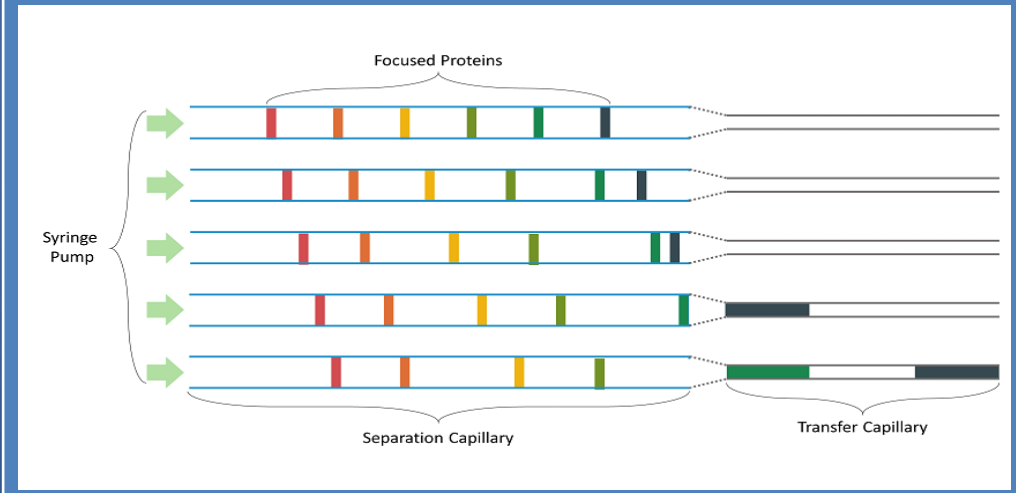
AES' Proprietary Cartridge Technology

Utilise a column diameter transformation technique, in which a large (inner diameter) ID capillary is used for CIEF separation and small ID capillary for sample transfer. A typical preparative cartridge has a 320µm ID for CIEF separation and a small ID capillary for sample transfer into fractionation collection vials. The focused protein zones inside the CIEF separation capillary will be continuously pushed out to the outlet transfer capillary after desired CIEF separation is achieved. With this cartridge, the ID of the separation capillary is 6 times that of the outlet capillary. When 1 mm of protein zone from the separation capillary is forced directly into the outlet transfer capillary, it will occupy about 40 mm in length as shown in the below figure.



The process of transferring a small section of focused protein into a much longer section effectively minimises the potential remixing of separated proteins inside the transfer capillary. During syringe mobilisation, the electric field can be adjusted to preserve the separation resolution. The difference in capillary ID greatly minimises the remixing of separated protein isomers. Therefore, the resolution achieved during CIEF will essentially be preserved.