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## Emollient activity of a new product (DM17) on human living skin explants

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**Aim:** The aim of this study is to investigate the emollient activity of a new product (DM17) on human living skin explants. Markers of stratum corneum organization, composition and function such as aquaporin-3, filaggrin and ceramides were used in this study. The ratio of exposed 850 cm<sup>-1</sup> and buried tyrosine 830 cm<sup>-1</sup> residue in a protein was also analyzed.

**Methodology & Theoretical Orientation:** A total of 21 explants from a 64-year-old Caucasian woman after abdominal plasty were kept in BIO-EC's explants medium culture in a humidified, 5% CO<sub>2</sub> atmosphere at 37 °C: 3 explants were controls for day-0 (D0) and 18 were either topically treated (N=9) or not treated (N=9) with DM17 (Horus Pharma, France) at D0+3h, D0+6h and D6. General explant morphology was assessed using Goldner's Masson trichome on histological sections. Immunostaining for aquaporin-3, filaggrin and ceramides was performed using polyclonal/monoclonal specific antibodies; and digital imaging was done using light microscopy. Raman spectroscopy was performed using a confocal microscope and after spectrum normalization, the 850/830 cm<sup>-1</sup> ratio, corresponding to exposed/buried tyrosine forms in the living epidermis and papillary dermis, were calculated.

**Findings:** General morphology was comparable across all explants, except at D6, when DM17 treatment induced a thicker and more laminated stratum corneum. DM17 treatment increased aquaporin-3, filaggrin and ceramides expression in the stratum corneum compared to non-treated controls at all timepoints. Also, the 850/830 cm<sup>-1</sup> ratio increased at all timepoints in the living epidermis and papillary dermis compared to non-treated controls.

**Conclusion & Significance:** The DM17 product improved stratum corneum organization, composition and barrier function (increase of the ceramide and filaggrin expression), also skin hydration (increase of AQP3, filaggrin expression and increase of the ration between exposed and buried tyrosine) suggesting an emollient activity.

### Biography

Chloe Gandoin is a Pharmacist with a Master's degree in Regulatory Affairs. She is working for a pharmaceutical company based in France, specialized in ophthalmology and dermatology. She puts her expertise on developing innovative products in order to improve patient wellbeing. Her research challenge is to find preservative free therapeutical product in the dermatology area in particular in atopic dermatitis.

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