



Человек должен верить,
что непонятное можно
понять; иначе он не стал
бы размышлять о нем...



Deoxyribonucleic acid (DNA) is a nucleic acid that occurs in the genetic material of all known living organisms. It is the main carrier of genetic information. DNA is often compared to a set of instructions needed to construct other molecules, such as proteins, and RNA codes for the synthesis of these molecules. The DNA segments that carry the genetic information are called genes, but other DNA sequences have structural purposes, or are involved in regulating the use of the genetic information.

Chemically, DNA consists of two long polymers of single units called nucleotides. These two strands run in opposite directions to one another and are therefore anti-parallel. Each nucleotide sugar is one of four types of molecules called bases, which encode the sequence of these four bases, the basis for the genetic code. Each specific sequence of the amino acids within proteins. The information is copied into RNA in a process called transcription.

Within cells, DNA is organized into highly structured units called chromosomes. These chromosomes are replicated before cells divide in a process called cell replication. Eukaryotic organisms, animals, plants, fungi, and protists store most of their DNA inside their cell nuclei and some of their DNA in organelles, such as mitochondria or chloroplasts. In contrast, most prokaryotes (bacteria and archaea) store their DNA only in the cytoplasm. Within the chromosomes, chromatin proteins such as histones compact and organize DNA. These compact structures guide the interactions between DNA and other proteins, helping to control which parts of the DNA are transcribed.

...the first published report of the structure of DNA was in 1953, by James Watson and Francis Crick. The structure of DNA is a double helix, with two strands of DNA running in opposite directions to one another. The strands are held together by hydrogen bonds between the nitrogenous bases of the two strands. The bases are of four types: adenine, thymine, guanine, and cytosine. Adenine pairs with thymine, and guanine pairs with cytosine. The sequence of these four bases, the basis for the genetic code, is the basis for the genetic code. Each specific sequence of the amino acids within proteins. The information is copied into RNA in a process called transcription.

DNA exists in many forms, including A-DNA, B-DNA, and Z-DNA. The B-DNA form is the most common, and is a right-handed helix. The A-DNA form is a compact, wide, shallow helix. The Z-DNA form is a narrow, zig-zag helix. The structure of DNA is a double helix, with two strands of DNA running in opposite directions to one another. The strands are held together by hydrogen bonds between the nitrogenous bases of the two strands. The bases are of four types: adenine, thymine, guanine, and cytosine. Adenine pairs with thymine, and guanine pairs with cytosine. The sequence of these four bases, the basis for the genetic code, is the basis for the genetic code. Each specific sequence of the amino acids within proteins. The information is copied into RNA in a process called transcription.

The first published report of the structure of DNA was in 1953, by James Watson and Francis Crick. The structure of DNA is a double helix, with two strands of DNA running in opposite directions to one another. The strands are held together by hydrogen bonds between the nitrogenous bases of the two strands. The bases are of four types: adenine, thymine, guanine, and cytosine. Adenine pairs with thymine, and guanine pairs with cytosine. The sequence of these four bases, the basis for the genetic code, is the basis for the genetic code. Each specific sequence of the amino acids within proteins. The information is copied into RNA in a process called transcription.

ПРИСТУПАЯ К ПРОВЕДЕНИЮ НАУЧНОГО ИССЛЕДОВАНИЯ



Выбор научного направления и темы исследования

- Анализ имеющихся данных литературы
- Формулировка гипотезы
- Определение предмета, объекта исследования, цели и задач
- Определение материала и методов исследования
- Планирование этапов научной работы [эксперимента]



Проведение научного исследования

- Организация условий проведения исследования
- Осуществление запланированных подходов к изучению в соответствии с поставленной целью и задачами исследования



Анализ и интерпретация данных, оформление работы [опубликование]

- Обобщение и систематизация полученных данных, статистическая обработка
- Представление результатов в общепринятом и доступном

