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The Institute for Research in Biomedicine (IRB Barcelona) is an independent, non for-profit research center engaged in basic and applied biomedical science. The convergence of biology, chemistry, medicine, physics and computer science at IRB Barcelona provides a unique opportunity for the translation of basic biomedical research into innovation.

AgeSTOP A NOVEL TARGET AGAINST AGING

AgeSTOP

A novel target against aging

AgeSTOP is based on the discovery of a novel role for a known ligand-activated transcription factor involved in skin aging.

We have generated evidences that old fibroblasts express master regulators of adipogenesis (such as our target). Topic pharmacological inhibition of our target attenuates, *in-vivo*, fibroblast aging.

CHALLENGE

Aging is attained by a series of diverse biochemical events that cause the body to deteriorate over time, affecting wellbeing, wellness and physical appearance. Skin becomes drier and more fragile, the epidermis grows thinner, and, at this point, there is a clear need for anti-aging technologies to improve its strength and tautness.

Anti-aging technologies involve procedures and medication to delay or stop the aging process, and its market is perceived to be one of the rising markets in today's world.

The global Anti-Aging market was worth 42.51Bn USD in 2018 and is estimated to be growing at a CAGR of 5.30% (2016-2024), so reaching 55.03Bn USD by 2023.

The future growth of anti-aging market is observed to rely on the advancement and technological development with enhanced efficacy and safety of anti-aging products.

TECHNOLOGY

Using population- and single-cell transcriptomics, as well as long-term lineage tracing, we studied how murine dermal fibroblasts are altered during physiological aging under different dietary regimes known to affect longevity.

Identity of aged fibroblasts becomes undefined with a reduction in the expression of genes involved in the formation of the extracellular matrix and an increase in adipogenic traits. One of the overexpressed genes (our target protein) is a master regulator of adipogenesis and belong to the ligand-activated transcription factor family.

In vivo pharmacological inhibition of our target protein attenuates fibroblast aging when topically applying the target inhibitor. This was evident by the higher expression of genes involved in extracellular matrix components production and secretion and by the prevention of the metabolic changes associated to aging.

COMPETITIVE ADVANTAGES

- New target for anti-aging cosmetic treatments
- Topical administration
- Treatment of age derived / related conditions or diseases
- European patent application in place

CURRENT STAGE OF DEVELOPMENT

- This technology is available for out-licensing

RESEARCH TEAM

Prof. Salvador Aznar-Benitah (IRB Barcelona / ICREA)

STEM CELL AND CANCER

MORE INFORMATION

Identity Noise and Adipogenic Traits Characterize Dermal Fibroblast Aging

Salzer MC, *et al.* Cell 2018

DOI: 10.1016/j.cell.2018.10.012

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