ABSTRACT BOOK ABSTRACTS



A new ERA for global Dermatology 10 - 15 JUNE 2019 MILAN, ITALY

INFLAMMATORY SKIN DISEASES (OTHER THAN ATOPIC DERMATITIS & PSORIASIS)

## AGE-ASSOCIATED MICRORNA DIFFERENTIAL EXPRESSION IN HUMAN SKIN IS RELATED WITH THE MODULATION OF PRO-INFLAMMATORY SIGNALING PATHWAY

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Background: The process of human skin aging is influenced by a complex interplay between endogenous and exogenous factors. Over recent years, emerging evidence has demonstrated the important roles of epigenetic regulators in skin development, regeneration and repair. MicroRNAs, one type of molecular players in epigenetic regulations by repressing the gene expression at post-transcriptional level, have provided insight into skin physiology and pathology studies from a novel perspective.

Objective: This study aimed to investigate the differential expression profiling of microRNAs between young and aging skin. Functional analysis of the microRNA signatures was also involved in order to discover the related gene targets and signaling pathways.

Materials and Methods: In this study, normal human full-thickness skin samples were collected from healthy female donors undergoing blepharoplasty. The skin samples were categorized by age into young (33.5±2.8 years) and elderly(61.9±9.0 years) groups. 8 donors were included in each group. After total RNA extraction of the skin samples, microRNA microarrays were applied to screen the differential expressed microRNAs between groups based on the criteria of a fold-change>2 and p-value<0.005. TargetScan 7.0 was used to identify the target genes, for which DAVID 6.8 was subsequently used to perform the GO and KEGG enrichment analysis.

Results: A total of 10 microRNAs was identified to be significantly different between two age groups. GO and KEGG enrichment analysis results showed the most predominant biological theme was IL–6–mediated signaling pathway. The decrease of hsa-miR-149-5p in aging skin is potentially correlated with the up-regulation of IL6 gene expression.

Conclusions: The microRNA mediated alteration of pro-inflammatory cytokine signaling pathway helps to explain the increased vulnerability and impaired homeostasis in aging skin. The in-depth analysis of the microRNA regulatory mechanisms may offer new target for the treatments of age-related skin disorders.





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