

MicroRNAs skin disorders

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ABSTRACT

The progression in science gives novel and deeper understandings of human beings organisms. The Human Genome Project uncovered about 20,500 human genes. More recently, non-coding RNAs saw the light and gained researchers interest. Among the different subsets of these non-coding RNAs, microRNAs were identified as 18-25 nucleotides long and have been shown to play critical regulatory roles in a wide range of cellular processes. Emerging studies highlighted the importance of miRNAs in health and in disease. Ten years ago, the role of miRNAs in cutaneous system has been established from skin formation in early life to skin homeostasis maintenance. In addition, a deregulated miRNAs profile was shown to cause major skin disorders. Herein, in this review, a global discussion and findings of the different aspects of miRNAs biology will be covered with a focus on the role of miRNAs in skin biology.

Rosacea is a complicated skin disease with a plethora of phenotypic manifestations. Environmental factors, skin barrier dysfunction, epidermal antimicrobial peptides, demodicosis, neurovascular dysfunction are all believed to play a role. TRP channels and its associated proteins interactors and immunological pathways may play a significant role in the pathogenesis of Rosacea. Current study involves a vast majority of analysis that can be ultimately correlated to the different types of textiles. The blood stains (blood grouping antigens) on the clothes of the Deceased, Accused, Victim, Complainer, Injured or witness, reveals the specificity of particular blood group. This is carried out by a process called Absorption-Elution method, which is employed to measure the presence or absence of

antigen or antibody. In this chapter we have studied eight different types of fabrics which are collected from the scene of crime by investigating agency, for blood grouping. And the variations in the results, after periodic time interval, are discussed. The problem increases when particular blood stain is found on various types of cloth articles which belong to the person who present at the crime scene. Hence

a study was carried out to isolate the blood group from different types of cloth articles having different types of fibres. microRNAs are being investigated as promising therapeutic targets and biomarkers for different disease conditions. MiRNAs serve as essential regulators of cell differentiation, proliferation and survival. The involvement of miRNAs in the functioning and regulation of the skin cells and skin diseases is a rapidly advancing area in dermatological research. MiRNAs have been identified to play a key role in the pathogenesis, diagnosis, and treatment of the skin diseases. Skin is one of the largest organs of the body, primarily functioning as the first line of defense against external insults including bacteria, virus and other pathogens. Various miRNAs have been identified to demonstrate significant effects in various skin inflammatory conditions such as wounds, cancer, psoriasis, scleroderma, and dermatomyositis. The current review explores the possible roles of the miRNAs in skin disorders and reports relating to the clinical trials involving skin diseases and miRNAs. The review has also compiled the information of the databases available, which correlates the miRNAs with different diseases and give details about targeting interactions of miRNA.

Keywords: Rosacea, miRNA, blood grouping, skin care, Antigen