.1146/annurev-nutr-071715-050939. Epub 2016 May 4. Review. PubMed PMID: 27146016. https://www.ncbi.nlm.nih.gov/pubmed/27146016

Kusminski CM, Chen S, Ye R, Sun K, Wang QA, Spurgin SB, Sanders PE, Brozinick JT, Geldenhuys WJ, Li WH, Unger RH, Scherer PE. *MitoNEET-Parkin Effects in Pancreatic α- and β-Cells, Cellular Survival, and Intrainsular Cross Talk*. Diabetes. 2016 Jun;65(6):1534-55. doi: 10.2337/db15-1323. Epub 2016 Feb 19. PubMed PMID: 26895793; PubMed Central PMCID: PMC5310214. https://www.ncbi.nlm.nih.gov/pubmed/26895793

Golko-Perez S, Mandel S, Amit T, Kupershmidt L, Youdim MB, Weinreb O. *Additive Neuroprotective Effects of the Multifunctional Iron Chelator M30 with Enriched Diet in a Mouse Model of Amyotrophic Lateral Sclerosis*. Neurotox Res. 2016 Feb;29(2):208-17. doi: 10.1007/s12640-015-9574-4. Epub 2015 Nov 18. PubMed PMID: 26581376. https://www.ncbi.nlm.nih.gov/pubmed/26581376

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Igoillo-Esteve M, Gurgul-Convey E, Hu A, Romagueira Bichara Dos Santos L, Abdulkarim B, Chintawar S, Marselli L, Marchetti P, Jonas JC, Eizirik DL, Pandolfo M, Cnop M. *Unveiling a common mechanism of apoptosis in β-cells and neurons in Friedreich's ataxia*. Hum Mol Genet. 2015 Apr 15;24(8):2274-86. doi: 10.1093/hmg/ddu745. Epub 2014 Dec 30. PubMed PMID: 25552656. https://www.ncbi.nlm.nih.gov/pubmed/25552656

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Peverill W, Powell LW, Skoien R. *Evolving concepts in the pathogenesis of NASH: beyond steatosis and inflammation.* Int J Mol Sci. 2014 May 14;15(5):8591-638. doi: 10.3390/ijms15058591. Review. PubMed PMID: 24830559; PubMed Central PMCID: PMC4057750. https://www.ncbi.nlm.nih.gov/pubmed/24830559

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Armutcu F, Akyol S, Ucar F, Erdogan S, Akyol O. *Markers in non-alcoholic steatohepatitis*. Adv Clin Chem. 2013;61:67-125. Review. PubMed PMID: 24015600. https://www.ncbi.nlm.nih.gov/pubmed/24015600

Cnop M, Igoillo-Esteve M, Rai M, Begu A, Serroukh Y, Depondt C, Musuaya AE, Marhfour I, Ladrière L, Moles Lopez X, Lefkaditis D, Moore F, Brion JP, Cooper JM, Schapira AH, Clark A, Koeppen AH, Marchetti P, Pandolfo M, Eizirik DL, Féry F. *Central role and mechanisms of β-cell dysfunction and death in friedreich ataxia-associated diabetes*. Ann Neurol. 2012 Dec;72(6):971-82. doi: 10.1002/ana.23698. PubMed PMID: 23280845; PubMed Central PMCID: PMC4900175. https://www.ncbi.nlm.nih.gov/pubmed/23280845

Xu G, Ahn J, Chang S, Eguchi M, Ogier A, Han S, Park Y, Shim C, Jang Y, Yang B, Xu A, Wang Y, Sweeney G. *Lipocalin-2 induces cardiomyocyte apoptosis by increasing intracellular iron accumulation*. J Biol Chem. 2012 Feb 10;287(7):4808-17. doi: 10.1074/jbc.M111.275719. Epub 2011 Nov 22. PubMed PMID: 22117066; PubMed Central PMCID: PMC3281654. https://www.ncbi.nlm.nih.gov/pubmed/22117066

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Cai SX, Drewe J, Kasibhatla S. *A chemical genetics approach for the discovery of apoptosis inducers: from phenotypic cell based HTS assay and structure-activity relationship studies, to identification of potential anticancer agents and molecular targets*. Curr Med Chem. 2006;13(22):2627-44. Review. PubMed PMID: 17017915. https://www.ncbi.nlm.nih.gov/pubmed/17017915

Okada T, Sawada T, Kubota K. *Deferoxamine enhances anti-proliferative effect of interferon-gamma against hepatocellular carcinoma cells*. Cancer Lett. 2007 Apr 8;248(1):24-31. Epub 2006 Jul 11. PubMed PMID: 16837131.https://www.ncbi.nlm.nih.gov/pubmed/16837131

Singh B, Charkowicz D, Mascarenhas D. *Insulin-like growth factor-independent effects mediated by a C-terminal metal-binding domain of insulin-like growth factor binding protein-3*. J Biol Chem. 2004 Jan 2;279(1):477-87. Epub 2003 Oct 22. PubMed PMID: 14576163. https://www.ncbi.nlm.nih.gov/pubmed/14576163

1.48 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND APOPTOSIS (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*", "*Iron*" and "*Apoptosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+APOPTOSIS

Sort by: Best Match - Search results = Items: 48

Among the results of the research **some significant scientific papers** have been chosen:

Ryu BR, Ko HW, Jou I, Noh JS, Gwag BJ. *Phosphatidylinositol 3-kinase-mediated regulation of neuronal apoptosis and necrosis by insulin and IGF-I. J Neurobiol*. 1999 Jun 15;39(4):536-46. PubMed PMID: 10380075. https://www.ncbi.nlm.nih.gov/pubmed/10380075

Haq RU, Wereley JP, Chitambar CR. *Induction of apoptosis by iron deprivation in human leukemic CCRF-CEM cells*. Exp Hematol. 1995 May;23(5):428-32. PubMed PMID: 7720813.https://www.ncbi.nlm.nih.gov/pubmed/7720813

Weinzimer SA, Gibson TB, Collett-Solberg PF, Khare A, Liu B, Cohen P. *Transferrin is an insulin-like growth factor-binding protein-3 binding protein*. J Clin Endocrinol Metab. 2001 Apr;86(4):1806-13. PubMed PMID: 11297622. https://www.ncbi.nlm.nih.gov/pubmed/11297622

Perry T, Lahiri DK, Sambamurti K, Chen D, Mattson MP, Egan JM, Greig NH. *Glucagon-like peptide-1 decreases endogenous amyloid-beta peptide (Abeta) levels and protects hippocampal neurons from death induced by Abeta and iron*. J Neurosci Res. 2003 Jun 1;72(5):603-12. PubMed PMID: 12749025. https://www.ncbi.nlm.nih.gov/pubmed/12749025

White BC, Sullivan JM, DeGracia DJ, O'Neil BJ, Neumar RW, Grossman LI, Rafols JA, Krause GS. *Brain ischemia and reperfusion: molecular mechanisms of neuronal injury*. J Neurol Sci. 2000 Oct 1;179(S 1-2):1-33. Review. PubMed PMID: 11054482.
https://www.ncbi.nlm.nih.gov/pubmed/11054482

1.49 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+CYTOCHROME+C
Sort by: Most Recent - Search results = Items: 16

Among the results of the research **some significant scientific papers** have been chosen:

Zou C, Liu X, Xie R, Bao Y, Jin Q, Jia X, Li L, Liu R. *Deferiprone attenuates inflammation and myocardial fibrosis in diabetic cardiomyopathy rats*. Biochem Biophys Res Commun. 2017 May 13;486(4):930-936. doi: 10.1016/j.bbrc.2017.03.127. Epub 2017 Mar 24. PubMed PMID: 28347819. https://www.ncbi.nlm.nih.gov/pubmed/28347819

Gaignard P, Menezes M, Schiff M, Bayot A, Rak M, Ogier de Baulny H, Su CH, Gilleron M, Lombes A, Abida H, Tzagoloff A, Riley L, Cooper ST, Mina K, Sivadorai P, Davis MR, Allcock RJ, Kresoje N, Laing NG, Thorburn DR, Slama A, Christodoulou J, Rustin P. ***Mutations in CYC1, encoding cytochrome c1 subunit of respiratory chain complex III, cause insulin-responsive hyperglycemia***. Am J Hum Genet. 2013 Aug 8;93(2):384-9. doi: 10.1016/j.ajhg.2013.06.015. Epub 2013 Aug 1. PubMed PMID: 23910460; PubMed Central PMCID: PMC3738829. https://www.ncbi.nlm.nih.gov/pubmed/23910460

Cnop M, Mulder H, Igoillo-Esteve M. *Diabetes in Friedreich ataxia*. J Neurochem. 2013 Aug;126 Suppl 1:94-102. doi: 10.1111/jnc.12216. Review. PubMed PMID: 23859345. https://www.ncbi.nlm.nih.gov/pubmed/23859345

Jouihan HA, Cobine PA, Cooksey RC, Hoagland EA, Boudina S, Abel ED, Winge DR, McClain DA. *Iron-mediated inhibition of mitochondrial manganese uptake mediates mitochondrial dysfunction in a mouse model of hemochromatosis*. Mol Med. 2008 Mar-Apr;14(3-4):98-108. doi: 10.2119/2007-00114.Jouihan. PubMed PMID: 18317567; PubMed Central PMCID: PMC2258172. https://www.ncbi.nlm.nih.gov/pubmed/18317567

