

Touching upon the millions of hidden treasures in the plasma proteome

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I will describe how innovative techniques in mass spectrometry provide unique novel insights into our humoral immune response. In our body we produce every day huge amounts of antibodies, of which many end up in circulation. Humans can make about trillions of distinct antibody clones, all exhibiting a different sequence, recognizing distinct antigens. We recently developed new LC-MS based antibody repertoire profiling methods for studying immunoglobulins in a quantitative manner. By now, we analysed a variety of samples (sera, milk and saliva) from both healthy as well as diseased donors, allowing us to make some paradigm-shifting observations of which several I will highlight in this talk. Moreover, I will describe how both peptide- and protein-centric approaches on new mass analyser facilitate de novo sequencing, a prerequisite for proper identification of circulating antibodies. Making use of such methods we are now able to identify patient specific antibody responses against diseases specific antigens, which may be considered leads for further therapeutic development. And yes, there are millions of different proteins in our blood.

User consent

yes

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