виде

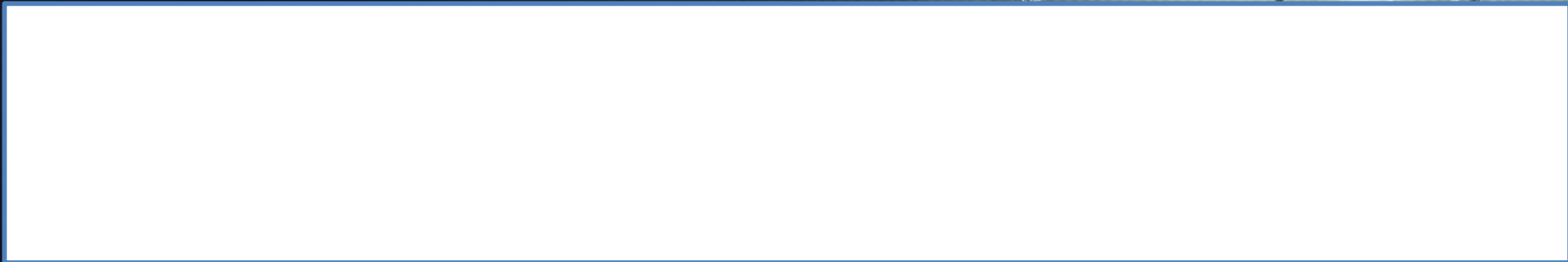
АНАЛИЗ НАУЧНОЙ ЛИТЕРАТУРЫ

Количество научных рецензируемых журналов > 35000 (2014 год)



Количество статей ежегодно > 1 500 000 (2014 год)

+ монографии, диссертации, патенты и т.д.



ПРИОРИТЕТЫ



Монографии, обзорные
статьи

Статьи в журналах с высоким
импакт-фактором

Соответствие ключевым
словам
поиска

DO YOU SPEAK ENGLISH?

ИМПАКТ-ФАКТОР НАУЧНЫХ ЖУРНАЛОВ

<http://www.scimagojr.com/>

Scimago Journal & Country Rank Enter Journal

Home Journal Rankings Country Rankings Viz Tools Help About Us

All subject areas All subject categories All regions / countries All types 2015

Display only Open Access Journals Display journals with at least 0 Citable Docs. (3years) Apply

Download data

1 - 50 of 29713

Title	Type	↓ SJR	H index	Total Docs. (2015)	Total Docs. (3years)	Total Refs.	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc.	
1 Nature Reviews Molecular Cell Biology	journal	32.928 Q1	324	170	539	8084	7978	202	37.10	47.55	
2 Annual Review of Immunology	journal	32.720 Q1	254	26	74	5684	2937	74	35.72	218.62	
3 Nature Reviews Genetics	journal	32.615 Q1	267	157	676	6584	8171	212	36.13	41.94	
4 CA - A Cancer Journal for Clinicians	journal	32.242 Q1	117	43	139	3741	8650	117	80.54	87.00	
5 Cell	journal	28.188 Q1	616	651	1794	25257	40673	1626	23.40	38.80	
6 Annual Review of Astronomy and Astrophysics	journal	27.065 Q1	138	16	41	3575	1373	40	35.04	223.44	
7 Nature Reviews Immunology	journal	26.850 Q1	292	163	551	7895	7353	195	39.23	48.44	

