

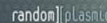
Деление ядер Урана

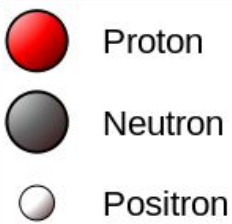
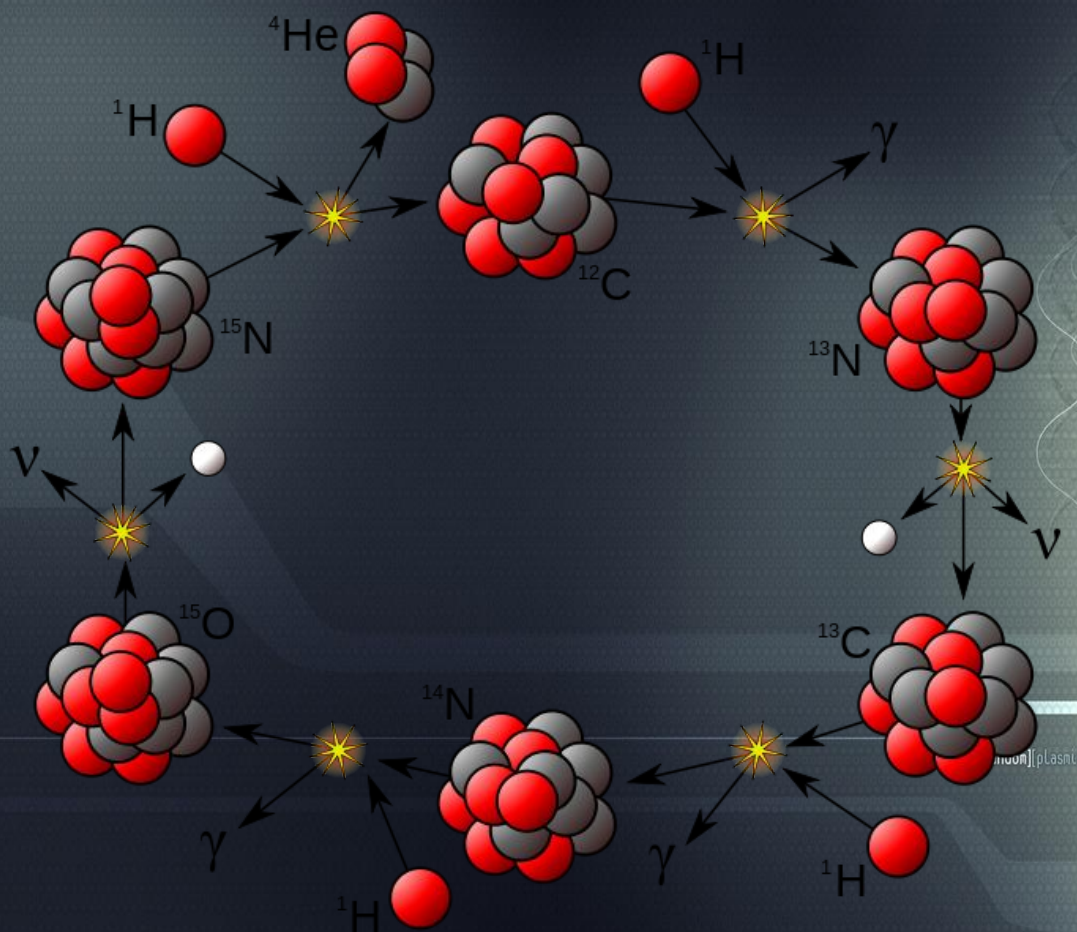
Грачев Виктор,
Федорова
Анастасия,
Калугина Марина,
Тишевский



«Что это?»

- **Деление ядра — это процесс расщепления атомного ядра на два (реже на три) ядра с близкими массами, называемых осколками деления.**





γ Gamma Ray
 ν Neutrino

Deoxyribonucleic acid (DNA) is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms and some viruses. DNA is a long polymer of nucleotides, each consisting of a phosphate group, a deoxyribose sugar, and a nitrogenous base. The sequence of these bases, known as the genetic code, specifies the sequence of the amino acids within proteins. The genetic code is a set of rules by which information encoded in genetic material (DNA or mRNA sequences) is converted into the amino acid sequence of a protein. In a process called transcription, a copy of the DNA sequence is made using the genetic code, which specifies the sequence of the amino acids within proteins. The genetic code is a set of rules by which information encoded in genetic material (DNA or mRNA sequences) is converted into the amino acid sequence of a protein.