Chang SY, Zheng NY, Chen CS, Chen CD, Chen YY, Wang CR. *Analysis of peptides and proteins affinity-bound to iron oxide nanoparticles by MALDI MS*. J Am Soc Mass Spectrom. 2007 May;18(5):910-8. Epub 2007 Mar 23. PubMed PMID: 17368044.
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Wiseman A. *Avoidance of oxidative-stress perturbation in yeast bioprocesses by proteomic and genomic biostrategies?* Lett Appl Microbiol. 2005;40(1):37-43. PubMed PMID: 15613000. https://www.ncbi.nlm.nih.gov/pubmed/15613000

White BC, Sullivan JM, DeGracia DJ, O'Neil BJ, Neumar RW, Grossman LI, Rafols JA, Krause GS. *Brain ischemia and reperfusion: molecular mechanisms of neuronal injury*. J Neurol Sci. 2000 Oct 1;179(S 1-2):1-33. Review. PubMed PMID: 11054482.
https://www.ncbi.nlm.nih.gov/pubmed/11054482

1.50 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND REACTIVE OXYGEN SPECIES (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*", "*Iron*" and "*Reactive Oxygen Species*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+REACTIVE+OXYGEN+SPECIES

Sort by: Most Recent - Search results = Items: 92

Among the results of the research **some significant scientific papers** have been chosen:

Vlachodimitropoulou E, Chen YL, Garbowski M, Koonyosying P, Psaila B, Sola-Visner M, Cooper N, Hider R, Porter J. *Eltrombopag: a powerful chelator of cellular or extracellular iron(III) alone or combined with a second chelator. Blood*. 2017 Oct 26;130(17):1923-1933. doi: 10.1182/blood-2016-10-740241. Epub 2017 Sep 1. PubMed PMID: 28864815. https://www.ncbi.nlm.nih.gov/pubmed/28864815

Franco C, Genis L, Navarro JA, Perez-Domper P, Fernandez AM, Schneuwly S, Torres Alemán I. *A role for astrocytes in cerebellar deficits in frataxin deficiency: Protection by insulin-like growth factor I*. Mol Cell Neurosci. 2017 Apr;80:100-110. doi: 10.1016/j.mcn.2017.02.008. Epub 2017 Mar 7. PubMed PMID: 28286293. https://www.ncbi.nlm.nih.gov/pubmed/28286293

Lowe J, Taveira-da-Silva R, Hilário-Souza E. *Dissecting copper homeostasis in diabetes mellitus. IUBMB Life*. 2017 Apr;69(4):255-262. doi: 10.1002/iub.1614. Epub 2017 Mar 9. Review. PubMed PMID: 28276155. https://www.ncbi.nlm.nih.gov/pubmed/28276155

Arakawa K, Hosono A, Shibata K, Ghadimi R, Fuku M, Goto C, Imaeda N, Tokudome Y, Hoshino H, Marumoto M, Kobayashi M, Suzuki S, Tokudome S. *Changes in blood biochemical markers before, during, and after a 2-day ultramarathon*. Open Access J Sports Med. 2016 Apr 21;7:43-50. doi: 10.2147/OAJSM.S97468. eCollection 2016. PubMed PMID: 27186145; PubMed Central PMCID: PMC4847591. https://www.ncbi.nlm.nih.gov/pubmed/27186145

Baldwin HJ, Green AE, Spellar KM, Arthur PJ, Phillips HG, Patel JV. *Tipping the balance: Haemoglobinopathies and the risk of diabetes*. World J Diabetes. 2016 Jan 10;7(1):8-13. doi: 10.4239/wjd.v7.i1.8. PubMed PMID: 26788262; PubMed Central PMCID: PMC4707301. https://www.ncbi.nlm.nih.gov/pubmed/26788262

Mello T, Zanieri F, Ceni E, Galli A. *Oxidative Stress in the Healthy and Wounded Hepatocyte: A Cellular Organelles Perspective*. Oxid Med Cell Longev. 2016;2016:8327410. doi: 10.1155/2016/8327410. Epub 2015 Dec 14. Review. PubMed PMID: 26788252; PubMed Central PMCID: PMC4691634. https://www.ncbi.nlm.nih.gov/pubmed/26788252

Yang SL, Xia JH, Zhang YY, Fan JG, Wang H, Yuan J, Zhao ZZ, Pan Q, Mu YL, Xin LL, Chen YX, Li K. *Hyperinsulinemia shifted energy supply from glucose to ketone bodies in early nonalcoholic steatohepatitis from high-fat high-sucrose diet induced Bama minipigs*. Sci Rep. 2015 Sep 11;5:13980. doi: 10.1038/srep13980. PubMed PMID: 26358367; PubMed Central PMCID: PMC4566077. https://www.ncbi.nlm.nih.gov/pubmed/26358367

Simon Y, Kessler SM, Gemperlein K, Bohle RM, Müller R, Haybaeck J, Kiemer AK. *Elevated free cholesterol in a p62 overexpression model of non-alcoholic steatohepatitis*. World J Gastroenterol. 2014 Dec 21;20(47):17839-50. doi: 10.3748/wjg.v20.i47.17839. PubMed PMID: 25548482; PubMed Central PMCID: PMC4273134.
https://www.ncbi.nlm.nih.gov/pubmed/25548482

Hino K, Hara Y, Nishina S. *Mitochondrial reactive oxygen species as a mystery voice in hepatitis C*. Hepatol Res. 2014 Feb;44(2):123-32. doi: 10.1111/hepr.12247. Epub 2014 Jan 8. PubMed PMID: 24112394. https://www.ncbi.nlm.nih.gov/pubmed/24112394

Messner DJ, Rhieu BH, Kowdley KV. *Iron overload causes oxidative stress and impaired insulin signaling in AML-12 hepatocytes*. Dig Dis Sci. 2013 Jul;58(7):1899-908. doi: 10.1007/s10620-013-2648-3. Epub 2013 Apr 5. PubMed PMID: 23558563; PubMed Central PMCID: PMC3700657.
https://www.ncbi.nlm.nih.gov/pubmed/23558563

Ivanov AV, Bartosch B, Smirnova OA, Isaguliants MG, Kochetkov SN. *HCV and oxidative stress in the liver*. Viruses. 2013 Jan 28;5(2):439-69. doi: 10.3390/v5020439. Review. PubMed PMID: 23358390; PubMed Central PMCID: PMC3640510.
https://www.ncbi.nlm.nih.gov/pubmed/23358390

Saravanan G, Ponmurugan P, Begum MS. *Effect of S-allylcysteine, a sulphur containing amino acid on iron metabolism in streptozotocin induced diabetic rats*. J Trace Elem Med Biol. 2013 Apr;27(2):143-7. doi: 10.1016/j.jtemb.2012.07.009. Epub 2012 Sep 13. PubMed PMID: 22981633.
https://www.ncbi.nlm.nih.gov/pubmed/22981633

Norambuena J, Flores R, Cárdenas JP, Quatrini R, Chávez R, Levicán G. *Thiol/Disulfide system plays a crucial role in redox protection in the acidophilic iron-oxidizing bacterium Leptospirillum ferriphilum.* PLoS One. 2012;7(9):e44576. doi: 10.1371/journal.pone.0044576. Epub 2012 Sep 6. PubMed PMID: 22970253; PubMed Central PMCID: PMC3435265.
https://www.ncbi.nlm.nih.gov/pubmed/22970253

Valentini S, Cabreiro F, Ackerman D, Alam MM, Kunze MB, Kay CW, Gems D. *Manipulation of in vivo iron levels can alter resistance to oxidative stress without affecting ageing in the nematode C. elegans*. Mech Ageing Dev. 2012 May;133(5):282-90. doi: 10.1016/j.mad.2012.03.003. Epub 2012 Mar 16. PubMed PMID: 22445852; PubMed Central PMCID: PMC3449239. https://www.ncbi.nlm.nih.gov/pubmed/22445852

Del Guerra S, D'Aleo V, Gualtierotti G, Pandolfi R, Boggi U, Vistoli F, Barnini S, Filipponi F, Del Prato S, Lupi R. *Evidence for a role of frataxin in pancreatic islets isolated from multi-organ donors with and without type 2 diabetes mellitus*. Horm Metab Res. 2012 Jun;44(6):471-5. doi: 10.1055/s-0032-1301920. Epub 2012 Mar 7. PubMed PMID: 22399236.
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Ackerman D, Gems D. *Insulin/IGF-1 and hypoxia signaling act in concert to regulate iron homeostasis in Caenorhabditis elegans*. PLoS Genet. 2012;8(3):e1002498. doi: 10.1371/journal.pgen.1002498. Epub 2012 Mar 1. PubMed PMID: 22396654; PubMed Central PMCID: PMC3291539. https://www.ncbi.nlm.nih.gov/pubmed/22396654

Fujinaga H, Tsutsumi T, Yotsuyanagi H, Moriya K, Koike K. *Hepatocarcinogenesis in hepatitis C: HCV shrewdly exacerbates oxidative stress by modulating both production and scavenging of reactive oxygen species*. Oncology. 2011;81 Suppl 1:11-7. doi: 10.1159/000333253. Epub 2011 Dec 22. PubMed PMID: 22212930. https://www.ncbi.nlm.nih.gov/pubmed/22212930