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<http://elibrary.ru/>

РИНЦ
Российский
Индекс
Научного
Цитирования

НАУЧНАЯ ЭЛЕКТРОННАЯ БИБЛИОТЕКА LIBRARY.RU

РЕЗУЛЬТАТЫ ПОИСКОВОГО ЗАПРОСА

ВСЕГО НАЙДЕНО ПУБЛИКАЦИЙ: 2493 из 23405113

№	Публикация	Цит.
1	К ВОПРОСУ О ТИМУСЕ, СВЯЗАННОЙ С НИМ ТЕРМИНОЛОГИИ И СОСТОЯНИИ ЗДОРОВЬЯ ДЕТЕЙ С БОЛЬШИМ ТИМУСОМ <i>Кузьменко Л.Г., Смылова З.В., Киселева Н.М., Быстрова О.В., Агарвал Р.К.</i> Журнал научных статей Здоровье и образование в XXI веке. 2015. Т. 17. № 4. С. 97-107.	0
2	ВЛИЯНИЕ ЛОКАЛЬНОГО ОБЛУЧЕНИЯ ОБЛАСТЕЙ ТИМУСА, ГИПОТАЛАМУСА/ГИПОФИЗА И ГОНАД МЫШЕЙ НА КЛЕТОЧНОСТЬ АУТОЛОГИЧНОГО И ТРАНСПЛАНТИРОВАННОГО ТИМУСА <i>Савина Н.П., Ярилин А.А.</i> Радиационная биология. Радиоэкология. 1995. Т. 35. № 4. С. 486-493.	11
3	ВЛИЯНИЕ ГИПОКСИИ НА ПРОЦЕСС ВАСКУЛОГЕНЕЗА В ТИМУСАХ У ДЕТЕЙ ПЕРВОГО ГОДА ЖИЗНИ <i>Лопинова Н.П., Четвертных В.А., Хромцова Г.А., Даракчан Г.А.</i> Современные проблемы науки и образования. 2015. № 5. С. 222.	0
4	ВАРИАБЕЛЬНОСТЬ ФОРМЫ ТИМУСА В ПЛОДНОМ И РАННЕМ НЕОНАТАЛЬНОМ ПЕРИОДАХ ОНТОГЕНЕЗА ЧЕЛОВЕКА <i>Хиара Т.В., Галичанская О.Н.</i> Медицинский журнал Западного Казахстана. 2013. № 4. С. 13-17.	0
5	ТРОПНОСТЬ АКАНТАМЕБЫ ШТАММА СДНТ К ТИМУСУ МЫШИ И ЕЕ ИММУНОМОДУЛИРУЮЩЕЕ ДЕЙСТВИЕ IN VIVO <i>Комогорова В.В., Латышев С.В., Литвина М.М., Шевелев С.В., Ярилин А.А.</i> Иммунология. 2008. Т. 29. № 6. С. 324-329.	2
6	ВЛИЯНИЕ Р-КАРОТИНА НА ИММУННЫЙ СТАТУС ДЕТЕЙ С УДАЛЕННЫМ ТИМУСОМ <i>Фроленко А.П., Смолягин А.И.</i> Вопросы современной педиатрии. 2011. Т. 10. № 5. С. 98-101.	2
7	ЗАЩИТА МЕЖТРАХЕАЛЬНОГО И ЛАРИНГОТРАХЕАЛЬНОГО АНАСТОМОЗОВ ТИМУСОМ НА СОСУДИСТОЙ НОЖКЕ <i>Татур А.А., Леонювич С.И., Гончаров А.А.</i> Военная медицина. 2007. № 3 (4). С. 49-52.	0
8	АНИМАЛИСТИЧЕСКАЯ СКУЛЬПТУРА ИМПЕРАТОРСКОГО ФАРФОРОВОГО ЗАВОДА: А. ТИМУС <i>Хмельницкая Е.С.</i> В мире научных открытий. 2013. № 9.2 (45). С. 388-400.	0
9	ПАРАТИРЕОИДЭКТОМИЯ ЭКТОПИРОВАННОЙ В ТИМУС ПАРАЩИТОВИДНОЙ ЖЕЛЕЗЫ У БОЛЬНОГО, СТРАДАЮЩЕГО ВТОРИЧНЫМ ГИПЕРПАРАТИРЕОЗОМ <i>Щеголев А.А., Ларин А.А., Колут О.Б., Осипович Б.А.</i> Земский врач. 2013. № 4. С. 59-62.	0
10	ВИЛОЧКОВАЯ ЖЕЛЕЗА /ТИМУС/ В ОНТОГЕНЕЗЕ УТОК И ЕЕ РЕАКЦИИ НА НЕКОТОРЫЕ ВОЗДЕЙСТВИЯ <i>Пилипенко М.Е.</i> автореферат диссертации на соискание ученой степени доктора ветеринарных наук / Харьковский зооветеринарный институт. Харьков, 1975	5

Возможные действия

- Следующая страница
- Выделить все публикации на этой странице
- Снять выделение
- Добавить выделенные статьи в подборку:

Новая подборка

- Добавить все страницы с результатами поиска в указанную выше подборку
- Вернуться к поисковой форме и изменить условия запроса
- Создать новый поисковый запрос
- Продолжить поиск среди найденных результатов
- Вывести список моих публикаций
- Вывести список публикаций, ссылающихся на мои работы
- Вывести список ссылок на мои публикации
- Анализ публикационной активности автора

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<https://scholar.google.com/>

Поиск Картинки Ещё...

