

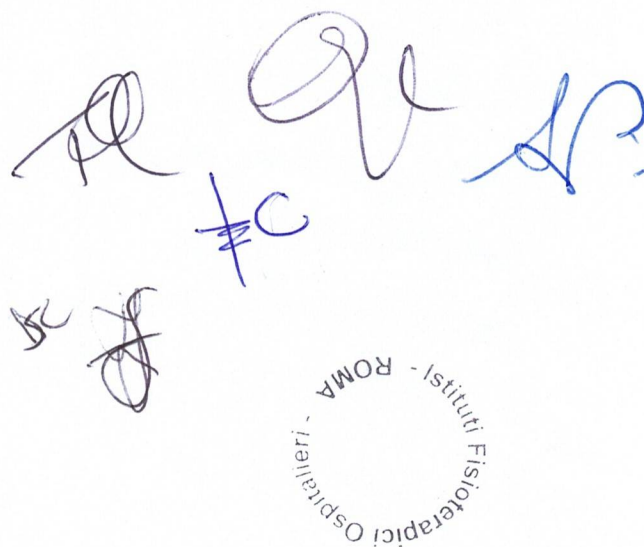
AVVISO PUBBLICO, PER TITOLI E COLLOQUIO, PER L'ASSUNZIONE A TEMPO DETERMINATO N. 1 RISORSA NEL PROFILO DI RICERCATORE SANITARIO, CATEGORIA DS, DA ASSEGNARE ALLA UOC LABORATORIO DI FISIOPATOLOGIA CUTANEA DELL'ISTITUTO SAN GALLICANO ALLA UOC LABORATORIO DI FISIOPATOLOGIA CUTANEA NELL'AMBITO DEL PROGETTO RF-2021-12374216 PI DR.SSA CAMERA

PROVA COLLOQUIO

18 MARZO 2024 H 12:00

Domande tecniche

- 1) Descrivere organizzazione strutturale della cute e aspetti funzionali;
- 2) Descrivere modelli di studio di cute *in vitro* di diversa complessità e le possibili applicazioni nell'ambito del progetto finalizzato.



Handwritten signatures in blue ink, including a large signature 'A. Camera' and several smaller ones. A circular stamp is visible in the lower right, containing the text 'Istituti Fisioterapici Ospitalieri - ROMA'.

Domanda estratta n. 2

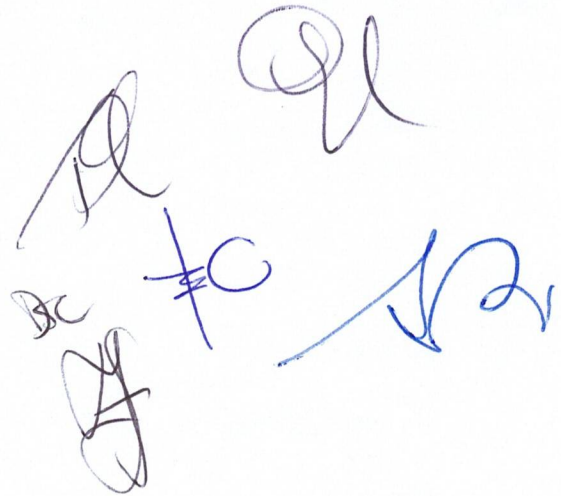
AVVISO PUBBLICO, PER TITOLI E COLLOQUIO, PER L'ASSUNZIONE A TEMPO DETERMINATO N. 1 RISORSA NEL PROFILO DI RICERCATORE SANITARIO, CATEGORIA DS, DA ASSEGNARE ALLA UOC LABORATORIO DI FISIOPATOLOGIA CUTANEA DELL'ISTITUTO SAN GALLICANO ALLA UOC LABORATORIO DI FISIOPATOLOGIA CUTANEA NELL'AMBITO DEL PROGETTO RF-2021-12374216 PI DR.SSA CAMERA

PROVA COLLOQUIO

18 MARZO 2024 H 12:00

Domande di informatica

- 1) A cosa serve Excel?
- 2) Cosa è la PEC?

A collection of handwritten signatures in blue ink, including a large stylized 'A', a signature starting with 'BC', a signature starting with 'FC', and several other illegible signatures.



