Multiplex Immunoassay Service

Biomarker Assay Services

Meso Scale Discovery

Multiplex immunoassays are suited to find out how your drug candidate modulates the body based on the protein level. Via multiplexing with the gold-standard Meso Scale Discovery (MSD) platform, several dozen proteins can be quantified simultaneously, providing you with high-quality data from minimal sample volumes.

MSD platform advantages:

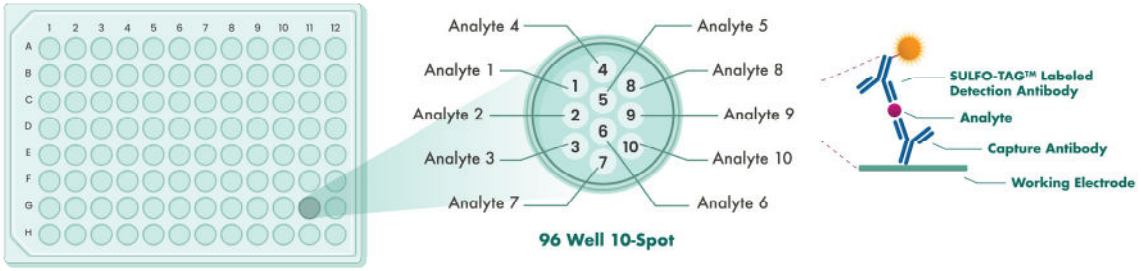
- Multiplexing allows fast and cost-efficient testing of an extensive array of proteins
- A small sample volume of as little as 5 µl is sufficient to enable testing of plasma from interim blood draws
- The exceptionally broad dynamic range enables the detection of proteins that are present in abundance as well as in tiny amounts (up to sub-fg/ml, which is 1000 times more sensitive than standard ELISA)
- Meso Scale Discovery provides ready-to-use kits which are thoroughly validated and include defined calibrators for reliable data with high reproducibility

Multiplex tailored to your research needs

MSD offers more than 200 analytes for self-assembled multiplexing beside many preselected combinations in ready-to-use plates.

Research areas include cytokines/chemokines, cell signaling such as phosphoproteins, oncology biomarkers, and many more.

MSD Assay Principle



MSD assays at Reaction Biology are performed with 96 well plates containing up to 10 detection spots per well.

High binding carbon electrodes on the bottom of the plates allow for attachment of capture antibodies with a 10x greater binding capacity than commonly used plates.

Most MSD immunoassays are sandwich assays similar to ELISA with the detection antibody labeled with a SULFO-tag. During readout, electricity is applied to the plate electrodes by an MSD instrument leading to light emission by the SULFO-tags. The light is then measured to quantify analytes in the sample.

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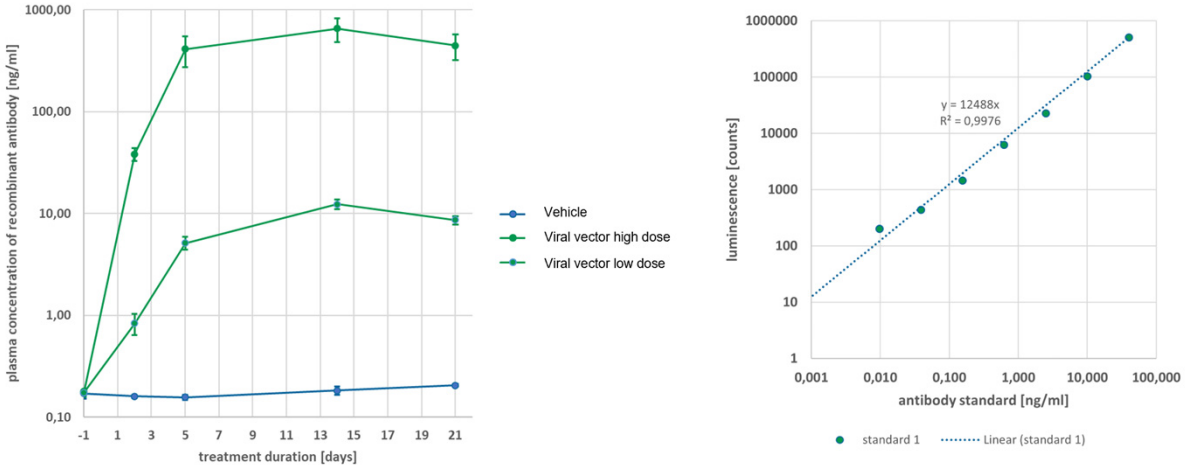
Example study 1: Quantification of recombinant antibodies *in vivo*

Mice were treated at day 0 with a viral construct for expression of a recombinant antibody.

Blood samples (about 20 µl) were taken at the indicated timepoints, starting with a first sample one day before application of the virus in two different doses.

The resulting expression of a recombinant antibody in mouse serum was determined with MSD technology using antigen-coated assay plates (left graph) and quantified against an antibody standard (right graph).



Example study 2: Quantification of cytokine levels in cell culture supernatant

Levels of cytokines IL-1beta and IL-8 were analyzed via MSD technology in cell culture supernatants of human mesenchymal stem cells cultured in different conditions for 1, 3, or 7 days. Cytokines were measured in multiplex fashion (upper graph) and quantified against a recombinant calibrator (lower graphs). N =3