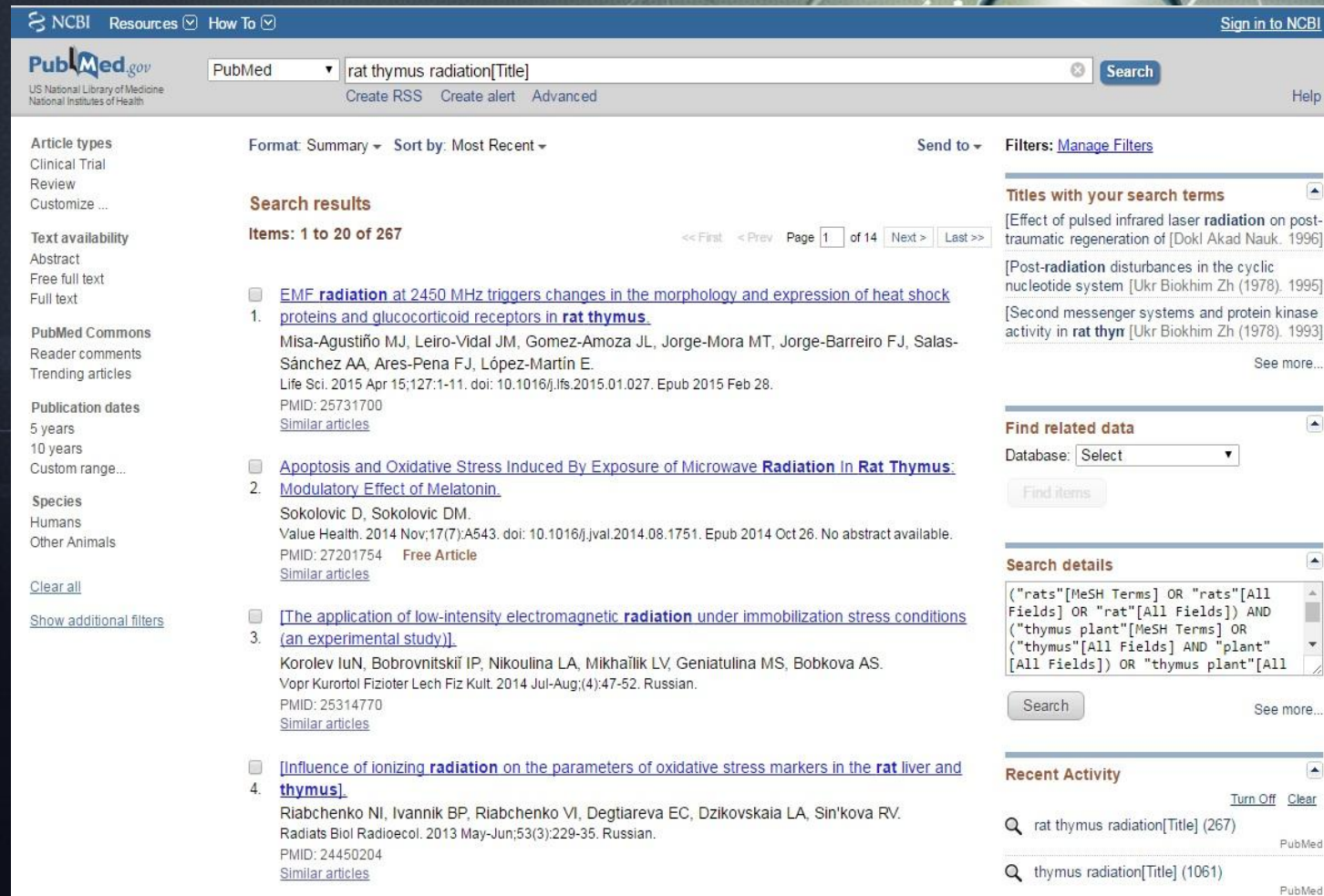
Google аутоиммунное воспаление 🔍

Академия Результаты: примерно 12 700 (0,06 сек.)