Nelson JE, Klintworth H, Kowdley KV. *Iron metabolism in Nonalcoholic Fatty Liver Disease*. Curr Gastroenterol Rep. 2012 Feb;14(1):8-16. doi: 10.1007/s11894-011-0234-4. Review. PubMed PMID: 22124850. https://www.ncbi.nlm.nih.gov/pubmed/22124850

Francés DE, Ronco MT, Ingaramo PI, Monti JA, Pisani GB, Parody JP, Pellegrino JM, Carrillo MC, Martín-Sanz P, Carnovale CE. *Role of reactive oxygen species in the early stages of liver regeneration in streptozotocin-induced diabetic rats*. Free Radic Res. 2011 Oct;45(10):1143-53. doi: 10.3109/10715762.2011.602345. Epub 2011 Jul 29. PubMed PMID: 21740310. https://www.ncbi.nlm.nih.gov/pubmed/21740310

Whaley-Connell A, McCullough PA, Sowers JR. *The role of oxidative stress in the metabolic syndrome*. Rev Cardiovasc Med. 2011;12(1):21-9. doi: 10.3909/ricm0555. Review. PubMed PMID: 21546885. https://www.ncbi.nlm.nih.gov/pubmed/21546885

1.51 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN, IRON AND REACTIVE OXYGEN SPECIES (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Insulin*", "*Iron*" and "*Reactive Oxygen Species* " (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+IRON+REACTIVE+OXYGEN+SPECIES

Sort by: Best Match - Search results = Items: 78

Among the results of the research **some significant scientific papers** have been chosen:

Grünblatt E, Bartl J, Riederer P. *The link between iron, metabolic syndrome, and Alzheimer's disease*. J Neural Transm (Vienna). 2011 Mar;118(3):371-9. doi: 10.1007/s00702-010-0426-3. Epub 2010 Jun 17. Review. PubMed PMID: 20556444.
https://www.ncbi.nlm.nih.gov/pubmed/20556444

Montes-Cortes DH, Hicks JJ, Ceballos-Reyes GM, Garcia-Sanchez JR, Medina-Navarro R, Olivares-Corichi IM. *Chemical and functional changes of human insulin by in vitro incubation with blood from diabetic patients in oxidative stress*. Metabolism. 2010 Jul;59(7):935-42. doi: 10.1016/j.metabol.2009.10.013. PubMed PMID: 20022071.
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Fields M. *Nutritional factors adversely influencing the glucose/insulin system*. J Am Coll Nutr. 1998 Aug;17(4):317-21. Review. PubMed PMID: 9710838.
https://www.ncbi.nlm.nih.gov/pubmed/9710838

Trigwell SM, Radford PM, Page SR, Loweth AC, James RF, Morgan NG, Todd I. *Islet glutamic acid decarboxylase modified by reactive oxygen species is recognized by antibodies from patients with type 1 diabetes mellitus*. Clin Exp Immunol. 2001 Nov;126(2):242-9. PubMed PMID: 11703367; PubMed Central PMCID: PMC1906190.
https://www.ncbi.nlm.nih.gov/pubmed/11703367

Kaji K, Yoshiji H, Ikenaka Y, Noguchi R, Aihara Y, Shirai Y, Douhara A, Fukui H. *Possible involvement of angiogenesis in chronic liver diseases: interaction among renin-angiotensin-aldosterone system, insulin resistance and oxidative stress*. Curr Med Chem. 2012;19(12):1889-98. Review. PubMed PMID: 22376037. https://www.ncbi.nlm.nih.gov/pubmed/22376037

Morris JK, Bomhoff GL, Stanford JA, Geiger PC. *Neurodegeneration in an animal model of Parkinson's disease is exacerbated by a high-fat diet*. Am J Physiol Regul Integr Comp Physiol. 2010 Oct;299(4):R1082-90. doi: 10.1152/ajpregu.00449.2010. Epub 2010 Aug 11. PubMed PMID: 20702796; PubMed Central PMCID: PMC2957375.
https://www.ncbi.nlm.nih.gov/pubmed/20702796

Kohgo Y, Ikuta K, Ohtake T, Torimoto Y, Kato J. *Iron overload and cofactors with special reference to alcohol, hepatitis C virus infection and steatosis/insulin resistance*. World J Gastroenterol. 2007 Sep 21;13(35):4699-706. Review. PubMed PMID: 17729391; PubMed Central PMCID: PMC4611191. https://www.ncbi.nlm.nih.gov/pubmed/17729391

Scharf JG, Unterman TG, Kietzmann T. *Oxygen-dependent modulation of insulin-like growth factor binding protein biosynthesis in primary cultures of rat hepatocytes*. Endocrinology. 2005 Dec;146(12):5433-43. Epub 2005 Sep 15. PubMed PMID: 16166214.
https://www.ncbi.nlm.nih.gov/pubmed/16166214

Kietzmann T, Porwol T, Zierold K, Jungermann K, Acker H. *Involvement of a local fenton reaction in the reciprocal modulation by O2 of the glucagon-dependent activation of the phosphoenolpyruvate carboxykinase gene and the insulin-dependent activation of the glucokinase gene in rat hepatocytes*. Biochem J. 1998 Oct 15;335 (Pt 2):425-32. PubMed PMID: 9761743; PubMed Central PMCID: PMC1219798. https://www.ncbi.nlm.nih.gov/pubmed/9761743

Bonkovsky HL, Lambrecht RW, Shan Y. *Iron as a co-morbid factor in nonhemochromatotic liver disease*. Alcohol. 2003 Jun;30(2):137-44. Review. PubMed PMID: 12957298.
https://www.ncbi.nlm.nih.gov/pubmed/12957298

Mitsuyoshi H, Itoh Y, Okanoue T. [*Role of oxidative stress in non-alcoholic steatohepatitis*]. Nihon Rinsho. 2006 Jun;64(6):1077-82. Review. Japanese. PubMed PMID: 16768112.
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Dröge W, Schipper HM. *Oxidative stress and aberrant signaling in aging and cognitive decline*. Aging Cell. 2007 Jun;6(3):361-70. Review. PubMed PMID: 17517043; PubMed Central PMCID: PMC1974775. https://www.ncbi.nlm.nih.gov/pubmed/17517043

Sun JS, Li YX, Sun L. *Cynoglossus semilaevis thioredoxin: a reductase and an antioxidant with immunostimulatory property*. Cell Stress Chaperones. 2012 Jul;17(4):445-55. doi: 10.1007/s12192-012-0322-x. Epub 2012 Jan 18. PubMed PMID: 22270611; PubMed Central PMCID: PMC3368026. https://www.ncbi.nlm.nih.gov/pubmed/22270611

Olejnicka BT, Dalen H, Baranowski MM, Brunk UT. *Starvation-induced autophagocytosis paradoxically decreases the susceptibility to oxidative stress of the extremely oxidative stress-sensitive NIT insulinoma cells*. Redox Rep. 1997 Oct-Dec;3(5-6):311-8. PubMed PMID: 9754330. https://www.ncbi.nlm.nih.gov/pubmed/9754330

Xie P, Zhou XX, Zhang Q. [*Pathogenesis and treatment of non-alcoholic fatty liver disease*]. Zhong Xi Yi Jie He Xue Bao. 2010 Mar;8(3):201-9. Review. Chinese. PubMed PMID: 20226139. https://www.ncbi.nlm.nih.gov/pubmed/20226139

Saugstad OD. *Oxidative stress in the newborn--a 30-year perspective*. Biol Neonate. 2005;88(3):228-36. Review. PubMed PMID: 16210845. https://www.ncbi.nlm.nih.gov/pubmed/16210845

Moreno Sánchez D. [*Pathogenesis of primary nonalcoholic fatty liver disease*]. Med Clin (Barc). 2005 May 7;124(17):668-77. Review. Spanish. PubMed PMID: 15882516. https://www.ncbi.nlm.nih.gov/pubmed/15882516

Feng CY, Wong S, Dong Q, Bruce J, Mehta R, Bruce WR, O'Brien PJ. *Hepatocyte inflammation model for cytotoxicity research: fructose or glycolaldehyde as a source of endogenous toxins*. Arch Physiol Biochem. 2009 May;115(2):105-11. doi: 10.1080/13813450902887055. PubMed PMID: 19485706. https://www.ncbi.nlm.nih.gov/pubmed/19485706

Wiseman A. *Elimination of major side effects due to ROS of therapeuticals through biotransformation control of the 57 cytochromes P450 isoenzymes*. Med Hypotheses. 2005;64(4):802-5. PubMed PMID: 15694700. https://www.ncbi.nlm.nih.gov/pubmed/15694700

Chitturi S, Farrell GC. *Etiopathogenesis of nonalcoholic steatohepatitis*. Semin Liver Dis. 2001;21(1):27-41. Review. PubMed PMID: 11296694. https://www.ncbi.nlm.nih.gov/pubmed/11296694

1.52 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND TRANSPORTER (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Transporter*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+TRANSPORTER

Sort by: Most Recent - Search results = Items: 247

Among the results of the research **some significant scientific papers** have been chosen:

