

biotechne®

ProteinSimple Partner Showcase: *Even more* Innovation

Ed Chase, Senior Director
ProteinSimple

CE Pharm September 25, 2023

Even more Innovation

But first,

Thank you...

- for your support
- for your friendship
- for making the iCE the gold standard for cIEF
 - The technology
 - Superior application support (Jiaqi)
 - iCE Platform method – 2006 Xiaoping He, Pfizer

Even more Innovation

iCE280



1999



iCE3



2012



Maurice

"More-ice"



2016

Even more Innovation

The Maurice world, post 2016

- Empower driver & qualification to increase data integrity
- New CE-SDS Plus cartridge with superior performance (RR)
- 458 filter for DAR application
- Turbo cart
- Chromeleon Driver - *New*

Go fast with Turbo CE-SDS™ Cartridge



- Runs on Maurice – no need to purchase another instrument
 - 5x speed/output of regular CE-SDS to reduce time and cost
 - Same data quality to make decisions easily
- Introduced July 2022

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Application Notes, Publications since October 1, 2022

- Lentiviral Vector Characterization Made Easy with Maurice CE-SDS
- A Novel Platform for icIEF Fractionation of Antibody Charge Variants
- Characterize Your Viral Vectors from Discovery to GMP Release with Maurice™
- Simplify the Qualification of Your GMP Proteins with Maurice™
- Biotherapeutic Characterization from Discovery to Release With Maurice Turbo CE-SDS & CE-SDS PLUS
- Assessment of Product Quality in Upstream Process Development Using Maurice™ CE-SDS and icIEF

Application Notes, Publications since October 1, 2022

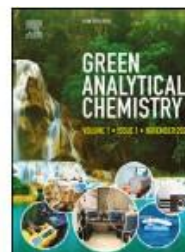
- Lentiviral Vector Characterization Made Easy with Maurice CE-SDS
- A Novel Platform for icIEF Fractionation of Antibody Charge Variants



Contents lists available at [ScienceDirect](#)

Green Analytical Chemistry

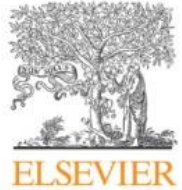
journal homepage: www.elsevier.com/locate/greeac



Establishment of a platform imaged capillary isoelectric focusing (icIEF) characterization method for adeno-associated virus (AAV) capsid proteins



Jiaqi Wu*, Chris Heger



Contents lists available at [ScienceDirect](#)

Trends in Analytical Chemistry

journal homepage: www.elsevier.com/locate/trac



Imaged capillary isoelectric focusing: Applications in the pharmaceutical industry and recent innovations of the technology

Jiaqi Wu ^{a,*}, Will McElroy ^a, Janusz Pawliszyn ^b, Christopher D. Heger ^a



DOI: 10.1002/elps.202300039

RESEARCH ARTICLE

ELECTROPHORESIS

Development of a highly sensitive imaged cIEF immunoassay for studying AAV capsid protein charge heterogeneity

Francisco Ramírez | Jiaqi Wu ^b | Charles Haitjema | Chris Heger

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MauriceFlex

One instrument, 1 s/w: multiple apps

- icIEF, CE-SDS (like Maurice)
- ***Fractionation of IEF isoforms – NEW***

Simplifies your workflow

Designed to be off line to MS

- Perform intact mass, peptide mapping
- Pool fractions if required, urea friendly
- MS Interface options – ZipChip and LC

Reduces instrument spending

Even more Innovation



MauriceFlex

Thank you

- Interest >2 years
- Offers to collaborate (>70)
- Purchase orders (2x forecast)

Even more Innovation

Our Technical Seminar

Even More Maurice Innovation as shared by your colleagues, including Protein Isoform Characterization and Bridging from iCE3 to Maurice™

Experience Bridging the ProteinSimple iCE3 and Maurice for Charge Heterogeneity Analysis – Whitney Gaynor, Lilly



Direct Identification and Characterization of Charge Variants by icIEF Fractionation & Mass Spectrometry - Amreen Jonas, Mersana Therapeutics



Enabling icIEF Peak Identification: AAV Capsid Protein Fractionation on MauriceFlex™ and Subsequent Analysis LC-MS - Xiaoping He and Sisi Huang, Pfizer, Inc.



Scientific Program Presentations

Development of an icIEF Assay for Monitoring AAV Capsid Proteins and Application to Gene Therapy Products - Xiaoping He, Pfizer - 13:45–15:15

Quantitation of Coxsackievirus A21 Viral Proteins in Mixtures of Empty and Full Capsids using Capillary Western - Richard Rustandi, Merck & Co. - 13:45–15:15

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Our posters

A Powerful Capillary Electrophoresis Platform for the Characterization of Viral Capsid Proteins used in Cell and Gene Therapies - Jiaqi Wu, Priyanka Sarkar, Will McElroy^ & Chris Heger^

An icIEF Method for Monitoring AAV Capsid Protein Deamidation & Application to Gene Therapy Products - John Orlet, Pfizer Inc.

Characterization of Oncolytic Virus Gebasaxturev and Quantification of Full/Empty Capsids & Virion Proteins - James Deng, Merck & Co.

Charge Heterogeneity Characterization of Multispecific Biotherapeutics by Fluorescence Analysis on Maurice - Caleen Dayaratna, Janssen Research and Development, LLC

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Our posters

Complete and Rapid Desialylation of Glycoproteins using Immobilized SialEXO –
Laurent Rieux*, Camilla Sivertsson*, Maria Nordgren#, Will McElroy^, Chris Heger^,
Andreas Nägeli# & Fredrik Olsson#

*Development of an Identity Test for Coxsackievirus A21 in Drug Substance and Drug Product
using Simple Western Technology -* Jessica Raffaele, Merck & Co.

*Uncovering a Mismatch: Fractionation of Bispecific Antibody Charge Variants by Maurice Flex™ and their
Identification Mass Spectrometry -* Srinivasa Rao^, Andreas Nägeli#, Laurent Rieux* &
Chris Heger^ # = Genovis AB, Lund, Sweden, ^ = ProteinSimple, a Bio-Techne Brand, San Jose, CA

Viral Vector Characterization with Maurice CE-SDS from Discovery to GMP Release –
Priyanka Sarkar^, Yasef Khan^ & Chris Heger^

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The ProteinSimple team at CE Pharm

- Baburaj Kunnummal Director, Product Management
- Chuck Faragasso Senior Account Executive Biologics
- Ed Chase Senior Director, Strategic Solutions
- Ed Pavina Account Executive Simple Westerns
- Jiaqi Wu Principal Scientist
- Melinda Mongelluzzo Manager, Tradeshow & Events Events
- Peter Johnson FAS Manager, Biologics BU
- Sherry Gregory Senior Sales Manager
- Srini Rao Staff Scientist. Applications Science
- Yasef Khan Product Manager Specialist

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Speaking of Jiaqi

- Co-inventor of iCE technology
- CE Pharm Lifetime Achievement Award
- Optimized assay conditions
2005: 250 2017: 3,000 today: ??
- AKA the **Godfather, the Chinese Elvis**



2008

Even more Innovation

Thank you!

*Please stop by our booth
and
say hi to the team*