Статьи	[PDF] Перспективы развития ревматологии в XXI веке ЕЛ Насонов - РМЖ, 2001 - gosbook.ru	[PDF] gosbook.ru
Моя Библиотека	... Основной механизм - хроническое аутоиммунное воспаление ■ Характерный симптом – боль в суставах ... Высокая летальность • Воспаление •Коморбидность Page 6. Майкл Джексон, волчанка и аутоиммунные болезни Кетлин Тернер и ревматоидный артрит ...	
За все время	Цитируется: 31 Похожие статьи Все версии статьи (6) Цитировать Сохранить Ещё	
С 2016	[HTML] Миокардиты НР Палеев, ФН Палеев, НП Санина - Альманах клинической ..., 2004 - cyberleninka.ru	[HTML] cyberleninka.ru
С 2015	... а также возникающие при аллергических и аутоиммунных заболеваниях. ... основными признаками этого заболевания инфекционное начало, воспаление миокарда, острые ...	
С 2012	системы мышечной клетки, а также вызывает аутоиммунное поражение различных ...	
Выбрать даты	Цитируется: 42 Похожие статьи Цитировать Сохранить Ещё	
По релевантности	[HTML] Цитокиновая сеть как мишень системной энзимотерапии ГЮ Кнорринг - ЖурналЦитокины и воспаление , 2016 - cytokines.ru	[HTML] cytokines.ru
По дате	... снижать активность иммуновоспалительного процесса при аутоиммунных и иных ... у человека, включая процессы воспалительной, аутоиммунной и онкологической ... являются решающими факторами для развития хронического или аутоиммунного воспаления	
<input checked="" type="checkbox"/> включая патенты	Цитируется: 24 Похожие статьи Все версии статьи (5) Цитировать Сохранить Ещё	
<input type="checkbox"/> показать цитаты	[HTML] Механизмы воспалительной реакции и воздействие на них с помощью протеолитических энзимов М Лысикова, М Вальд, З Масиновски - ... Цитокины и воспаление , 2016 - cytokines.ru	[HTML] cytokines.ru
<input checked="" type="checkbox"/> Создать оповещение	... хроническое воспаление или даже начинающееся аутоиммунное заболевание вызывают ... Воспаление относится к филогенетически старейшим типам защитной ... физический (излучение, травма), иммунологический (аутоиммунные заболевания), химический или ...	
	Цитируется: 61 Похожие статьи Все версии статьи (4) Цитировать Сохранить Ещё	
	[HTML] Метаболический синдром у больных системной красной волчанкой ТВ Попкова, ДС Новикова, ЕВ Герасимова... - Научно- ..., 2008 - cyberleninka.ru	[HTML] cyberleninka.ru
	... Предполагается, что аутоиммунное воспаление играет ведущую роль в формировании МС у ... концентрации ХС ЛВП на фоне высокой активности аутоиммунного процесса связано со ... основная роль в развитии МС и ССЗ принадлежит аутоиммунному воспалению	
	Цитируется: 3 Похожие статьи Все версии статьи (4) Цитировать Сохранить Ещё	

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<https://www.ncbi.nlm.nih.gov/pubmed/>



The screenshot displays the PubMed search interface. At the top, the NCBI logo and navigation links are visible. The search bar contains the query 'rat thymus radiation[Title]'. Below the search bar, there are options for 'Create RSS', 'Create alert', and 'Advanced'. The main content area shows search results for 'rat thymus radiation', with 267 items found. The results are listed in a table with columns for article type, format, and sort order. The first four results are displayed, each with a checkbox, a title link, and a brief description of the article. The right sidebar contains filters for 'Titles with your search terms', 'Find related data', 'Search details', and 'Recent Activity'.

NCBI Resources How To Sign in to NCBI

PubMed.gov
US National Library of Medicine
National Institutes of Health

PubMed Search

Create RSS Create alert Advanced Help

Article types
Clinical Trial
Review
Customize ...

Text availability
Abstract
Free full text
Full text

PubMed Commons
Reader comments
Trending articles

Publication dates
5 years
10 years
Custom range...

Species
Humans
Other Animals

Clear all

Show additional filters

Format: Summary Sort by: Most Recent Send to Filters: Manage Filters

Search results

Items: 1 to 20 of 267 << First < Prev Page 1 of 14 Next > Last >>

[EMF radiation at 2450 MHz triggers changes in the morphology and expression of heat shock proteins and glucocorticoid receptors in rat thymus.](#)
1. Misa-Agustiño MJ, Leiro-Vidal JM, Gomez-Amoza JL, Jorge-Mora MT, Jorge-Barreiro FJ, Salas-Sánchez AA, Ares-Pena FJ, López-Martín E. Life Sci. 2015 Apr 15;127:1-11. doi: 10.1016/j.lfs.2015.01.027. Epub 2015 Feb 28. PMID: 25731700 [Similar articles](#)

[Apoptosis and Oxidative Stress Induced By Exposure of Microwave Radiation In Rat Thymus: Modulatory Effect of Melatonin.](#)
2. Sokolovic D, Sokolovic DM. Value Health. 2014 Nov;17(7):A543. doi: 10.1016/j.jval.2014.08.1751. Epub 2014 Oct 26. No abstract available. PMID: 27201754 [Free Article](#) [Similar articles](#)

[\[The application of low-intensity electromagnetic radiation under immobilization stress conditions \(an experimental study\)\].](#)
3. Korolev IuN, Bobrovnikskii IP, Nikoulina LA, Mikhaïlik LV, Geniatulina MS, Bobkova AS. Vopr Kurortol Fizioter Lech Fiz Kult. 2014 Jul-Aug;(4):47-52. Russian. PMID: 25314770 [Similar articles](#)