Bouvier B, Cézard C. *Impact of iron coordination isomerism on pyoverdine recognition by the FpvA membrane transporter of Pseudomonas aeruginosa*. Phys Chem Chem Phys. 2017 Nov 8;19(43):29498-29507. doi: 10.1039/c7cp04529h. PubMed PMID: 29082401.
https://www.ncbi.nlm.nih.gov/pubmed/29082401

White P, Joshi A, Rassam P, Housden NG, Kaminska R, Goult JD, Redfield C, McCaughey LC, Walker D, Mohammed S, Kleanthous C. *Exploitation of an iron transporter for bacterial protein antibiotic import*. Proc Natl Acad Sci U S A. 2017 Nov 7;114(45):12051-12056. doi: 10.1073/pnas.1713741114. Epub 2017 Oct 25. PubMed PMID: 29078392; PubMed Central PMCID: PMC5692591. https://www.ncbi.nlm.nih.gov/pubmed/29078392

Ito A, Sato T, Ota M, Takemura M, Nishikawa T, Toba S, Kohira N, Miyagawa S, Ishibashi N, Matsumoto S, Nakamura R, Tsuji M, Yamano Y. *In Vitro Antibacterial Properties of Cefiderocol, a Novel Siderophore Cephalosporin, against Gram-Negative Bacteria*. Antimicrob Agents Chemother. 2017 Dec 21;62(1). pii: e01454-17. doi: 10.1128/AAC.01454-17. Print 2018 Jan. PubMed PMID: 29061741; PubMed Central PMCID: PMC5740388.
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Mastropasqua MC, D'Orazio M, Cerasi M, Pacello F, Gismondi A, Canini A, Canuti L, Consalvo A, Ciavardelli D, Chirullo B, Pasquali P, Battistoni A. *Growth of Pseudomonas aeruginosa in zinc poor environments is promoted by a nicotianamine-related metallophore*. Mol Microbiol. 2017 Nov;106(4):543-561. doi: 10.1111/mmi.13834. Epub 2017 Oct 10. PubMed PMID: 28898501. https://www.ncbi.nlm.nih.gov/pubmed/28898501

Huang W, Wilks A. *Extracellular Heme Uptake and the Challenge of Bacterial Cell Membranes*. Annu Rev Biochem. 2017 Jun 20;86:799-823. doi: 10.1146/annurev-biochem-060815-014214. Epub 2017 Apr 19. Review. PubMed PMID: 28426241.
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Salusso A, Raimunda D. *Defining the Roles of the Cation Diffusion Facilitators in Fe(2+)/Zn(2+) Homeostasis and Establishment of Their Participation in Virulence in Pseudomonas aeruginosa*. Front Cell Infect Microbiol. 2017 Mar 20;7:84. doi: 10.3389/fcimb.2017.00084. eCollection 2017. PubMed PMID: 28373967; PubMed Central PMCID: PMC5357649.
https://www.ncbi.nlm.nih.gov/pubmed/28373967

Nairn BL, Eliasson OS, Hyder DR, Long NJ, Majumdar A, Chakravorty S, McDonald P, Roy A, Newton SM, Klebba PE. *Fluorescence High-Throughput Screening for Inhibitors of TonB Action*. J Bacteriol. 2017 Apr 25;199(10). pii: e00889-16. doi: 10.1128/JB.00889-16. Print 2017 May 15. PubMed PMID: 28242720; PubMed Central PMCID: PMC5405212.
https://www.ncbi.nlm.nih.gov/pubmed/28242720

Ganne G, Brillet K, Basta B, Roche B, Hoegy F, Gasser V, Schalk IJ. *Iron Release from the Siderophore Pyoverdine in Pseudomonas aeruginosa Involves Three New Actors: FpvC, FpvG, and FpvH*. ACS Chem Biol. 2017 Apr 21;12(4):1056-1065. doi: 10.1021/acschembio.6b01077. Epub 2017 Feb 23. PubMed PMID: 28192658. https://www.ncbi.nlm.nih.gov/pubmed/28192658

Moynié L, Luscher A, Rolo D, Pletzer D, Tortajada A, Weingart H, Braun Y, Page MG, Naismith JH, Köhler T. *Structure and Function of the PiuA and PirA Siderophore-Drug Receptors from Pseudomonas aeruginosa and Acinetobacter baumannii*. Antimicrob Agents Chemother. 2017 Mar 24;61(4). pii: e02531-16. doi: 10.1128/AAC.02531-16. Print 2017 Apr. PubMed PMID: 28137795; PubMed Central PMCID: PMC5365723.
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Ghequire MG, Kemland L, Anoz-Carbonell E, Buchanan SK, De Mot R. *A Natural Chimeric Pseudomonas Bacteriocin with Novel Pore-Forming Activity Parasitizes the Ferrichrome Transporter*. MBio. 2017 Feb 21;8(1). pii: e01961-16. doi: 10.1128/mBio.01961-16. PubMed PMID: 28223456; PubMed Central PMCID: PMC5358913.
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Ito A, Nishikawa T, Matsumoto S, Yoshizawa H, Sato T, Nakamura R, Tsuji M, Yamano Y. *Siderophore Cephalosporin Cefiderocol Utilizes Ferric Iron Transporter Systems for Antibacterial Activity against Pseudomonas aeruginosa*. Antimicrob Agents Chemother. 2016 Nov 21;60(12):7396-7401. Print 2016 Dec. PubMed PMID: 27736756; PubMed Central PMCID: PMC5119021. https://www.ncbi.nlm.nih.gov/pubmed/27736756

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Magro M, Fasolato L, Bonaiuto E, Andreani NA, Baratella D, Corraducci V, Miotto G, Cardazzo B, Vianello F. *Enlightening mineral iron sensing in Pseudomonas fluorescens by surface active maghemite nanoparticles: Involvement of the OprF porin*. Biochim Biophys Acta. 2016 Oct;1860(10):2202-10. doi: 10.1016/j.bbagen.2016.05.007. Epub 2016 May 4. PubMed PMID: 27155575. https://www.ncbi.nlm.nih.gov/pubmed/27155575

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1.53 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND TRANSPORTER (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Transporter*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+TRANSPORTER

Sort by: Best Match - Search results = Items: 212

Among the results of the research **some significant scientific papers** have been chosen:

Seyedmohammad S, Born D, Venter H. *Expression, purification and functional reconstitution of FeoB, the ferrous iron transporter from Pseudomonas aeruginosa*. Protein Expr Purif. 2014 Sep;101:138-45. doi: 10.1016/j.pep.2014.06.012. Epub 2014 Jun 30. PubMed PMID: 24993789. https://www.ncbi.nlm.nih.gov/pubmed/24993789

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Brillet K, Ruffenach F, Adams H, Journet L, Gasser V, Hoegy F, Guillon L, Hannauer M, Page A, Schalk IJ. *An ABC transporter with two periplasmic binding proteins involved in iron acquisition in Pseudomonas aeruginosa*. ACS Chem Biol. 2012 Dec 21;7(12):2036-45. doi: 10.1021/cb300330v. Epub 2012 Oct 5. PubMed PMID: 23009327. https://www.ncbi.nlm.nih.gov/pubmed/23009327

Mislin GL, Schalk IJ. *Siderophore-dependent iron uptake systems as gates for antibiotic Trojan horse strategies against Pseudomonas aeruginosa*. Metallomics. 2014 Mar;6(3):408-20. doi: 10.1039/c3mt00359k. Epub 2014 Jan 31. Review. PubMed PMID: 24481292. https://www.ncbi.nlm.nih.gov/pubmed/24481292

Aznar A, Chen NW, Rigault M, Riache N, Joseph D, Desmaële D, Mouille G, Boutet S, Soubigou-Taconnat L, Renou JP, Thomine S, Expert D, Dellagi A. *Scavenging iron: a novel mechanism of plant immunity activation by microbial siderophores*. Plant Physiol. 2014 Apr;164(4):2167-83. doi: 10.1104/pp.113.233585. Epub 2014 Feb 5. PubMed PMID: 24501001; PubMed Central PMCID: PMC3982770. https://www.ncbi.nlm.nih.gov/pubmed/24501001

Schalk IJ, Guillon L. *Fate of ferrisiderophores after import across bacterial outer membranes: different iron release strategies are observed in the cytoplasm or periplasm depending on the siderophore pathways.* Amino Acids. 2013 May;44(5):1267-77. doi: 10.1007/s00726-013-1468-2. Epub 2013 Feb 27. Review. PubMed PMID: 23443998. https://www.ncbi.nlm.nih.gov/pubmed/23443998

Hannauer M, Braud A, Hoegy F, Ronot P, Boos A, Schalk IJ. *The PvdRT-OpmQ efflux pump controls the metal selectivity of the iron uptake pathway mediated by the siderophore pyoverdine in Pseudomonas aeruginosa*. Environ Microbiol. 2012 Jul;14(7):1696-708. doi: 10.1111/j.1462-2920.2011.02674.x. Epub 2011 Dec 22. PubMed PMID: 22187978. https://www.ncbi.nlm.nih.gov/pubmed/22187978

Cunrath O, Gasser V, Hoegy F, Reimmann C, Guillon L, Schalk IJ. *A cell biological view of the siderophore pyochelin iron uptake pathway in Pseudomonas aeruginosa*. Environ Microbiol. 2015 Jan;17(1):171-85. doi: 10.1111/1462-2920.12544. Epub 2014 Jul 15. PubMed PMID: 24947078. https://www.ncbi.nlm.nih.gov/pubmed/24947078