Within cells, DNA is organized into very compact structures called chromosomes. These chromosomes are packaged into a nucleus, which is a membrane-bound organelle. The DNA is organized into a double helix structure, with the two strands of the DNA molecule running in opposite directions to each other and are therefore antiparallel. The two strands are held together by hydrogen bonds between the nitrogenous bases. The sequence of these bases, known as the genetic code, specifies the sequence of the amino acids within proteins. The genetic code is a set of rules by which information encoded in genetic material (DNA or mRNA sequences) is converted into the amino acid sequence of a protein.

There are many possible conformations that DNA can adopt, including the A-DNA, B-DNA, and Z-DNA forms. Although the A-DNA, B-DNA, and Z-DNA forms have been observed in nature, the B-DNA form is the most common. The B-DNA form is a right-handed helix with a major groove and a minor groove. The A-DNA form is a compact, wide, and shallow structure. The Z-DNA form is a narrow, zig-zag structure. The DNA molecule is a long polymer of nucleotides, each consisting of a phosphate group, a deoxyribose sugar, and a nitrogenous base. The sequence of these bases, known as the genetic code, specifies the sequence of the amino acids within proteins. The genetic code is a set of rules by which information encoded in genetic material (DNA or mRNA sequences) is converted into the amino acid sequence of a protein.

The first published reports of a DNA X-ray diffraction pattern were published in 1953 by James Watson and Francis Crick. They used the data from Rosalind Franklin and Maurice Wilkins to propose the double helix model of DNA. The double helix model of DNA is a right-handed helix with a major groove and a minor groove. The two strands of the DNA molecule are held together by hydrogen bonds between the nitrogenous bases. The sequence of these bases, known as the genetic code, specifies the sequence of the amino acids within proteins. The genetic code is a set of rules by which information encoded in genetic material (DNA or mRNA sequences) is converted into the amino acid sequence of a protein.

Открытие деления урана

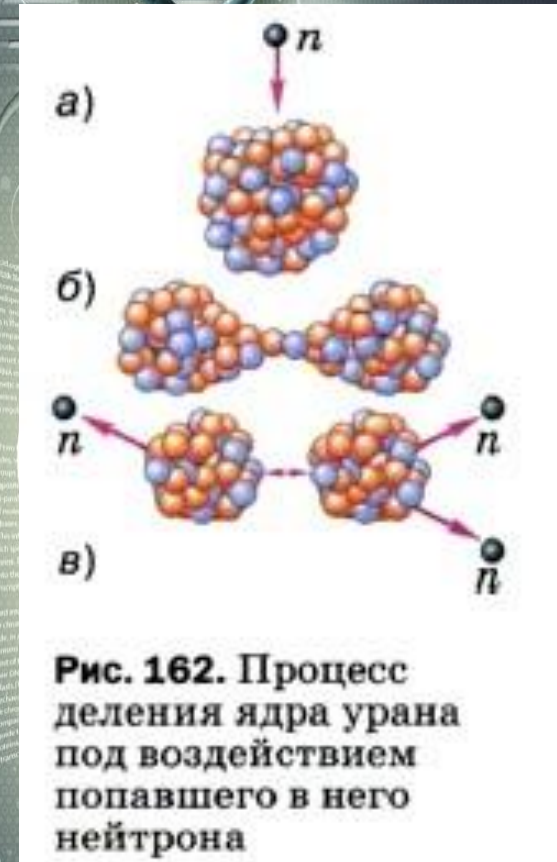
- Деление ядер урана было открыто в 1938 г. немецкими учеными О. Ганом и Ф. Штрассманом. Они установили, что при бомбардировке урана нейтронами возникают элементы средней части периодической системы: барий, криптон и др.