[\[Influence of ionizing radiation on the parameters of oxidative stress markers in the rat liver and thymus\].](#)
4. Riabchenko NI, Ivannik BP, Riabchenko VI, Degtiareva EC, Dzikovskaia LA, Sin'kova RV. Radiats Biol Radioecol. 2013 May-Jun;53(3):229-35. Russian. PMID: 24450204 [Similar articles](#)

Titles with your search terms

[Effect of pulsed infrared laser radiation on post-traumatic regeneration of [Dokl Akad Nauk. 1996]

[Post-radiation disturbances in the cyclic nucleotide system [Ukr Biokhim Zh (1978). 1995]

[Second messenger systems and protein kinase activity in rat thym [Ukr Biokhim Zh (1978). 1993]

See more...

Find related data

Database: Select

Find items

Search details

("rats"[MeSH Terms] OR "rats"[All Fields] OR "rat"[All Fields]) AND ("thymus plant"[MeSH Terms] OR "thymus"[All Fields] AND "plant"[All Fields]) OR "thymus plant"[All Fields]

Search See more...

Recent Activity

Turn Off Clear

Q rat thymus radiation[Title] (267) PubMed

Q thymus radiation[Title] (1061) PubMed

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<https://doaj.org/>

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS SUPPORT DOAJ

Home Search Browse Subjects Apply News About For Publishers API

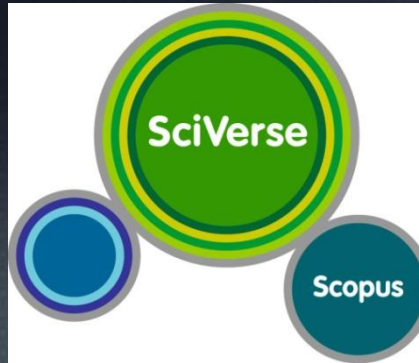
share | embed 10 order by ... relevance Title

1 – 10 of 390 →

- Elimination of self-reactive T cells in the thymus: a timeline for negative selection.**
Ivan Liliyanov Dzhagalov, Katherine Grace Chen, Paul Herzmark, Ellen A Robey
PLoS Biology. 2013;11(5):e1001566 DOI 10.1371/journal.pbio.1001566
[Abstract](#) | [Full Text](#)
- Chemical variation of leaf essential oil at different stages of plant growth and in vitro antibacterial activity of *Thymus vulgaris* Lamiaceae, from Iran**
Azizollah Nezhadali, Marzyeh Nabavi, Majid Rajabian, Mina Akbarpour, Parastoo Pourali, Fatemeh Amini
Beni-Suef University Journal of Basic and Applied Sciences. 2014;3(2):87-92 DOI 10.1016/j.bjbas.2014.05.001
[Abstract](#) | [Full Text](#)
- Is there a role for extracellular matrix in thymus physiology and pathology?**
Wilson Savino, Joseli Lannes Vieira
Memórias do Instituto Oswaldo Cruz. 1991;86:91-97 DOI 10.1590/S0074-02761991000700013
[Full Text](#)
- Chemical Composition, Antioxidant Capacity, Acetyl- and Butyrylcholinesterase Inhibitory Activities of the Essential Oil of *Thymus haussknechtii* Velen.**
Handan G. Sevindik, Temel Özek, K. Özden Yerdelen, Mehmet Önal, Hilal Özbek, Zühal Güvenalp, L. Ömür Demirezer
Records of Natural Products. 2016;10(4):503-507
[Abstract](#) | [Full Text](#)
- Gap junction modulation by extracellular signaling molecules: the thymus model**
Alves L.A., Nihei O.K., Fonseca P.C., Campos-de-Carvalho A.C., Savino W.
Brazilian Journal of Medical and Biological Research. 2000;33(4):457-465
[Abstract](#) | [Full Text](#)

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<https://scopus.com/>



<https://webofscience.com/>




<http://www.sciencedirect.com/>

<http://www.scienceresearch.com/>

НАУКОМЕТРИЧЕСКИЕ БАЗЫ ДАННЫХ

<http://sci-hub.cc/>

Поиск по DOI (digital object identifier)