Konings AF, Martin LW, Sharples KJ, Roddam LF, Latham R, Reid DW, Lamont IL. *Pseudomonas aeruginosa uses multiple pathways to acquire iron during chronic infection in cystic fibrosis lungs*. Infect Immun. 2013 Aug;81(8):2697-704. doi: 10.1128/IAI.00418-13. Epub 2013 May 20. PubMed PMID: 23690396; PubMed Central PMCID: PMC3719594. https://www.ncbi.nlm.nih.gov/pubmed/23690396

Sato K, Ushioda K, Akiba K, Matsumoto Y, Maseda H, Ando T, Isogai E, Nakae T, Yoneyama H. *Development of a novel antimicrobial screening system targeting the pyoverdine-mediated iron acquisition system and xenobiotic efflux pumps*. Molecules. 2015 Apr 29;20(5):7790-806. doi: 10.3390/molecules20057790. PubMed PMID: 25939068. https://www.ncbi.nlm.nih.gov/pubmed/25939068

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Rajasekaran MB, Mitchell SA, Gibson TM, Hussain R, Siligardi G, Andrews SC, Watson KA. *Isolation and characterisation of EfeM, a periplasmic component of the putative EfeUOBM iron transporter of Pseudomonas syringae pv. syringae*. Biochem Biophys Res Commun. 2010 Jul 30;398(3):366-71. doi: 10.1016/j.bbrc.2010.06.072. Epub 2010 Jun 19. PubMed PMID: 20599727. https://www.ncbi.nlm.nih.gov/pubmed/20599727

Seyedmohammad S, Fuentealba NA, Marriott RA, Goetze TA, Edwardson JM, Barrera NP, Venter H. *Structural model of FeoB, the iron transporter from Pseudomonas aeruginosa, predicts a cysteine lined, GTP-gated pore*. Biosci Rep. 2016 Apr 27;36(2). pii: e00322. doi: 10.1042/BSR20160046. Print 2016. PubMed PMID: 26934982; PubMed Central PMCID: PMC4847171. https://www.ncbi.nlm.nih.gov/pubmed/26934982

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Barker KD, Barkovits K, Wilks A. *Metabolic flux of extracellular heme uptake in Pseudomonas aeruginosa is driven by the iron-regulated heme oxygenase (HemO).* J Biol Chem. 2012 May 25;287(22):18342-50. doi: 10.1074/jbc.M112.359265. Epub 2012 Apr 9. PubMed PMID: 22493498; PubMed Central PMCID: PMC3365768.
https://www.ncbi.nlm.nih.gov/pubmed/22493498

Gasser V, Baco E, Cunrath O, August PS, Perraud Q, Zill N, Schleberger C, Schmidt A, Paulen A, Bumann D, Mislin GL, Schalk IJ. Catechol siderophores repress the pyochelin pathway and activate the enterobactin pathway in Pseudomonas aeruginosa: an opportunity for siderophore-antibiotic conjugates development. Environ Microbiol. 2016 Mar;18(3):819-32. doi: 10.1111/1462-2920.13199. Epub 2016 Feb 5. PubMed PMID: 26718479.
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1.54 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND MELIOIDOSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Melioidosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+MELIOIDOSIS

Sort by: Most Recent - Search results = Items: 3

Wanachiwanawin W. *Infections in E-beta thalassemia*. J Pediatr Hematol Oncol. 2000 Nov-Dec;22(6):581-7. Review. PubMed PMID: 11132234.
https://www.ncbi.nlm.nih.gov/pubmed/11132234

Sexton MM, Jones AL, Chaowagul W, Woods DE. *Purification and characterization of a protease from Pseudomonas pseudomallei*. Can J Microbiol. 1994 Nov;40(11):903-10. PubMed PMID: 7528633. https://www.ncbi.nlm.nih.gov/pubmed/7528633

Yang HM, Chaowagul W, Sokol PA. *Siderophore production by Pseudomonas pseudomallei*. Infect Immun. 1991 Mar;59(3):776-80. PubMed PMID: 1825486; PubMed Central PMCID: PMC258326. https://www.ncbi.nlm.nih.gov/pubmed/1825486

1.55 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND DIABETES (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Diabetes*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+DIABETES

Sort by: Most Recent - Search results = Items: 10

Among the results of the research **some significant scientific papers** have been chosen:

Lakatos B, Nikolova R, Ocskay L, Csomor J, Prinz G. [*Case of a diabetic man cured of rhinocerebral zygomycosis*]. Orv Hetil. 2010 Sep 26;151(39):1591-6. doi: 10.1556/OH.2010.28969. Hungarian. PubMed PMID: 20840916.
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Brandsma ME, Diao H, Wang X, Kohalmi SE, Jevnikar AM, Ma S. *Plant-derived recombinant human serum transferrin demonstrates multiple functions*. Plant Biotechnol J. 2010 May 1;8(4):489-505. PubMed PMID: 20432512. https://www.ncbi.nlm.nih.gov/pubmed/20432512

Pratap U, Quinn S, Blizzard LB, Reid DW. *Population-based study of cystic fibrosis disease severity and haemochromatosis gene mutations*. Respirology. 2010 Jan;15(1):141-9. doi: 10.1111/j.1440-1843.2009.01649.x. PubMed PMID: 20199637.
https://www.ncbi.nlm.nih.gov/pubmed/20199637

1.56 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND CYSTIC FIBROSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Cystic Fibrosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+CYSTIC+FIBROSIS

Sort by: Most Recent - Search results = Items: 148

Among the results of the research **some significant scientific papers** have been chosen:

Sass G, Nazik H, Penner J, Shah H, Ansari SR, Clemons KV, Groleau MC, Dietl AM, Visca P, Haas H, Déziel E, Stevens DA. *Studies of Pseudomonas aeruginosa Mutants Indicate Pyoverdine as the Central Factor in Inhibition of Aspergillus fumigatus Biofilm*. J Bacteriol. 2017 Dec 5;200(1). pii: e00345-17. doi: 10.1128/JB.00345-17. Print 2018 Jan 1. PubMed PMID: 29038255; PubMed Central PMCID: PMC5717155. https://www.ncbi.nlm.nih.gov/pubmed/29038255

Nazik H, Joubert LM, Secor PR, Sweere JM, Bollyky PL, Sass G, Cegelski L, Stevens DA. *Pseudomonas phage inhibition of Candida albicans*. Microbiology. 2017 Nov;163(11):1568-1577. doi: 10.1099/mic.0.000539. Epub 2017 Oct 6. PubMed PMID: 28982395. https://www.ncbi.nlm.nih.gov/pubmed/28982395

Yu S, Ma L. [*Iron uptake and biofilm formation in Pseudomonas aeruginosa*]. Sheng Wu Gong Cheng Xue Bao. 2017 Sep 25;33(9):1489-1512. doi: 10.13345/j.cjb.170140. Chinese. PubMed PMID: 28956396. https://www.ncbi.nlm.nih.gov/pubmed/28956396

Kang D, Kirienko NV. *High-Throughput Genetic Screen Reveals that Early Attachment and Biofilm Formation Are Necessary for Full Pyoverdine Production by Pseudomonas aeruginosa*. Front Microbiol. 2017 Sep 5;8:1707. doi: 10.3389/fmicb.2017.01707. eCollection 2017. PubMed PMID: 28928729; PubMed Central PMCID: PMC5591869. https://www.ncbi.nlm.nih.gov/pubmed/28928729

Stewart PS, Zhang T, Xu R, Pitts B, Walters MC, Roe F, Kikhney J, Moter A. *Reaction-diffusion theory explains hypoxia and heterogeneous growth within microbial biofilms associated with chronic infections*. NPJ Biofilms Microbiomes. 2016 Jun 22;2:16012. doi: 10.1038/npjbiofilms.2016.12. eCollection 2016. PubMed PMID: 28721248; PubMed Central PMCID: PMC5515263. https://www.ncbi.nlm.nih.gov/pubmed/28721248

Harrison F, McNally A, da Silva AC, Heeb S, Diggle SP. *Optimised chronic infection models demonstrate that siderophore 'cheating' in Pseudomonas aeruginosa is context specific*. ISME J. 2017 Nov;11(11):2492-2509. doi: 10.1038/ismej.2017.103. Epub 2017 Jul 11. PubMed PMID: 28696423; PubMed Central PMCID: PMC5649161. https://www.ncbi.nlm.nih.gov/pubmed/28696423

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Hilliam Y, Moore MP, Lamont IL, Bilton D, Haworth CS, Foweraker J, Walshaw MJ, Williams D, Fothergill JL, De Soyza A, Winstanley C. *Pseudomonas aeruginosa adaptation and diversification in the non-cystic fibrosis bronchiectasis lung*. Eur Respir J. 2017 Apr 26;49(4). pii: 1602108. doi: 10.1183/13993003.02108-2016. Print 2017 Apr. PubMed PMID: 28446558. https://www.ncbi.nlm.nih.gov/pubmed/28446558

