

POLYRGD PEPTIDES APPLICATIONS IN TREATMENT OF THE CENTRAL NERVOUS SYSTEM



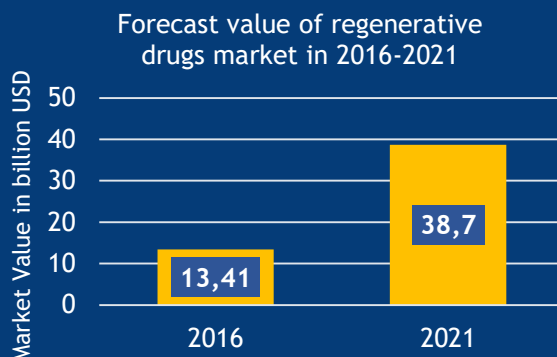
Technology

Neurological damage includes traumatic and sudden pathological changes in the nervous system and related circulatory system. Especially dangerous to health and life are damages to the central nervous system, i.e. the brain and spinal cord which cause undesirable physiological and cognitive changes as well as changes affecting emotion or memory. The subject of proposed invention are peptides and concatameric proteins comprising in their structure an RGD module a peptide sequence consisting of amino acids arginine, glycine and aspartic acid. The scope of described technology includes method of efficient and multifactorial determination and analysis of anti-lesion and/or neuroprotective activity of compounds with potential pharmacological activity.

Based on the results of research the invention has properties that reduce effects of damage in cells isolated from brain after use of polyRGD peptides and proteins. Research in excitotoxicity model proved to reduce the effects of brain damage in hippocampus (element of limbic system responsible for memory) of animals. Use of peptides containing RGD sequence has a positive effect in *in vivo* regeneration of peripheral nerves, where they stimulated regrowth of nerve fibres. Peptide containing single RGD module, its multimer peptides and those containing N-acetyl group as well as concatameric proteins containing polyRGD sequences, they can find commercial applications in the production of innovative preparations that eliminate effects of spinal cord injuries and effects of sudden damage to the nervous system e.g. due to shock or stroke. The invention may contribute to treatment of effects of traffic accidents and falls from heights.

Market

The global market for regenerative products is divided according to following segments: dermatology, oncology, diabetology, the market of orthopedic and musculoskeletal disorders, cardiovascular diseases and central nervous system. The market will grow at rapid pace, until 2021, revenues from this market is expected to increase from USD 13,41 billion in 2016 to USD 38,70 billion in 2021. It predicts an increase in the value of the market at a CAGR of 23.6%. Main development factors of the global market for regenerative products in therapies of the central nervous system will be an increase in the number of disorders and diseases, limited availability of regenerative drugs and technological progress in field of newly emerging regenerative products.



Source: Regenerative Medicine Market by Therapy, Product, Applications Forecast to 2021 - MarketsandMarkets

Commercialization opportunities



- ➔ Licensing agreement
- ➔ Transfer of ownership
- ➔ Partnership in order to further research or commercialization.
- ➔ Spin-off

IP Status



The invention was submitted for patenting according to Polish P.425131 and international EPO EP18000319.6.

Implementation progress



TRL 4
Technology validated in laboratory conditions

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