Contents lists available at ScienceDirect

Neurobiology of Aging

journal homepage: www.elsevier.com/locate/neuaging.org

Oligomeric α -Synuclein induces skin degeneration in reconstructed human epidermis

Júlia T. Oliveira^a, Vanja Dakic^b, Gabriela Vitória^a, Carolina da S.G. Pedrosa^a, Mayara Mendes^a, Luiz Guilherme H.S. Aragão^a, Thyago R. Cardim-Pires^d, Damien Lelièvre^e, Daniel Rodrigues Furtado^a, Roberta O. Pinheiro^f, Débora Foguel^d, Lionel Breton^g, Charbel Bouez^h, Rodrigo De Vecchi^b, Marília Zaluar P. Guimarães^{a,c,#}, Stevens Rehen^{a,i,#,*}

^a D'Or Institute for Research and Education (IDOR), Rio de Janeiro, RJ, Brazil

^b L'Oréal Research & Innovation, Rio de Janeiro, Brazil

^c Instituto de Ciências Biomédicas, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, RJ, Brazil

^d Instituto de Bioquímica Médica, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, RJ, Brazil

^e EPISKIN SA, Lyon, France

^f Leprosy Laboratory, Oswaldo Cruz Institute (IOC), Oswaldo Cruz Foundation (Fiocruz), Rio de Janeiro, RJ, Brazil

^g L'Oréal Research & Innovation, Aulnay-sous-bois, France

^h L'Oréal Research & Innovation, Clark, NJ, USA

ⁱ Departamento de Genética, Instituto de Biologia, Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro, RJ, Brazil

ARTICLE INFO

Article history:

Received 21 September 2021

Revised 18 February 2022

Accepted 19 February 2022

Available online 26 February 2022

Keywords:

Epidermis

Skin degeneration

Inflammaging

Neurodegeneration

α -Synuclein

ABSTRACT

Aged and photoaged skin exhibit fine wrinkles that are signs of epidermal inflammation and degeneration. It has been shown that healthy elderly skin expresses amyloidogenic proteins, including α -Synuclein, which are known to oligomerize and trigger inflammation and neurodegeneration. However, little is known about their putative role in skin physiology and sensitivity. To unravel this possible role, we investigated the impact of oligomeric α -Synuclein ($\text{O}\alpha$ -Syn) in 2D and 3D keratinocyte human models. Exogenous $\text{O}\alpha$ -Syn caused degeneration of reconstructed human epidermis (RHE) by diminishing proliferation and thickness of the stratum basale. $\text{O}\alpha$ -Syn also increased NF- κ B nuclear translocation in keratinocytes and triggered inflammation in the RHE, by increasing expression of interleukin-1 β and tumor necrosis factor- α , and the release of tumor necrosis factor- α in a time-dependent manner. Dexamethasone and an IL-1 β inhibitor partially diminished RHE degeneration caused by $\text{O}\alpha$ -Syn. These findings suggest that $\text{O}\alpha$ -Syn induces epidermal inflammation and decreases keratinocyte proliferation, and therefore might contribute to epidermal degeneration observed in human skin aging.

© 2022 The Authors. Published by Elsevier Inc.

This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>)

1. Introduction

The epidermis is the outermost layer of the skin and is mainly composed of keratinocytes. The proliferation of keratinocytes is

restricted to the basal layer, which is crucial to skin homeostasis and regeneration. Chronological skin aging, which is accompanied by epidermal degeneration, is a natural process that occurs throughout life. However, it can be accelerated by some factors, such as smoking (Martires et al., 2009) and ultraviolet (UV) exposure (Baumann, 2007). Aged skin displays high levels of inflammatory mediators including the proinflammatory cytokine tumor necrosis factor- α (TNF- α). Many pro-inflammatory agents, including TNF- α , trigger the RelA/p65 NF- κ B subunit translocation to the nucleus, thereby regulating various processes including cell proliferation and further expression of itself and other inflammatory cytokines (Joyce et al., 2001; Lan et al., 2005; Pupe et al., 2003). NF- κ B plays a pivotal role in skin homeostasis and aging (Grinberg-Bleyer et al., 2015).

Abbreviations: α -Syn, α -Synuclein; $\text{O}\alpha$ -Syn, oligomeric α -Synuclein; IL, interleukin; TNF- α , tumor necrosis factor- α ; UV, ultraviolet; NF- κ B, nuclear factor kappa-light-chain-enhancer of activated B cells; A β , β -Amyloid; RHE, reconstructed human epidermis; HEK293, human neonatal epidermal keratinocytes; PBS, phosphate-buffered saline; DMEM, Dulbecco's Modified Eagle Medium; DAPI, 4',6-diamidino-2-phenylindole.

* Corresponding author: Federal University of Rio de Janeiro (UFRJ) and D'Or Institute for Research and Education (IDOR). Tel: +55 21 3883 6000.

E-mail address: srehen@lance-ufirj.org (S. Rehen).

These authors contributed equally to this work.