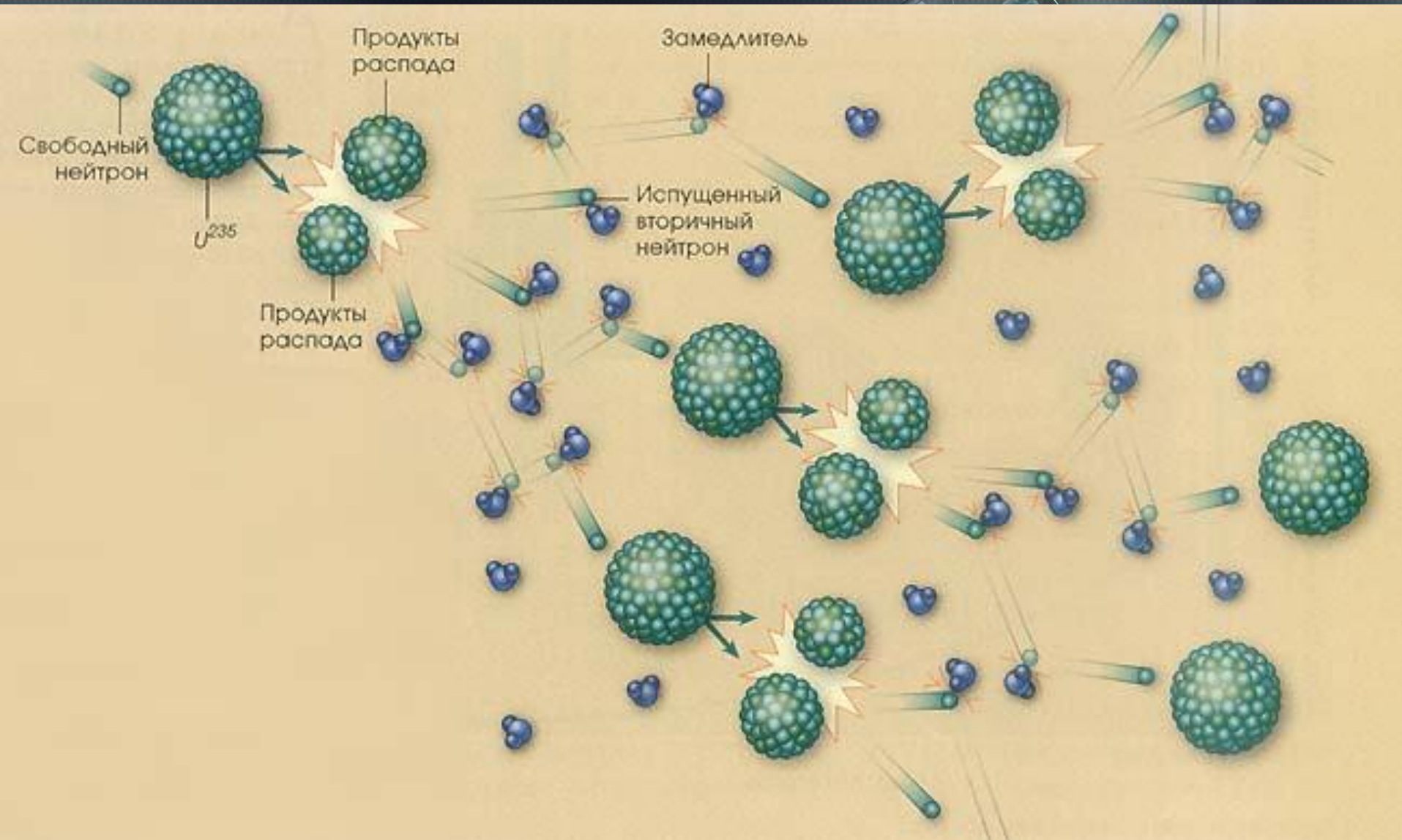
- Однако правильное истолкование этого факта было дано в начале 1939 г. английским физиком О. Фришем совместно с австрийским физиком Л. Мейтнером.



Механизм явления

- Поглощая лишний нейрон, ядро возбуждается и деформируется, приобретая вытянутую форму.
- Под действием электростатических сил отталкивания ядро разрывается на две части, которые разлетаются в разные стороны с огромной скоростью и излучают при этом 2-3 нейтрона.





