Elastin

Elastin is a fibrous, hydrophobic protein that is part of the binder. Elastin is one of the scleroproteins that are insoluble in water and polar chemicals. As a result of its presence, the tissue is flexible and elastic. It is composed of a sequence of approximately 750 amino acids, which gives it its characteristic shape.

Proteins form an essential part of the human body. In this article, we will explain what role the protein elastin (from the Greek ``elastos*, elastic) plays in our body.*

This protein is found in significant quantities in the extracellular matrix of the skin and also as part of internal organs (e.g. lungs, blood vessels). The skin provides elasticity, which causes the skin to return to its original state after being stretched.

Synthesis

It is synthesized on ribosomes as globular tropoelastin, the molecular weight is approximately 70,000 (in the reaction step before elastin, the *tropos* turn). There are two secondary structures on the tropoelastin chain:

- majority (β-helix),
- minor (α-chain).

They are interconnected. The bond between these strands occurs due to the presence of three lysine residues. Lysine is oxidized by lysyl oxidase to form allysine. Allysin immediately reacts with other lysine residues. This reaction gives rise to the macromolecular network that is characteristic of elastin.

A considerable amount of elastin is produced prenatally, and a high concentration of elastin is observed already before birth or in the early postnatal stage.

Degradation

Pancreatic juice contains the enzyme elastase, which is produced in an inactive state as proelastase. Elastin is split only after activation by trypsin.

Links

Related Articles

- Skin
- Extracellular matrix
- Proteosynthesis

External links

- Elastin - Czech Wikipedia (https://cs.wikipedia.org/wiki/Elastin)

Source

- Notes from lectures from Institute of Histology and Embryology 1 LF (http://uhiem.raycz.cz/cz/frames.htm)

References

- MATOUŠ,Bohuslav.et al *Basics of medical chemistry and biochemistry*. Prague, Galén 2010, p. 417 ISBN 978-80-7262-702-8