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BOOK OF ABSTRACTS



Effective current approaches
in anti-aging medicine
and gerontology

Wide application of peptide bioregulators contribute to the maintenance or even improvement of the visual function of the patients with retinal degenerative disease, improving their quality of life, making them functional and with a positive impact on social and financial indicators.

Reference list:

1. Morozov V.G., Khavinson V.Kh. Effects of extracts from hypothalamus and pineal gland on some functions of the organism//Scientif.confer., Leningrad, 5-6 May, 1971: Materials. - Leningrad, Kirov State Medical Academy, 1971,-P.127-128
2. Trofimova S.V., Maximov I.B., Neroev V.V. Regulatory effects of peptides of the retina.-SPb.: IKF«Foliant»,2004.-160p
3. Khavinson V.Kh., Zemchihina V.N., Trofimova S.V., Malinin V.V. Effect of peptides on proliferative activity of retinal cells and pigment epithelium// Bulletin of experimental medicine.-2003.-No6,Vol.135.-P.700-702

SHORT PEPTIDES AND THEIR EFFECTS ON AGEING IN ORAL DERIVED STEM CELLS

Diomedea Francesca¹, Trubiani Oriana¹, Trofimova Svetlana², Sinjari Bruna¹, Popravka Ekaterina², Sakhenberg Elena³, Khavinson Vladimir^{2,4}, Caputi Sergio¹

¹ *Laboratory of Stem Cells and Regenerative Medicine, Department of Medical, Oral and Biotechnological Sciences, School of Medicine and Health Sciences, University 'G. d'Annunzio' Chieti-Pescara, Chieti, Italy*

² *Department of Biogerontology, Saint Petersburg Institute of Bioregulation and Gerontology, Saint Petersburg, Russia*

³ *Institute of Cytology, Russian Academy of Sciences, Saint Petersburg, Russia*

⁴ *Group of Peptide regulation of ageing, Pavlov Institute of Physiology of RAS, Saint Petersburg, Russia*

Relevance: Mesenchymal stem cell is a highly promising alternative strategy for tissue regeneration. However, aging progressively decreases the proliferative and differentiation potential of MSCs and diminishes their regenerative capacity, which represents a limiting factor for their endogenous use in patients [1].

The short peptides play a key role in the concepts of the gene control of protein synthesis, in the transmission of biological information and in the modulation of the transcription related to the aging and differentiation process [2].

The aim of the present study was the evaluation of the effect in terms of aging and osteogenic differentiation process of Cartalax, Vesugen, Vilon and Epitalon on different type of cells derived from oral cavity.

Methods: Primary Osteoblasts derived from human periostium (OBs), Periodontal Ligament Stem Cells derived from human periodontium (hPDLSCs) and Gingival Stem Cells derived from human gingival tissue (GMSCs) have been used to study the peptides biological effects in terms of ageing and osteogenic differentiation. Morphological and biochemical analyses were used to evaluate the modulation of intracellular regulators of the transcription factor related to aging, as p21 and to osteogenic differentiation as RUNX2 and COL1A.

Results: P21 showed a decrease expression in treated samples with Cartalax, Vesugen, Vilon and Epitalon showing an anti-aging effect. RUNX2 and COL1A showed a high expression in treated samples when compared to the untreated showing a role in the enhancement of differentiation.

Conclusion: The application in vitro of the studied peptides could represent a promising tool for preventive purpose in the ageing process and to led the knowledge significantly in the physiological functions as a bioregulators of cell differentiation.

Reference list:

1. Trubiani, O.; Orsini, G.; Caputi, S.; Piatelli, A. Adult mesenchymal stem cells in dental research: A new approach for tissue engineering. International journal of immunopathology and pharmacology 2006, 19, 451-460.
2. Khavinson, V.K.; Kormilets, D.Y.; Mar'yanovich, A.T. Peptides (epigenetic regulators) in the structure of rodents with a long and short lifespan. Bulletin of experimental biology and medicine 2017, 163, 671-676.