

Small molecules may explain psoriasis

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A research team at the Swedish medical university Karolinska Institutet has shown for the time that microRNA, small RNA molecules, may play an important role in the development of inflammatory skin diseases such as psoriasis and atopic eczema. The research team is led by Professor Mona Ståhle, one of Sweden's most prominent scientists in the field.

MicroRNA are small RNA molecules that regulate gene expression, and by acting on many different proteins and different cellular mechanisms in skin and immune cells these small RNA molecules may be an important factor in the development of disease. Therapies based on microRNA might therefore in the future become more effective than medicines targeted at individual proteins.

"We believe that microRNA may also be significant in regulating other common chronic inflammatory diseases such as arthritis and certain autoimmune diseases," says Andor Pivarcsi, who has directed the study together with Enikő Sonkoly.

The study shows that microRNA has different patterns of expression in psoriasis compared with normal skin and also in comparison with atopic eczema. One of these molecules, miR-203, is of particular interest as it is greatly upregulated in psoriasis and is only expressed by the skin's epithelial cells, keratinocytes.

No one has previously investigated whether this quite recently discovered group of molecules might be significant in inflammatory diseases. Psoriasis and atopic eczema are the most common chronic

inflammatory skin diseases. Despite intensive research, not enough is yet known about underlying disease mechanisms, which hampers the development of effective drugs.

Source: Karolinska Institutet

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