

## Separation of Proteins Mixture in Hollow Fiber Flow Field-flow Fractionation

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Flow field-flow fractionation is a technology to separate in an open channel by size. Molecules with different size have different diffusivities and are located in vertically different positions when passing in a open channel. In this research, hollow fiber membranes instead of conventional rectangular channels will be used as materials for the open channel and this change will decrease cost of manufacturing.

Flow FFF is an useful technique to characterize the biopolymeric materials. From the simple equation related to retention time, diffusion coefficients and Stokes radius of analytes can be calculated. Hollow-fiber flow field-flow fractionation has been used for the characterization and separation of proteins mixture in phosphate buffer solution and has demonstrated the potential to be developed into a disposable flow FFF channel.

The important index of success for the analytical separation ; selectivity and resolution, plate height - the selectivity is 1.24~1.4 and the resolution is 1.118~1.375 among four proteins. The optimized separation condition is  $V_{out}/V_{rad}=0.65/0.85\text{mL/min}$ .