

Development of quantitative MRM assays for the measurement of 3,000 proteins across 20 mouse tissues

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Detailed characterization of protein expression in mouse tissues is challenging to perform due to the lack of available tools for rapid and robust quantitation. To simplify this process, we are developing highly multiplexed panels of assays to quantify 3,000 unique proteins across 20 mouse tissues by MRM mass spectrometry. Our method requires minimal sample pre-processing and uses stable isotope-labeled standard (SIS) peptides for precise and sensitive quantitation. Assay development involves determination of the LLOQ, linear range, and assay variability for each peptide. This rigorous characterization ensures the quality of each assay. Ultimately these assays will provide the first steps towards large scale, multi-tissue quantitation, and will allow researchers to gain an improved understanding of complex biological processes and diseases.