SCI-HUB

...устраняя преграды на пути распространения знаний

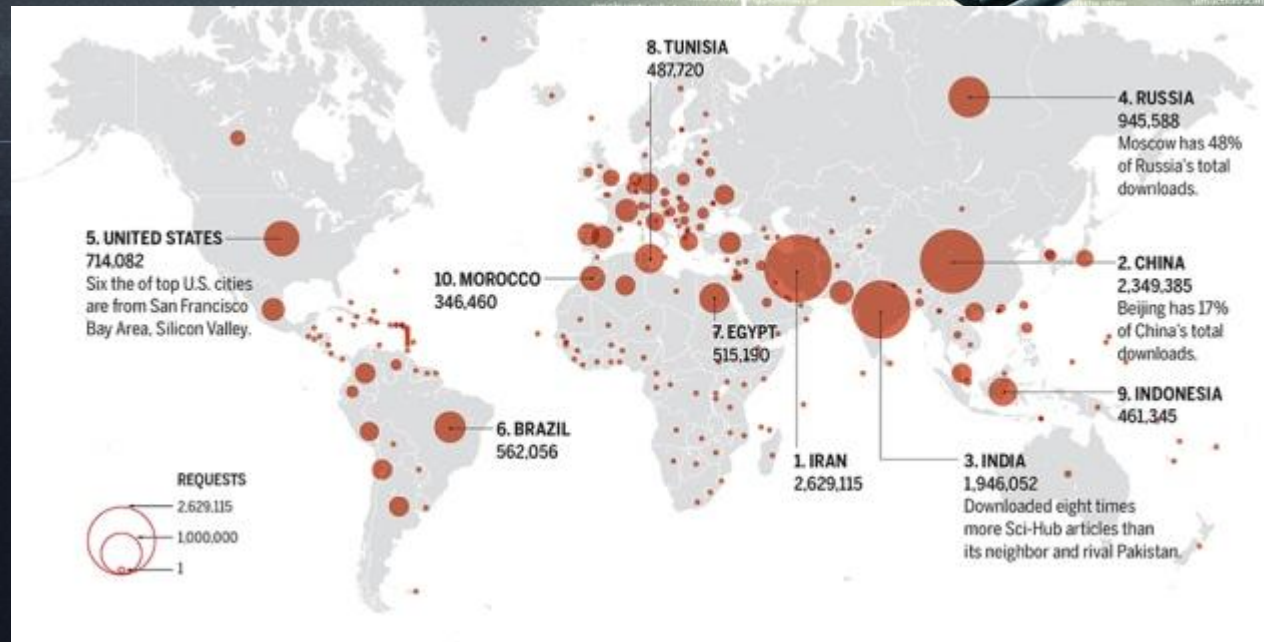
doi:10.1038/nature14579

открыть

о проекте
узнай, за что мы боремся

сообщество
вступай в ряды единомышленников

финансовая поддержка
помоги собрать средства для победы над копирайтом



S

[specific]
КОНКРЕТНАЯ

M

[measurable]
ИЗМЕРИМАЯ

A

[achievable]
ДОСТИЖИМАЯ

R

[relevant]
АКТУАЛЬНАЯ

T

[time-bound] ОГРАНИЧЕННАЯ ВО
ВРЕМЕНИ

random][plasmid

Deoxyribonucleic acid (DNA) is a nucleic acid that carries the genetic information used in the development and functioning of all known living organisms and many viruses. DNA is a long molecule that contains the instructions needed to construct other molecules of the cell, such as proteins, and RNA molecules. The basic segments that carry this genetic information are called genes, but other DNA sequences have structural purposes, or are involved in regulating the use of this genetic information.

Chemically, DNA consists of two long polymers of simple units called nucleotides. These units are made of sugars and phosphate groups joined by ester bonds. These two strands run in opposite directions to one another and are therefore anti-parallel. Attached to each sugar is one of four types of molecules called bases, which encode the information. This information is read using the genetic code, which specifies the sequence of the amino acids within proteins. The bases are joined by copying stretches of DNA into the related molecule RNA, in a process called transcription.

Within cells, DNA is organized into highly structured units called chromosomes. These chromosomes are self-replicating, and are duplicated before cells divide in a process called cell replication. Eukaryotic organisms (animals, plants, fungi, and protists) store most of their DNA inside their cell nuclei and some of their DNA in organelles, such as mitochondria or chloroplasts. In contrast, most prokaryotes (bacteria and archaea) store their DNA only in the cytoplasm. Within the chromosomes, chromatin proteins such as histones compact and organize DNA. These compact structures guide the interactions between DNA and other proteins, helping control which parts of the DNA are transcribed.

FILE:EMB01308

DNA exists in many forms, including A-DNA, B-DNA, and Z-DNA. The B-DNA is the most common form, and is a right-handed helix. The A-DNA is a compact, wide, and shallow helix, and the Z-DNA is a narrow, deep, and sharp helix. The B-DNA is the most common form, and is a right-handed helix. The A-DNA is a compact, wide, and shallow helix, and the Z-DNA is a narrow, deep, and sharp helix.

