

**CHARACTERIZATION OF PROTEIN AND PROTEIN AGGREGATES USING  
TEMPERATURE-CONTROLLED HOLLOW-FIBER FLOW FIELD-FLOW  
FRACTIONATION (HF5) ONLINE-COUPLED WITH UV-DETECTION AND  
DYNAMIC LIGHT SCATTERING (DLS) DETECTION**

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Hollow-Fiber Flow Field-Flow Fractionation (HF5) [1,2] is a subtechnique of conventional Asymmetrical Flow Field-flow fractionation (AF4). While AF4 uses a rectangular separation channel, the separation in HF5 takes place in a tubular channel consisting of semi-permeable hollow fibers, which are packed in a respective cartridge. The HF5-cartridge can be used as a disposable in a conventional Flow Field-flow fractionation-system offering fast analysis times, sterile conditions as well as a very good reproducibility. Hence, HF5 represents an excellent fractionation system for e.g., pharmaceutical and biotechnological applications.

This presentation describes the use of a temperature-controlled HF5-cartridge with focusing ability that was assembled by replacing the AF4 channel in the Flow Field-flow fractionation-system with a disposable hollow fiber cartridge providing less sample and solvent consumption. The planar channel was successfully applied for the fractionation of HDL, LDL and VLDL in a human plasma sample. Hyphenation of HF5 with DLS enabled the successful characterization of aggregated BSA and  $\gamma$ -Globulin at 37 °C revealing the presence of particles in the size range of 20 - 200 nm in both samples.