

From Greasy Bad Guy to Superficial Savior!

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During the last decade it has become increasingly evident that the human microbiome has a tremendous impact on human development and health. However, the importance of the skin microbiome has not been as extensively studied as the gut or oral microbiome. One of the main colonizers of human skin is the bacterium *Propionibacterium acnes* (Fig. 1), that, despite its name, cannot be clearly linked to acne vulgaris. A research study at Lund University led by Dr Rolf Lood has identified a completely new type of enzyme from this bacterium (1). This enzyme, RoxP, can detoxify oxygen radicals that for instance are generated by UV radiation of the skin. From the bacterial point of view this makes perfect sense; the bacterium can avoid the damaging effects of radiation and other events generating oxygen radicals. Interestingly, RoxP is as potent as other well known antioxidants such as the vitamins C and E. The fact that RoxP is produced on the skin surface suggests that it contributes to protection of our skin from the constantly produced oxygen radicals. Such radicals have been implicated in several skin diseases such as atopic dermatitis, psoriasis and skin cancers. Forthcoming studies with RoxP in animal models of oxidative damage, as well as analysis of RoxP expression in patient with skin cancers, will shed further light into the potential protective effects of RoxP. In this process, *P. acnes* may very well be transformed from

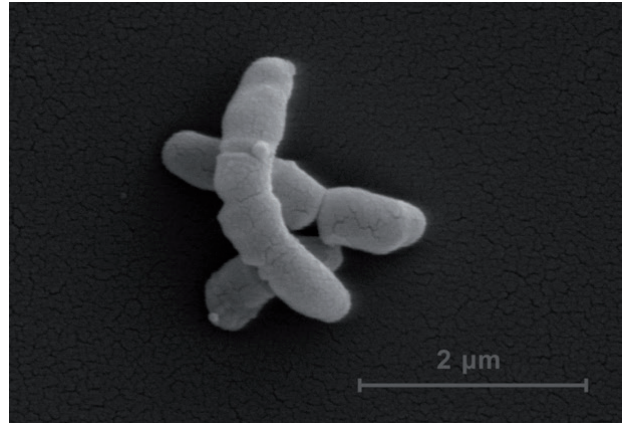


Fig. 1. *Propionibacterium acnes* (1).

the wrongfully accused culprit causing acne into one of our most beneficial bacterial inhabitants.

Reference

1. Allhorn M, Arve S, Brüggemann H, Lood R. A novel enzyme with antioxidant capacity produced by the ubiquitous skin colonizer *Propionibacterium acnes*. *Scientific Reports* 2016; 6: 36412.