Действующие силы

Во время всего процесса деления ядер, в нем действуют два вида сил:

- Электростатические силы отталкивания между протонами, стремящиеся разорвать ядро,
- Ядерные силы притяжения между всеми нуклонами, благодаря которым ядро не распадается.

random|p|asin|d

Deoxyribonucleic acid (DNA) is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms and some viruses. DNA is a long molecule that is composed of a sugar-phosphate backbone and nitrogenous bases. The bases are paired in the center of the molecule, forming the double helix structure. The sequence of the bases determines the genetic information. DNA is a polymer of nucleotides, which are the building blocks of the molecule. Each nucleotide consists of a sugar, a phosphate group, and a nitrogenous base. The bases are paired in the center of the molecule, forming the double helix structure. The sequence of the bases determines the genetic information. DNA is a polymer of nucleotides, which are the building blocks of the molecule. Each nucleotide consists of a sugar, a phosphate group, and a nitrogenous base. The bases are paired in the center of the molecule, forming the double helix structure. The sequence of the bases determines the genetic information.

The first published reports of a DNA X-ray diffraction pattern were published in 1953 by James Watson and Francis Crick. They used the data from Rosalind Franklin and Maurice Wilkins to propose the double helix model of DNA. The model shows two strands of DNA, one for each parent, twisted around each other. The strands are connected by nitrogenous bases, which are paired in the center of the molecule. The sequence of the bases determines the genetic information. DNA is a polymer of nucleotides, which are the building blocks of the molecule. Each nucleotide consists of a sugar, a phosphate group, and a nitrogenous base. The bases are paired in the center of the molecule, forming the double helix structure. The sequence of the bases determines the genetic information.

Watson and Crick's DNA model is based on the X-ray diffraction data from Franklin and Wilkins. The data showed a regular, repeating pattern of spots, which indicated a regular, repeating structure. The model shows two strands of DNA, one for each parent, twisted around each other. The strands are connected by nitrogenous bases, which are paired in the center of the molecule. The sequence of the bases determines the genetic information. DNA is a polymer of nucleotides, which are the building blocks of the molecule. Each nucleotide consists of a sugar, a phosphate group, and a nitrogenous base. The bases are paired in the center of the molecule, forming the double helix structure. The sequence of the bases determines the genetic information.

«Но»

- Ядерные силы – короткодействующие, поэтому в вытянутом ядре они уже не могут удержать сильно удаленные друг от друга части ядра.