The first published report of DNA was in 1869, by Friedrich Miescher. He called it "nuclein" and was the first to describe its chemical composition. In 1928, Oswald Avery, Colin MacLeod, and McCarty demonstrated that DNA is the transforming principle. In 1953, James Watson and Francis Crick proposed the structure of DNA as a double helix. The structure of DNA was confirmed by Rosalind Franklin and Maurice Wilkins in 1952. The structure of DNA was confirmed by Watson and Crick in 1953.

Watson and Crick's model of DNA was based on the work of other scientists, including Rosalind Franklin and Maurice Wilkins. Their model was a double helix, with the sugar-phosphate backbone on the outside and the nitrogenous bases on the inside. The bases are paired with each other, and the pairs are connected by hydrogen bonds. The structure of DNA is a double helix, with the sugar-phosphate backbone on the outside and the nitrogenous bases on the inside.

Continued to B-DNA, the most common form of DNA. The B-DNA is a right-handed helix, with a diameter of 2.37 nm. The distance between two adjacent base pairs is 0.34 nm. The structure of DNA is a double helix, with the sugar-phosphate backbone on the outside and the nitrogenous bases on the inside.

Будьте
успешны!

random][plasmid

Deoxyribonucleic acid (DNA) is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms. The basic building block of DNA molecules is the nitrogenous nucleotide. DNA is often compared to a set of blueprints or a recipe, or a code, which contains the instructions needed to construct other molecules of the cell, such as proteins, and RNA molecules. The DNA segments that carry the genetic information are called genes, but other DNA sequences have structural purposes, or are involved in regulating the use of the genetic information.

Chemically, DNA consists of two long polymers of simple units called nucleotides. These units are made of sugars and phosphate groups joined by ester bonds. These two strands run in opposite directions to one another and are therefore anti-parallel. Attached to each sugar is one of four types of molecules called bases, which encode information. This information is read using the genetic code, which specifies the sequence of the amino acids within proteins. The bases are paired by copying stretches of DNA into the related molecule RNA, in a process called transcription.

Within cells, DNA is organized into highly structured compact chromosomes. These chromosomes are duplicated before cells divide, in a process called cell replication. Eukaryotic organisms (animals, plants, fungi, and protists) store most of their DNA inside the cell nucleus and some of their DNA in organelles, such as mitochondria or chloroplasts. In contrast, most prokaryotes (bacteria and archaea) store their DNA only in the cytoplasm. Within the chromosomes, chromatin proteins such as histones compact and organize DNA. These compact structures guide the interactions between DNA and other proteins, helping to control which parts of the DNA are transcribed.

DNA exists in many forms, including A-DNA, B-DNA, and Z-DNA, with B-DNA and Z-DNA being the most common. Functional differences in the way DNA is packaged on the chromosome and the way it is packaged in the nucleus of eukaryotes, as well as in the nucleus of prokaryotes, are also observed.

The first published report of DNA was in 1869, when Friedrich Miescher discovered a substance he called "nuclein" in the nuclei of white blood cells. The structure of DNA was first described in 1953 by James Watson and Francis Crick, with the help of Rosalind Franklin and Maurice Wilkins. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases.

Although the B-DNA helix is the most common form of DNA, it is not the only form. Other forms of DNA include A-DNA, Z-DNA, and H-DNA. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases.

DNA exists in many forms, including A-DNA, B-DNA, and Z-DNA, with B-DNA and Z-DNA being the most common. Functional differences in the way DNA is packaged on the chromosome and the way it is packaged in the nucleus of eukaryotes, as well as in the nucleus of prokaryotes, are also observed.

The first published report of DNA was in 1869, when Friedrich Miescher discovered a substance he called "nuclein" in the nuclei of white blood cells. The structure of DNA was first described in 1953 by James Watson and Francis Crick, with the help of Rosalind Franklin and Maurice Wilkins. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases.

Although the B-DNA helix is the most common form of DNA, it is not the only form. Other forms of DNA include A-DNA, Z-DNA, and H-DNA. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases.

Consequently, the B-DNA helix is the most common form of DNA, but it is not the only form. Other forms of DNA include A-DNA, Z-DNA, and H-DNA. The structure of DNA is a double helix, with the two strands running in opposite directions to one another and being held together by hydrogen bonds between the bases.