Proteomics reveals that quinoa bioester promotes replenishing effects in epidermal tissue

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The continuous search for natural products that attenuate age-related losses has increasingly gained notice; among them, those applicable for skin care have drawn major attention. The bioester generated from the chenopodium quinoa's oil is a natural-origin ingredient described to produce replenishing skin effects. With this as motivation, we used shotgun proteomics to study the effects of quinoa bioester on human reconstructed epidermis tridimensional cell cultures after 0, 3, 6, 12, 24 and 48 hours of exposure. Our experimental setup employed reversed-phase nano-chromatography coupled online with an orbitrap-XL and PatternLab for proteomics as the data analysis tool. Extracted ion chromatograms were obtained as surrogates for relative peptide quantitation. Our findings spotlight proteins with increased abundancy, as compared to the untreated cell culture counterparts at same timepoints, that were related to preventing premature aging, homeostasis, tissue regeneration, protection against ultraviolet radiation and oxidative damage.

Keywords: Cosmetics, proteomic, mass spectrometry, reconstructed human epidermis.

Biography

Amanda is pursuing a PhD, under the supervision of Dr. Paulo Costa Carvalho at Fiocruz Paraná, in bioscience and biotechnology, where she applies proteomics to study the skin health science. Her interests are in proteomics, mass spectrometry, cell culture and cosmetics.

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