

# Faster and easier charge heterogeneity analysis with ICE (Imaged Capillary Electrophoresis)

A banner for an Adebiotech conference. The background is light blue with a 3D molecular structure of a protein in shades of green and purple. On the left, the Adebiotech logo is in a blue circle. The main text is in red: "Stabilité et formulation des protéines et des peptides :". To the right, there is a white diamond-shaped graphic with a red border, containing icons of a pipette, a vial, and a test tube, with the word "PROTEINOV" written vertically inside. Below the diamond, the words "Enjeux et Applications" are written in red. At the top right, the dates "23 & 24 septembre 2015" are in blue. At the bottom, the location "BIOCITECH, CITÉ DES ENTREPRISES DE SANTÉ ET DE BIOTECHNOLOGIES, ROMAINVILLE" is written in small blue letters.

adebiotech

23 & 24 septembre 2015

Stabilité et formulation  
des protéines et des peptides :

PROTEINOV

Enjeux  
et  
Applications

BIOCITECH, CITÉ DES ENTREPRISES DE SANTÉ ET DE BIOTECHNOLOGIES, ROMAINVILLE



## **Chemical & Biochemical analysis**

Characterization, residual impurities, HPLC, GC, ICP-MS, SAA, ELISA, SDS PAGE



## **Microbiological tests**

Organism identification, sterility testing, bioburden, endotoxin, mycoplasma



## **Bioassay & biosafety**

Potency assay, residual DNA, viral safety and clearance



## **Cell banking & storage**

Preparation of master and working cell banks



## **Clinical Supply**

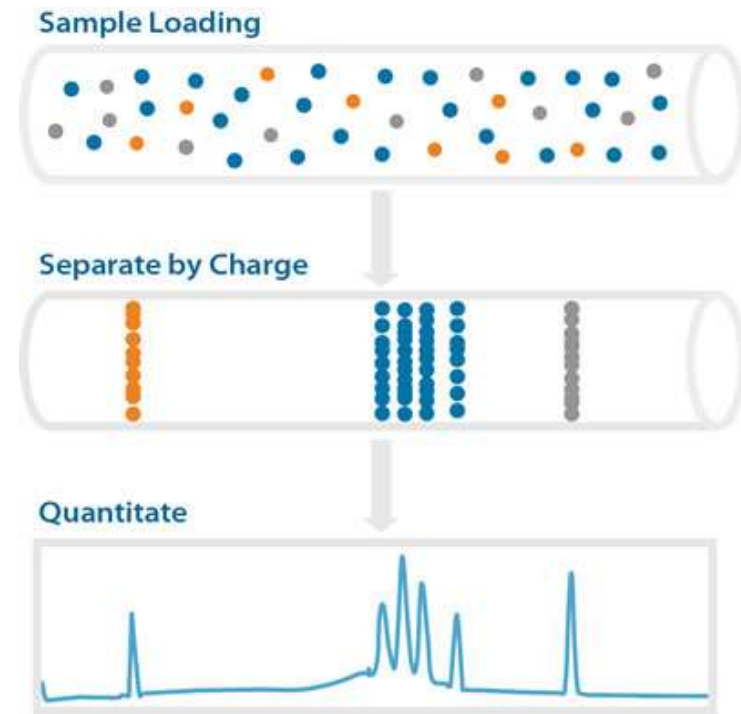
Batch importation & release, clinical manufacturing, storage and distribution

- Key characteristics are monitored as Critical Quality Attributes (CQAs) throughout bioprocess development
- Characteristics also used for setting specifications for stability and release testing
- Charge heterogeneity analysis is important in the characterization of monoclonal antibodies and other therapeutic proteins
- Charge heterogeneity can be caused by deamination, oxidation, amino acid modification, and post translational modifications

- **Characterization charge heterogeneity in proteins : capillary electrophoresis (CE)**
- **This technique is an extension of traditional electrophoresis methods such as SDS-PAGE and Western Blot**
- **Employing a capillary tube and automating the analysis**
- **Species are separated based on their size-to-charge ratio**
- **CQAs such as the isoelectric point (pI) and charge heterogeneity are measured utilizing a form of CE know as cIEF**

Performs free solution isoelectric focusing in a capillary column and detects focused protein zones using a whole column UV detector.

- Better resolution than traditional gel IEF
- advantage of quantification and automation found in column based separations
- Elimination of a mobilization step.



Source : ProteinSimple, ICE

Provides rapid (10min) and high resolution analysis providing simple and accurate quantitation of protein charge variants

# Charge Profile by icIEF