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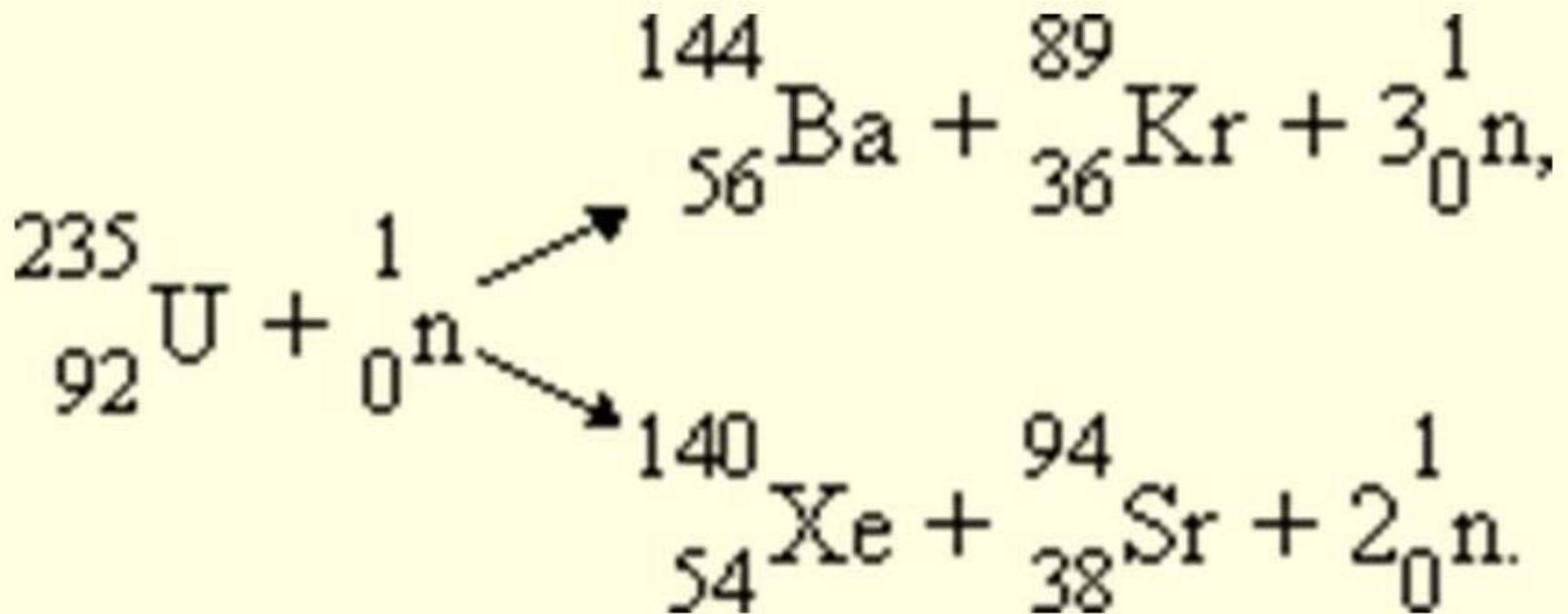
Deoxyribonucleic acid (DNA) is a nucleic acid that contains the genetic instructions used in the development and functioning of all known organisms and many viruses. In some organisms, such as bacteria, DNA is organized into a single circular molecule, while in others, such as eukaryotes, it is organized into multiple linear molecules. DNA is a double helix, consisting of two strands of sugar-phosphate backbone, with nitrogenous bases attached to the sugar. The bases of one strand are paired with the bases of the other strand, forming the rungs of the helix. The sequence of the bases in a DNA molecule encodes the genetic information. The DNA molecule is the primary structure of the genetic code, which is used to synthesize proteins. The DNA molecule is also the primary structure of the genetic code, which is used to synthesize proteins. The DNA molecule is the primary structure of the genetic code, which is used to synthesize proteins.

Chemically, DNA consists of repeating units of nucleotides. Each nucleotide is composed of a phosphate group, a deoxyribose sugar, and a nitrogenous base. The phosphate group is attached to the deoxyribose sugar, which is in turn attached to the nitrogenous base. The nitrogenous bases are of two types: purines (adenine and guanine) and pyrimidines (thymine and cytosine). Adenine and guanine are paired with thymine and cytosine, respectively, forming the rungs of the helix. The sequence of the bases in a DNA molecule encodes the genetic information. The DNA molecule is the primary structure of the genetic code, which is used to synthesize proteins.

Within cells, DNA is organized into long structures called chromosomes. These chromosomes are composed of DNA molecules that are tightly packed together. The DNA molecules are organized into a hierarchical structure, with the DNA molecule being the primary structure, the chromosome being the secondary structure, and the cell being the tertiary structure. The DNA molecule is the primary structure of the genetic code, which is used to synthesize proteins. The chromosome is the secondary structure of the genetic code, which is used to synthesize proteins. The cell is the tertiary structure of the genetic code, which is used to synthesize proteins.

One of the most important properties of DNA is its ability to replicate. Replication is the process by which a DNA molecule is copied, resulting in two identical DNA molecules. This process is essential for the growth and development of all organisms. The DNA molecule is the primary structure of the genetic code, which is used to synthesize proteins. The chromosome is the secondary structure of the genetic code, which is used to synthesize proteins. The cell is the tertiary structure of the genetic code, which is used to synthesize proteins.

Две типичные реакции
деления ядер урана имеют
вид:



Преобразуется:

- Внутренняя энергия ядра переходит в кинетическую энергию разлетающихся осколков и частиц. Осколки быстро тормозятся в окружающей среде, в результате чего их кинетическая энергия преобразуется во внутреннюю энергию среды.
- Таким образом, реакция деления ядер урана идет с выделением энергии в окружающую среду.

random[plasmid]

В заключении:

- Энергия, заключенная в ядрах атомов, колоссальна. К примеру, при полном делении всех ядер, имеющихся в 1 г урана, выделилось бы столько же энергии, сколько выделяется при сгорании 2,5 т нефти.

random | pLanid

Спасибо за внимание