Pletzer D, Mansour SC, Wuerth K, Rahanjam N, Hancock RE. *New Mouse Model for Chronic Infections by Gram-Negative Bacteria Enabling the Study of Anti-Infective Efficacy and Host-Microbe Interactions*. MBio. 2017 Feb 28;8(1). pii: e00140-17. doi: 10.1128/mBio.00140-17. PubMed PMID: 28246361; PubMed Central PMCID: PMC5347345. https://www.ncbi.nlm.nih.gov/pubmed/28246361

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Chowdhury N, Bagchi A. *Structural Insight into the Gene Expression Profiling of the hcn Operon in Pseudomonas aeruginosa*. Appl Biochem Biotechnol. 2017 Jul;182(3):1144-1157. doi: 10.1007/s12010-016-2388-x. Epub 2017 Jan 7. PubMed PMID: 28064429. https://www.ncbi.nlm.nih.gov/pubmed/28064429

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Yu S, Wei Q, Zhao T, Guo Y, Ma LZ. *A Survival Strategy for Pseudomonas aeruginosa That Uses Exopolysaccharides To Sequester and Store Iron To Stimulate Psl-Dependent Biofilm Formation*. Appl Environ Microbiol. 2016 Oct 14;82(21):6403-6413. Print 2016 Nov 1. PubMed PMID: 27565622; PubMed Central PMCID: PMC5066357. https://www.ncbi.nlm.nih.gov/pubmed/27565622

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Miranda-CasoLuengo AA, Staunton PM, Dinan AM, Lohan AJ, Loftus BJ. *Functional characterization of the Mycobacterium abscessus genome coupled with condition specific transcriptomics reveals conserved molecular strategies for host adaptation and persistence*. BMC Genomics. 2016 Aug 5;17:553. doi: 10.1186/s12864-016-2868-y. PubMed PMID: 27495169; PubMed Central PMCID: PMC4974804. https://www.ncbi.nlm.nih.gov/pubmed/27495169

Penner JC, Ferreira JA, Secor PR, Sweere JM, Birukova MK, Joubert LM, Haagensen JA, Garcia O, Malkovskiy AV, Kaber G, Nazik H, Manasherob R, Spormann AM, Clemons KV, Stevens DA, Bollyky PL. *Pf4 bacteriophage produced by Pseudomonas aeruginosa inhibits Aspergillus fumigatus metabolism via iron sequestration*. Microbiology. 2016 Sep;162(9):1583-1594. doi: 10.1099/mic.0.000344. Epub 2016 Jul 29. PubMed PMID: 27473221. https://www.ncbi.nlm.nih.gov/pubmed/27473221

Nguyen AT, Oglesby-Sherrouse AG. *Interactions between Pseudomonas aeruginosa and Staphylococcus aureus during co-cultivations and polymicrobial infections*. Appl Microbiol Biotechnol. 2016 Jul;100(14):6141-8. doi: 10.1007/s00253-016-7596-3. Epub 2016 May 28. Review. PubMed PMID: 27236810; PubMed Central PMCID: PMC4916000. https://www.ncbi.nlm.nih.gov/pubmed/27236810

Welsh MA, Blackwell HE. *Chemical Genetics Reveals Environment-Specific Roles for Quorum Sensing Circuits in Pseudomonas aeruginosa*. Cell Chem Biol. 2016 Mar 17;23(3):361-9. doi: 10.1016/j.chembiol.2016.01.006. Epub 2016 Feb 18. PubMed PMID: 26905657; PubMed Central PMCID: PMC4798878. https://www.ncbi.nlm.nih.gov/pubmed/26905657

Dingemans J, Ghequire MG, Craggs M, De Mot R, Cornelis P. *Identification and functional analysis of a bacteriocin, pyocin S6, with ribonuclease activity from a Pseudomonas aeruginosa cystic fibrosis clinical isolate*. Microbiologyopen. 2016 Jun;5(3):413-23. doi: 10.1002/mbo3.339. Epub 2016 Feb 9. PubMed PMID: 26860427; PubMed Central PMCID: PMC4905994. https://www.ncbi.nlm.nih.gov/pubmed/26860427

1.57 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND CYSTIC FIBROSIS (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Cystic Fibrosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+CYSTIC+FIBROSIS

Sort by: Best Match - Search results = Items: 143

Among the results of the research **some significant scientific papers** have been chosen:

Nguyen AT, O'Neill MJ, Watts AM, Robson CL, Lamont IL, Wilks A, Oglesby-Sherrouse AG. *Adaptation of iron homeostasis pathways by a Pseudomonas aeruginosa pyoverdine mutant in the cystic fibrosis lung*. J Bacteriol. 2014 Jun;196(12):2265-76. doi: 10.1128/JB.01491-14. Epub 2014 Apr 11. PubMed PMID: 24727222; PubMed Central PMCID: PMC4054187. https://www.ncbi.nlm.nih.gov/pubmed/24727222

Smith DJ, Lamont IL, Anderson GJ, Reid DW. *Targeting iron uptake to control Pseudomonas aeruginosa infections in cystic fibrosis*. Eur Respir J. 2013 Dec;42(6):1723-36. doi: 10.1183/09031936.00124012. Epub 2012 Nov 8. Review. PubMed PMID: 23143541. https://www.ncbi.nlm.nih.gov/pubmed/23143541

Barnabie PM, Whiteley M. *Iron-Mediated Control of Pseudomonas aeruginosa-Staphylococcus aureus Interactions in the Cystic Fibrosis Lung*. J Bacteriol. 2015 Jul;197(14):2250-1. doi: 10.1128/JB.00303-15. Epub 2015 Apr 27. PubMed PMID: 25917912; PubMed Central PMCID: PMC4524178. https://www.ncbi.nlm.nih.gov/pubmed/25917912

Hunter RC, Asfour F, Dingemans J, Osuna BL, Samad T, Malfroot A, Cornelis P, Newman DK. *Ferrous iron is a significant component of bioavailable iron in cystic fibrosis airways*. MBio. 2013 Aug 20;4(4). pii: e00557-13. doi: 10.1128/mBio.00557-13. PubMed PMID: 23963183; PubMed Central PMCID: PMC3753050. https://www.ncbi.nlm.nih.gov/pubmed/23963183

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1.58 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND PULMONARY INFECTIONS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Pulmonary Infections*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+PULMONARY+INFECTION

Sort by: Most Recent - Search results = Items: 74

Among the results of the research **some significant scientific papers** have been chosen:

Reinhart AA, Nguyen AT, Brewer LK, Bevere J, Jones JW, Kane MA, Damron FH, Barbier M, Oglesby-Sherrouse AG. *The Pseudomonas aeruginosa PrrF Small RNAs Regulate Iron Homeostasis during Acute Murine Lung Infection*. Infect Immun. 2017 Apr 21;85(5). pii: e00764-16. doi: 10.1128/IAI.00764-16. Print 2017 May. PubMed PMID: 28289146; PubMed Central PMCID: PMC5400841. https://www.ncbi.nlm.nih.gov/pubmed/28289146

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Hare NJ, Solis N, Harmer C, Marzook NB, Rose B, Harbour C, Crossett B, Manos J, Cordwell SJ. *Proteomic profiling of Pseudomonas aeruginosa AES-1R, PAO1 and PA14 reveals potential virulence determinants associated with a transmissible cystic fibrosis-associated strain*. BMC Microbiol. 2012 Jan 22;12:16. doi: 10.1186/1471-2180-12-16. PubMed PMID: 22264352; PubMed Central PMCID: PMC3398322. https://www.ncbi.nlm.nih.gov/pubmed/22264352

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1.59 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND PULMONARY INFECTIONS (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Pulmonary Infections*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+PULMONARY+INFECTION

Sort by: Best Match - Search results = Items: 100

Among the results of the research **some significant scientific papers** have been chosen:

Sabra W, Haddad AM, Zeng AP. *Comparative physiological study of the wild type and the small colony variant of Pseudomonas aeruginosa 20265 under controlled growth conditions*. World J Microbiol Biotechnol. 2014 Mar;30(3):1027-36. doi: 10.1007/s11274-013-1521-z. Epub 2013 Oct 16. PubMed PMID: 24129697. https://www.ncbi.nlm.nih.gov/pubmed/24129697

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Sokol PA, Woods DE. Relationship of iron and extracellular virulence factors to Pseudomonas aeruginosa lung infections. J Med Microbiol. 1984 Aug;18(1):125-33. PubMed PMID: 6431109.
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Takase H, Nitanai H, Hoshino K, Otani T. Requirement of the Pseudomonas aeruginosa tonB gene for high-affinity iron acquisition and infection. Infect Immun. 2000 Aug;68(8):4498-504. PubMed PMID: 10899848; PubMed Central PMCID: PMC98358.
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de Montalembert M, Fauchère JL, Bourdon R, Lenoir G, Rey J. [*Iron deficiency and Pseudomonas aeruginosa colonization in cystic fibrosis*]. Arch Fr Pediatr. 1989 May;46(5):331-4. French. PubMed PMID: 2504126. https://www.ncbi.nlm.nih.gov/pubmed/2504126

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M**ashburn LM, Jett AM, Akins DR, Whiteley M**. *Staphylococcus aureus serves as an iron source for Pseudomonas aeruginosa during in vivo coculture*. J Bacteriol. 2005 Jan;187(2):554-66. PubMed PMID: 15629927; PubMed Central PMCID: PMC543556.
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1.60 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND IMMUNE SYSTEM (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Immune System*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+IMMUNE+SYSTEM

