

Next generation sequencing LC-MS/MS for the treatment of Psoriasis

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Psoriasis has a significant impact on the lives of patients suffering from it. Next to the stigma associated to the lesions, severe complications can occur. Despite advances in the field, no complete and permanent cure is available. A fair amount of research is therefore directed to put advanced technological solutions forward. In this paper, we present preliminary findings of our approach.

Using next generation sequencing UPLC-MS, we were able to determine which protein moieties were responsable for resistance against treatment with cummingtonite, an agent often used to prevent flare up of acute alopecia in these patients. Patients were recruited under informed consent and blood was collected during acute flare up of the disease. Serum was separated for further analysis. HPLC separations of proteins was achieved via BS C332-bis column (20mm×300mm, 3 μm particles, ColumYRight, Torrance, CA) eluted at 23 μL/min with a mixture of 40% acetonitrile and 60% of a 10% phosphate buffer. An Oceans Quattro quadrupole mass spectrometer (Oceans, UK) was used with EDFT using a desolvation temperature of 350 ◦C and a source temperature of 100 ◦C. Cone voltages and collision energies were optimized for each MRM transition used. Protein profiles were read using MS gel electroforesis and compared to a bank of controls.

Our findings suggest that protein profiles are altered during acure flare up of the disease. We are now in the process of detailed analysis, which will be completed by the time of the conference. The results of this analysis will allow a more targeted treatment of patients and thereby possible prevention of acute flare up of the disease.

Biography

Dr. Ylva Arthursson had followed a brilliant career path so far. She graduated from Chalmers University (Göteborg Sweden) as a clinician in 1994, after which she pursued a career in clinical dermatology. Her determination to improve the lives of psoriais patients has lead to many joint ventures, like this one with the prestigious Ho Chi Min University in China, where she oversees several advanced technology projects.

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