

Institut für Biologische Chemie und Ernährungswissenschaft

Universität Hohenheim

Prof. Dr. H.K. Biesalski

**Effects of the regulators of pigmentation
3-isobutyl-1-methylxanthine, kojic acid and arbutin on newly
developed cocultures and skin equivalents composed of
HaCaT cells and human melanocytes**

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Dekan: Prof. Dr. K. Bosch

Berichterstatter, 1. Prüfer: Prof. Dr. med. H.K. Biesalski

Mitberichterstatter, 2. Prüfer: Prof. Dr. L. Graeve

3. Prüfer: PD Dr. J. Frank

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Abbreviations

2D/3D	twodimensional / threedimensional
A ₄₀₅ , A ₅₀₀	absorbance 405 nm / 500 nm
ACTH	adrenocorticotrophic hormone
BM	basement membrane
BSA	bovine serum albumin
bFGF	basic fibroblast growth factor
°C	Celsius
cAMP	cyclic adenosine monophosphate
CRE	cAMP responsive element
CREB	cAMP responsive element binding protein
d	day(s)
DED	de-epidermized dermis
DHICA	5,6-dihydroxyindole-2-carboxylic acid
DMEM	Dulbecco's modified Eagles's medium
DMSO	dimethylsulfoxide
DOPA	dihydroxyphenylalanine
EDTA	ethylenediamine-N,N,N',N'-tetraacetic acid
FCS	fetal calf serum
HaCaT	Human Adult Calcium Temperatur (human cell line)
HE	haematoxylin-eosin
IBMX	3-isobutyl-1-methylxanthine, isobutylmethylxanthine
IL-1	interleukin-1
β-LPH	β-lipotrophic hormone
MC1R	melanocortin 1 receptor
MGM	melanocyte growth medium

MITF	microphthalmia associated transcription factor
NO	nitrite oxide
α -MSH	α -melanocyte stimulating hormone
NGF	nerve growth factor
PAR-2	protease-activated receptor 2
PBS	phosphate-buffered saline
PKA	protein kinase A
PKC	protein kinase C
PMA	phorbol myristate acetate
POMC	proopiomelanocortin
ROS	reactive oxygen species
rpm	rounds per minute
RT	room temperature
SD	standard deviation
TBS	tris-buffered saline
TRIS	tris-(hydroxymethyl)-methylamine
UV	ultraviolet
w/v	weight/volume