BD™ Free Flow Electrophoresis System

The BD Free Flow Electrophoresis System (FFE) is a new product used for semi-preparative fractionation and enrichment of protein or cellular samples. The electrophoresis works in a thin film of aqueous liquids in the absence of any kinds of stationary phases like gels. It's capable of separating simple or complex protein samples. It's compatible with most downstream separation technologies.

Specification:

1. Patented free flow separation chamber
   - 0.5mm thick, 100mm wide and 500mm long and filled with thin film of aqueous liquids for continuous separation of samples
2. 96-well plate collection system
   - The unit accommodates standard depth or any deep well format
3. Seven counter flow medium
   - Help avoid turbulence and thus preserve fractionation pattern upon transition of the flow from the chamber into 96 tubes
4. Stabilization solution

- Run along the electrodes and effectively protect separation media from detrimental influences of the electrodes

5. Microchip system controller and software
6. Cooling system
   - Providing stability environment for electrophoresis
7. Fluidic pumps
   - The flow rate of he separation media is typically around 60-100ml/hr
8. High voltage power supply
   - 100 to 240 V/ 450 watts
9. Operating manual with the latest application protocols
   - Instrument performance test and SOP
10. Dimension
    - 50cm wide x 60cm deep x 70cm height

Key features:

1. Broad mass rang
   - Peptides / protein to cellular organelles
2. High sample recovery
   - Nearly 100%, if the run time and sample amount are not at the lower limit
3. High sample throughput
   - Upper limit 50mg/hr for a single process, or 200 mg/hr for manifold in 30 minutes
4. High run-to-run reproducibility
5. Matrix-free fractionation
   - Non-specific protein losses to separation matrices are eliminated
6. Adjustable for a variety of fractionation tasks
7. Versatile fractionation modes:

- IEF (pH3-12), EZ and ITP

8. High resolution of fractionation
   - Extraordinary 96 discrete pH cuts of 0.1 pH units or less
9. Fast fractionations
   - Within only 30 minutes for separation & fractionation
10. Continuous application of samples
    - Sample application rate 1-10ml/hr, lowest possible staring sample volume 80-100ul
11. Compatible
    - With most concentration procedure (ultrafiltration) separation techniques (2D-PAGE, IEF-PAGE) and analytical methods (LC/MS, HPLC, Arrays/Chips) and others.
12. User friendly with integrated controls
    - SPADNS
13. Preparative as well as analytical operation modes
14. Can be run under native or denaturing conditions

Main Operation Modes:

Isoelectric Focusing (IEF):	Focusing separation of species within a formed pH-gradient according to their isoelectric points (pI)
Zone Electrophoresis (ZE):	Non-focusing separation of species in a homogeneous medium according to their net charge density.
Isotachophoresis (ITP):	Separation of species according to their electrophoresis mobility.