Sort by: Most Recent - Search results = Items: 63

Among the results of the research **some significant scientific papers** have been chosen:

Smeriglio A, Denaro M, Barreca D, Calderaro A, Bisignano C, Ginestra G, Bellocco E, Trombetta D. *In Vitro Evaluation of the Antioxidant, Cytoprotective, and Antimicrobial Properties of Essential Oil from Pistacia vera L. Variety Bronte Hull*. Int J Mol Sci. 2017 Jun 6;18(6). pii: E1212. doi: 10.3390/ijms18061212. PubMed PMID: 28587291; PubMed Central PMCID: PMC5486035. https://www.ncbi.nlm.nih.gov/pubmed/28587291

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Tatano Y, Kanehiro Y, Sano C, Shimizu T, Tomioka H. *ATP exhibits antimicrobial action by inhibiting bacterial utilization of ferric ions*. Sci Rep. 2015 Feb 25;5:8610. doi: 10.1038/srep08610. PubMed PMID: 25712807; PubMed Central PMCID: PMC4339799.
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Lassek C, Burghartz M, Chaves-Moreno D, Otto A, Hentschker C, Fuchs S, Bernhardt J, Jauregui R, Neubauer R, Becher D, Pieper DH, Jahn M, Jahn D, Riedel K. *A metaproteomics approach to elucidate host and pathogen protein expression during catheter-associated urinary tract infections (CAUTIs)*. Mol Cell Proteomics. 2015 Apr;14(4):989-1008. doi: 10.1074/mcp.M114.043463. Epub 2015 Feb 11. PubMed PMID: 25673765; PubMed Central PMCID: PMC4390275. https://www.ncbi.nlm.nih.gov/pubmed/25673765

Lee J, Zhang L. *The hierarchy quorum sensing network in Pseudomonas aeruginosa*. Protein Cell. 2015 Jan;6(1):26-41. doi: 10.1007/s13238-014-0100-x. Epub 2014 Sep 25. Review. PubMed PMID: 25249263; PubMed Central PMCID: PMC4286720.
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Chang W, Small DA, Toghrol F, Bentley WE. *Microarray analysis of Pseudomonas aeruginosa reveals induction of pyocin genes in response to hydrogen peroxide*. BMC Genomics. 2005 Sep 8;6:115. PubMed PMID: 16150148; PubMed Central PMCID: PMC1250226.
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1.61 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND IMMUNE SYSTEM (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Immune System*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+IMMUNE+SYSTEM

Sort by: Best Match - Search results = Items: 62

Among the results of the research **some significant scientific papers** have been chosen:

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Budzikiewicz H. *Siderophore-antibiotic conjugates used as trojan horses against Pseudomonas aeruginosa*. Curr Top Med Chem. 2001 May;1(1):73-82. Review. PubMed PMID: 11895295. https://www.ncbi.nlm.nih.gov/pubmed/11895295

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Peyssonnaux C, Zinkernagel AS, Datta V, Lauth X, Johnson RS, Nizet V. *TLR4-dependent hepcidin expression by myeloid cells in response to bacterial pathogens*. Blood. 2006 May 1;107(9):3727-32. Epub 2006 Jan 3. PubMed PMID: 16391018; PubMed Central PMCID: PMC1895778. https://www.ncbi.nlm.nih.gov/pubmed/16391018

1.62 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND APOPTOSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Apoptosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+APOPTOSIS

Sort by: Most Recent - Search results = Items: 8

Among the results of the research **some significant scientific papers** have been chosen:

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1.63 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS PSEUDOMONAS, IRON AND REACTIVE OXYGEN SPECIES (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Reactive Oxygen Species*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+REACTIVE+OXYGEN+SPECIES

Sort by: Most Recent - Search results = Items: 111

Among the results of the research **some significant scientific papers** have been chosen:

Pasqua M, Visaggio D, Lo Sciuto A, Genah S, Banin E, Visca P, Imperi F. *Ferric Uptake Regulator Fur Is Conditionally Essential in Pseudomonas aeruginosa*. J Bacteriol. 2017 Oct 17;199(22). pii: e00472-17. doi: 10.1128/JB.00472-17. Print 2017 Nov 15. PubMed PMID: 28847923; PubMed Central PMCID: PMC5648857.
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Avellan A, Auffan M, Masion A, Levard C, Bertrand M, Rose J, Santaella C, Achouak W. *Remote Biodegradation of Ge-Imogolite Nanotubes Controlled by the Iron Homeostasis of Pseudomonas brassicacearum*. Environ Sci Technol. 2016 Jul 19;50(14):7791-8. doi: 10.1021/acs.est.6b01455. Epub 2016 Jun 27. PubMed PMID: 27347687.
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1.64 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND THE REACTIVE OXYGEN SPECIES (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Reactive Oxygen Species*" (**Please note**: the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+REACTIVE+OXYGEN+SPECIES

Sort by: Best Match - Search results = Items: 108

Among the results of the research some **significant scientific papers** have been chosen:

Rodríguez-Chueca J, Morales M, Mosteo R, Ormad MP, Ovelleiro JL. *Inactivation of Enterococcus faecalis, Pseudomonas aeruginosa and Escherichia coli present in treated urban wastewater by coagulation-flocculation and photo-Fenton processes*. Photochem Photobiol Sci. 2013 May;12(5):864-71. doi: 10.1039/c3pp25352j. PubMed PMID: 23411627. https://www.ncbi.nlm.nih.gov/pubmed/23411627

Vinckx T, Wei Q, Matthijs S, Noben JP, Daniels R, Cornelis P. *A proteome analysis of the response of a Pseudomonas aeruginosa oxyR mutant to iron limitation*. Biometals. 2011 Jun;24(3):523-32. doi: 10.1007/s10534-010-9403-4. Epub 2011 Jan 5. PubMed PMID: 21207115. https://www.ncbi.nlm.nih.gov/pubmed/21207115

Yeom S, Yeom J, Park W. *Molecular characterization of FinR, a novel redox-sensing transcriptional regulator in Pseudomonas putida KT2440*. Microbiology. 2010 May;156(Pt 5):1487-96. doi: 10.1099/mic.0.034181-0. Epub 2010 Jan 7. PubMed PMID: 20056701. https://www.ncbi.nlm.nih.gov/pubmed/20056701

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Moonen MJ, Synowsky SA, van den Berg WA, Westphal AH, Heck AJ, van den Heuvel RH, Fraaije MW, van Berkel WJ. *Hydroquinone dioxygenase from pseudomonas fluorescens ACB: a novel member of the family of nonheme-iron(II)-dependent dioxygenases*. J Bacteriol. 2008 Aug;190(15):5199-209. doi: 10.1128/JB.01945-07. Epub 2008 May 23. PubMed PMID: 18502867; PubMed Central PMCID: PMC2493252. https://www.ncbi.nlm.nih.gov/pubmed/18502867

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1.65 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN PSEUDOMONAS, IRON AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 108

Among the results of the research **some significant scientific papers** have been chosen:

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1.66 SCIENTIFIC PAPERS ABOUT THE RELATIOSHIPS BETWEEN PSEUDOMONAS, IRON AND CYTOCHROME C (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Pseudomonas*", "*Iron*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=PSEUDOMONAS+IRON+CYTOCHROME+C

Sort by: Best Match - Search results = Items: 96

Among the results of the research **some significant scientific papers** have been chosen:

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Beardmore-Gray M, O'Keeffe DT, Anthony C. *The autoreducible cytochromes c of the methylotrophs Methylophilus methylotrophus and Pseudomonas AM1*. Biochem J. 1982 Oct 1;207(1):161-5. PubMed PMID: 6295363; PubMed Central PMCID: PMC1153837.
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1.67 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND TRANSPORTER (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Transporter*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+TRANSPORTER

Sort by: Most Recent - Search results = Items: 25

Among the results of the research **some significant scientific papers** have been chosen:

Si M, Wang Y, Zhang B, Zhao C, Kang Y, Bai H, Wei D, Zhu L, Zhang L, Dong TG, Shen X. *The Type VI Secretion System Engages a Redox-Regulated Dual-Functional Heme Transporter for Zinc Acquisition*. Cell Rep. 2017 Jul 25;20(4):949-959. doi: 10.1016/j.celrep.2017.06.081. PubMed PMID: 28746878. https://www.ncbi.nlm.nih.gov/pubmed/28746878

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1.68 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND TRANSPORTER (A SELECTION OF THE *BEST* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *best* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Transporter*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+TRANSPORTER

Sort by: Best Match - Search results = Items: 21

Among the results of the research **some significant scientific papers** have been chosen:

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Visser MB, Majumdar S, Hani E, Sokol PA. *Importance of the ornibactin and pyochelin siderophore transport systems in Burkholderia cenocepacia lung infections*. Infect Immun. 2004 May;72(5):2850-7. PubMed PMID: 15102796; PubMed Central PMCID: PMC387874. https://www.ncbi.nlm.nih.gov/pubmed/15102796

