

The targeted and untargeted analysis of serum indicate changes in the urea cycle of psoriasis patients

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Psoriasis is classified as a chronic inflammatory skin disease that affects 2-3% of the population. The disease is associated with significant mortality and morbidity. Psoriasis manifests itself as scaly inflamed plaques on the skin. The mechanisms underlying psoriasis remain unclear. It is known that an interplay between environmental and genetic factors initiate events leading to the activation of dendritic cells in the skin. This stimulates the migration and differentiation of effector T cells (Th17 and Th1) to the skin. The release of inflammatory cytokines that follows promoting further stimulation of keratinocyte proliferation, continued immune cell recruitment and the sustainment of a state of chronic inflammation. Past work on psoriasis has focused mainly on the genetic background and the proteins that have an effect on the disease. Using methods of analysis that are prevalent in metabolomics can yield new information on the etiology of psoriasis. In this study 20 serum samples from patients with psoriasis were matched with healthy controls and measured in a random order on a QTRAP 3200 coupled to a Shimadzu liquid chromatograph through a ZIP-pHILIC column for the untargeted analysis. In the targeted analysis, the AbsoluteIDQ p180 kit from Biocrates was used to quantitate a number of metabolites in the serum ranging from carbohydrates, biogenic amines, amino acids, acylcarnitines to phospholipids. The main results from this work indicate a strong dysregulation of the urea cycle in patients with psoriasis. This can be noted from a higher concentration of urea, ornithine, arginine and glutamine in patients with psoriasis.

Biography

Aigar Ottas has completed his Master's degree in Molecular and Cell Biology. Currently, he is a PhD student of Medicine at University of Tartu, Estonia.

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