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The Manchester Patch Test: Assessing product efficacy *in vivo*

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Abstract

Photoageing describes the appearance of skin which, as well as being subject to chronological ageing, is also chronically photoexposed. Clinically photoaged skin is characterised by the occurrence of coarse and fine wrinkles, dyspigmentation, a sallow complexion and formation of benign and malignant neoplasms. The mechanisms of wrinkle formation are not fully understood but it is now widely accepted that remodelling of the fibrillin-rich microfibrillar network – part of the elastic fibre system of skin – is an important feature relating to its clinical appearance. Topical application of all-*trans* retinoic acid (*t*RA) improves the clinical signs of photoageing; hence, *t*RA is regarded as the "gold standard" against which commercially available "anti-ageing" products are judged.

Our previous work has demonstrated that topical application of *t*RA under occlusion for four days produces significant deposition of fibrillin-rich microfibrils in the papillary dermis of photoaged skin, predictive of those seen after several weeks of non-occluded topical application; thus, this assay provides a rapid and convenient method of assessing the efficacy of putative repair agents.

We will discuss how we have used the assay to build confidence in products prior to launch. The Manchester patch test has identified a number of over-the-counter cosmetic products with the ability to cause deposition of fibrillin-rich microfibrils in photoaged dermal tissue and hence provide evidence for its partial repair.

Biography

Dr Watson's research focuses on understanding human skin ageing, which can be divided broadly into two categories: intrinsic (that which occurs with time) and extrinsic (that which is the result of an individual's interactions with their environment). The major environmental factor which impacts upon skin is long-term sun exposure (ultraviolet radiation, UVR), although other stimuli also exert effects (sun-bed use, smoking, atmospheric pollutants etc). In addition to examining the mechanisms underlying skin ageing, Rachel also has an interest in understanding remodelling and repair of human skin once damage has occurred. This includes understanding how retinoids interact with the skin to promote repair, dietary protection against UVR-mediated damage and performing 'proof of principle' *in vivo* clinical studies on emerging therapies.