

“Targeting recombinant EPO by LC-MS analysis of intact glycopeptides”

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Project Summary:

In this project, we want to detect recombinant EPO in plasma samples by liquid chromatography - mass spectrometry through the analysis of intact glycosylated peptides.

We hypothesize that with the new fragmentation techniques such as EThcD, high energy HCD and laser photodissociation, present in the latest orbitrap MS analyzers, it is feasible to detect EPO in body fluids after thorough purification protocols. We aim thus to develop a purification protocol that after a specific EPO immunocapture from plasma samples, it extracts and fractionates glycopeptides based on their distinct glycan structures through different LC resins. After comprehensive offline fractionation, then we will quantify these intact glycopeptides through parallel reaction monitoring (PRM) acquisition. We will independently monitor each different type of recombinant EPO through trypsin or AspN proteotypic peptides, characterized by different glycan structures that will elute and fragment distinctively.