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## Improved biologics workflow utilizing a single, automated platform to effectively monitor protein stability

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Biologics are an important class of targets in drug discovery that are proven to be effective therapeutics. However, characterization of biologics and the associated workflows from early discovery to final formulation can often be very complex, time-consuming and lack accuracy and precision needed to appropriately monitor drug candidates. Here we demonstrate that the Prometheus NT.Plex by NanoTemper Technologies can be used for long-term stability prediction of biologics using a combination of thermal and chemical unfolding analysis. The resulting unfolding data nicely correlates with sample turbidity and monomer content over a time period of 17 months, showing that the Prometheus NT.Plex can be used to rapidly predict the long-term stability of biologics within one day. Moreover, we evaluate the performance of the Prometheus instrument compared to  $\mu$ DSC measurements in a thermal stability screening analysis. We show that the  $T_m$ -values obtained by the Prometheus NT.Plex show a strong correlation with  $\mu$ DSC data, while dramatically reducing sample consumption and time-to-results. The Prometheus NT.Plex combines the easy-to-use and highly precise detection of protein thermal and colloidal stability measured by the Prometheus NT.48 with a flexible and fully automated, interface, the NT.Robotic Autosampler. High-precision capillary chip handling and filling is carried out automatically from 384 well plates, so that the Prometheus NT.Plex can continually run with minimal manual interactions. Hundreds of samples can be measured per day, enabling stability screening with an unprecedented throughput and accuracy. This platform provides robust, efficient and accurate analysis and characterization of biologics.

### Biography

Marco Schwieder is a chemist by training. After gathering research experience in Clinical Biochemistry, he did his PhD work in Biophysical Chemistry and spent several years in Analytical Chemistry in an industrial environment. Convinced by the unique capabilities of the Prometheus as an excellent tool, supporting scientists in pharmaceutical industry, Marco joined NanoTemper Technologies in a Sales and Support role.

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