Muangsombut V, Withatanung P, Srinon V, Chantratita N, Stevens MP, Blackwell JM, Korbsrisate S. *Burkholderia pseudomallei Evades Nramp1 (Slc11a1)- and NADPH Oxidase-Mediated Killing in Macrophages and Exhibits Nramp1-Dependent Virulence Gene Expression*. Front Cell Infect Microbiol. 2017 Aug 8;7:350. doi: 10.3389/fcimb.2017.00350. eCollection 2017. PubMed PMID: 28848712; PubMed Central PMCID: PMC5550678. https://www.ncbi.nlm.nih.gov/pubmed/28848712

1.69 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND CYSTIC FIBROSIS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Fibrosis Cystic*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+FIBROSIS+CYSTIC

Sort by: Most Recent - Search results = Items: 29

Among the results of the research **some significant scientific papers** have been chosen:

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Silva IN, Tavares AC, Ferreira AS, Moreira LM. *Stress conditions triggering mucoid morphotype variation in Burkholderia species and effect on virulence in Galleria mellonella and biofilm formation in vitro*. PLoS One. 2013 Dec 16;8(12):e82522. doi: 10.1371/journal.pone.0082522. eCollection 2013. PubMed PMID: 24358195; PubMed Central PMCID: PMC3865030. https://www.ncbi.nlm.nih.gov/pubmed/24358195

Madeira A, dos Santos SC, Santos PM, Coutinho CP, Tyrrell J, McClean S, Callaghan M, Sá-Correia I. *Proteomic profiling of Burkholderia cenocepacia clonal isolates with different virulence potential retrieved from a cystic fibrosis patient during chronic lung infection*. PLoS One. 2013 Dec 13;8(12):e83065. doi: 10.1371/journal.pone.0083065. eCollection 2013. PubMed PMID: 24349432; PubMed Central PMCID: PMC3862766. https://www.ncbi.nlm.nih.gov/pubmed/24349432

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1.70 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND IMMUNE SYSTEM (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Immune System*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+IMMUNE+SYSTEM

Sort by: Most Recent - Search results = Items: 4

Stolt C, Schmidt IH, Sayfart Y, Steinmetz I, Bast A. Heme Oxygenase-1 and Carbon Monoxide Promote Burkholderia pseudomallei Infection. J Immunol. 2016 Aug 1;197(3):834-46. doi: 10.4049/jimmunol.1403104. Epub 2016 Jun 17. PubMed PMID: 27316684.
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1.71 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Cytochrome c*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 5

Colin J, Wiseman B, Switala J, Loewen PC, Ivancich A. *Distinct role of specific tryptophans in facilitating electron transfer or as [Fe(IV)=O Trp(*)] intermediates in the peroxidase reaction of Bulkholderia pseudomallei catalase-peroxidase: a multifrequency EPR spectroscopy investigation*. J Am Chem Soc. 2009 Jun 24;131(24):8557-63. doi: 10.1021/ja901402v. PubMed PMID: 19530730. https://www.ncbi.nlm.nih.gov/pubmed/19530730

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1.72 SCIENTIFIC PAPERS ABOUT THE RELATIONS BETWEEN BURKHOLDERIA, IRON AND REACTIVE OXYGEN SPECIES (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Reactive Oxygen Species*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+REACTIVE+OXYGEN+SPECIES

Sort by: Most Recent - Search results = Items: 12

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1.73 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN BURKHOLDERIA, IRON AND MELIOIDOSIS (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Burkholderia*", "*Iron*" and "*Melioidosis*" (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=BURKHOLDERIA+IRON+MELIOIDOSIS

Sort by: Most Recent - Search results = Items: 25

Among the results of the research **some significant scientific papers** have been chosen:

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BIBLIOGRAPHY ON HELIGMOSOMOIDES POLYGYRUS

1. 74 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN INSULIN AND HELIGMOSOMOIDES POLYGYRUS (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Insulin*" and "*Heligmosomoides polygyrus*".

https://www.ncbi.nlm.nih.gov/pubmed/?term=INSULIN+HELIGMOSOMOIDES+POLYGYRUS

Sort by: Most Recent - Search results = Items: 5

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1.75 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND IMMUNE SYSTEM (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Links** redirect to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Heligmosomoides polygyrus*" and "*Immune system"*.

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+IMMUNE+SYSTEM

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Because of the great number of scientific papers on this subject, it has been necessary to narrow the field of investigation and pick **only the most significant ones** by inserting **more specific terms.** (**Please note:** the articles already mentioned will not be mentioned again).

1) "*Heligmosomoides polygyrus*, *Immune system*, ***TH2***, ***CD4***, ***IL-4"***:

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+IMMUNE+SYSTEM+TH2+CD4+IL+4

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https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+IMMUNE+SYSTEM+GLUCOSE

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1.76 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND APOPTOSIS (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

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https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+APOPTOSIS

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1.77 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND PULMONARY INFECTIONS (A SELECTION OF THE *MOST RECENT* CORRESPONDENCES)

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1.78 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND PULMONARY INFECTIONS (A SELECTION OF THE *BEST* CORRISPONDENCES)

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Sort by: Best Match - Search results = Items: 21

Ovington KS, Behm CA. *The enigmatic eosinophil: investigation of the biological role of eosinophils in parasitic helminth infection*. Mem Inst Oswaldo Cruz. 1997;92 Suppl 2:93-104. Review. PubMed PMID: 9698920. https://www.ncbi.nlm.nih.gov/pubmed/9698920

Naradikian MS, Myles A, Beiting DP, Roberts KJ, Dawson L, Herati RS, Bengsch B, Linderman SL, Stelekati E, Spolski R, Wherry EJ, Hunter C, Hensley SE, Leonard WJ, Cancro MP. *Cutting Edge: IL-4, IL-21, and IFN-γ Interact To Govern T-bet and CD11c Expression in TLR-Activated B Cells*. J Immunol. 2016 Aug 15;197(4):1023-8. doi: 10.4049/jimmunol.1600522. Epub 2016 Jul 18. PubMed PMID: 27430719; PubMed Central PMCID: PMC4975960. https://www.ncbi.nlm.nih.gov/pubmed/27430719

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1.79 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND DIABETES (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Heligmosomoides polygyrus*" and "*Diabetes"* (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+DIABETES

Sort by: Most Recent - Search results = Items: 5

Osada Y, Yamada S, Nabeshima A, Yamagishi Y, Ishiwata K, Nakae S, Sudo K, Kanazawa T. *Heligmosomoides polygyrus infection reduces severity of type 1 diabetes induced by multiple low-dose streptozotocin in mice via STAT6- and IL-10-independent mechanisms*. Exp Parasitol. 2013 Oct;135(2):388-96. doi: 10.1016/j.exppara.2013.08.003. Epub 2013 Aug 19. PMID: 23968688.
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1.80 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND OBESITY (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Heligmosomoides polygyrus*" and "*Obesity"* (**Please note:** the articles already mentioned will not be mentioned again).

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+OBESITY

Sort by: Most Recent - Search results = Items: 2

Wong T, Hildebrandt MA, Thrasher SM, Appleton JA, Ahima RS, Wu GD. *Divergent metabolic adaptations to intestinal parasitic nematode infection in mice susceptible or resistant to obesity*. Gastroenterology. 2007 Dec;133(6):1979-88. Epub 2007 Sep 14. DOI: 10.1053/j.gastro.2007.09.006. PMCID: PMC2180166. PMID: 18054569.
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1.81 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND CYTOCHROME C (A SELECTION OF THE *MOST RECENT* CORRISPONDENCES)

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) about the *most recent* correspondences between the terms "*Heligmosomoides polygyrus*" and "*Cytochrome c"*.

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+CYTOCHROME+C

Sort by: Most Recent - Search results = Items: 2

Cable J, Harris PD, Lewis JW, Behnke JM. *Molecular evidence that Heligmosomoides polygyrus from laboratory mice and wood mice are separate species*. Parasitology. 2006 Jul;133(Pt 1):111-22. Epub 2006 Mar 15. PubMed PMID: 16536883.
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Preston CM, Barrett J. *Heligmosomoides polygyrus: peroxidase activity*. Exp Parasitol. 1987 Aug;64(1):24-8. PubMed PMID: 3609227. https://www.ncbi.nlm.nih.gov/pubmed/3609227

1.82 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND IRON

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) in which the terms "*Heligmosomoides polygyrus*" and "*Iron"* appear together.

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+IRON

Minkus TM, Koski KG, Scott ME. *Marginal zinc deficiency has no effect on primary or challenge infections in mice with Heligmosomoides polygyrus (Nematoda).* J Nutr. 1992 Mar;122(3):570-9. PMID: 1542014

1.83 SCIENTIFIC PAPERS ABOUT THE RELATIONSHIPS BETWEEN HELIGMOSOMOIDES POLYGYRUS AND PSEUDOMONAS

The following **Link** redirects to a bibliographic research (on every **scientific paper** published on **PubMed**) in which the terms "*Heligmosomoides polygyrus*" and "*Pseudomonas"* appear together.

https://www.ncbi.nlm.nih.gov/pubmed/?term=HELIGMOSOMOIDES+POLYGYRUS+PSEUDOMONAS

Search results = Items: 1

Przyjalkowski Z, Wescott RB. *Effect of bacterial infection on the development of Nematospiroides dubius in gnotobiotic mice*. Bull Acad Pol Sci Biol. 1969; 17(1):57-60. PMID: 5399483.

END 1st CHAPTER (First Part)

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9 Jenuary 2018