



Advanced Electrophoresis Solutions Ltd.

Product Fact Sheets and Catalog

2025



Contents

Introduction.....3

Biopharma is currently leveraging a variety of new icIEF technologies to accelerate the development and manufacture release of biotherapeutics.

Differentiated Analytical icIEF.....6

With the upcoming discontinuation of iCE3, there are multiple alternatives to consider, providing the market with more competition and insurance.

icIEF-MS Coupling9

icIEF can finally be coupled directly to a variety of commercial mass spectrometers for the convenient identification of separated peaks.

References.....13

AES is enabling advanced icIEF methods which have been highlighted by the biopharma industry and the academic community.

icIEF Critical Reagents.....4

A wide selection of carrier ampholytes and other reagents to help optimize the resolution and consistency of complex proteins.

icIEF Fractionation.....8

Collect icIEF peaks in quantities suitable for peptide mapping, amino acid sequencing, potency assays, and more.

icIEF Services.....11

AES offers numerous services to help with method development, carrier ampholyte formulation, icIEF-MS, icIEF fractionation, and more.



Introduction

icIEF is a powerful tool for characterizing protein charge heterogeneity, and in particular, has become essential for monitoring the quality of monoclonal antibodies (mAbs). However, the icIEF landscape is rapidly changing:

- a) There is a growing need to understand, in great detail, the modifications underlying each charge variant, as this information can help avoid costly delays during the late stages of development and manufacturing.
- b) Emerging modalities like ADCs, fusion proteins, and AAVs have demonstrated great potential, but their complexity challenges the limits of existing charge variant characterization methods.
- c) A heightened awareness of instrument discontinuation and critical reagent shortages have highlighted the need for a greater selection of icIEF vendors.

In response to these industry demands, many companies have been reconsidering their current approach and evaluating more advanced icIEF tools. Throughout this transition, AES has been actively supporting customers with various products and services:

- a) **CEInfinite.** Run analytical and preparative icIEF with confidence, and begin to identify the modifications hidden beneath each charge variant peak (Fig 1).
- b) **Critical Reagents.** Simplify the analysis of complex samples by leveraging the next generation of carrier ampholytes, pI markers, etc (Fig 2).



Fig 1. The CEInfinite can flexibly switch between analytical icIEF, icIEF fractionation, and icIEF-MS.

c) **Advanced Solutions.** AES is much more than an icIEF vendor. We are a reliable partner committed to ensuring all aspects of your icIEF operations run smoothly and consistently. With our expertise and resources, we can help you address your most urgent challenges. As biopharma increasingly relies on icIEF and technical demands grow more complex, the benefits of partnering with AES will become even more apparent.

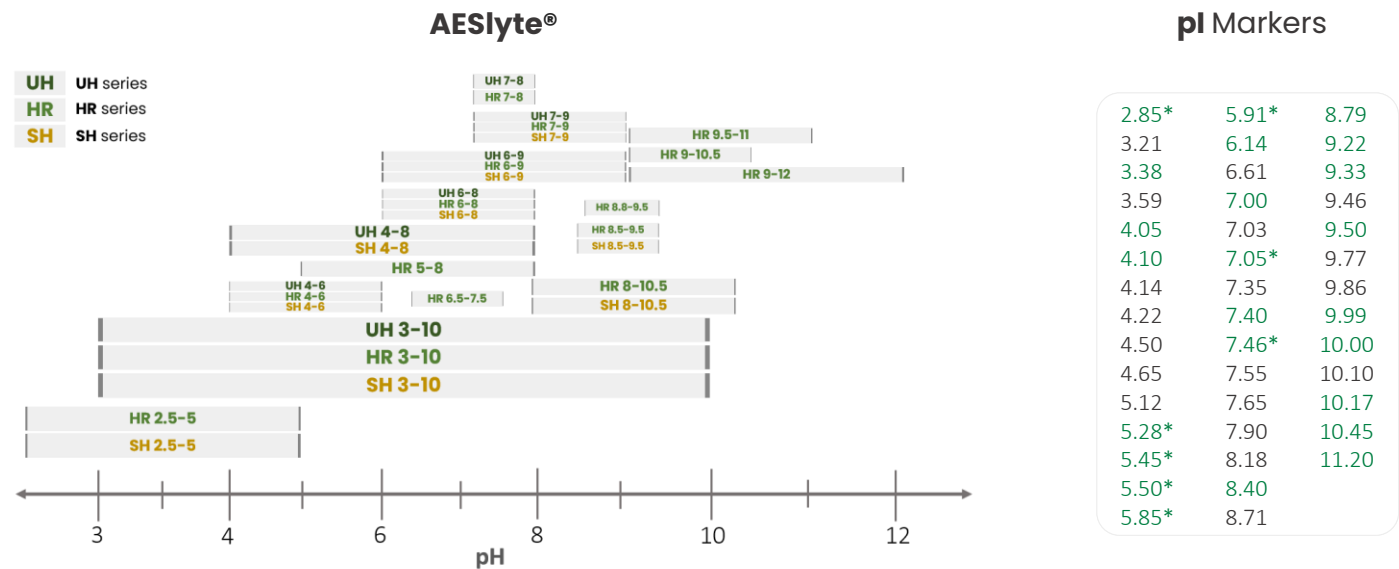


Fig 2. There is a wide selection of both broad and narrow range carrier ampholytes. The HR, SH, and UH AESlytes® each have different molecular properties that can be leveraged to optimize icIEF resolution for specific samples. There is also a wide selection of pI markers, with the ones highlighted in green representing fluorescent molecules, and the ones marked with an asterisk (*) representing those that are resistant to digestion by the carboxypeptidase B (CpB) enzyme.

Reliable critical reagents

The Industry Challenges. icIEF is known for its simple method development. The standard master mix can be finely tuned in a day, and trusted to separate most monoclonal antibodies.

However, with the emergence of more complex modalities like bispecific antibodies, fusion proteins, antibody/drug conjugates (ADCs), adeno-associated viruses (AAVs), and lipid nanoparticles, many of the technical difficulties affecting performance have been magnified, including solubility, pH gradient resolution, capillary wall adsorption, background interference, lot-to-lot consistency, and more.

If the charge heterogeneity of these complex samples cannot be adequately resolved, or if reproducibility issues arise during quality control, this will undoubtedly delay their release. Consequently, there is an urgency to develop a wider selection of critical reagents for a more tailored approach to method development. In general, more choice would also help ease concerns related to supply chain disruptions after their vulnerability was exposed during the recent pandemic.

The Advanced Electrophoresis Solution. AES has been meeting these industry demands by leveraging a deep understanding of icIEF and developing an innovative approach to chemical design and synthesis.

→ **AESlyte®.** Critical reagents as ampholytes influence the resolution and reliability of icIEF, and their availability and quality are essential to the success of biopharma operations.

There are 3 different carrier ampholyte series to choose from, and each includes a variety of narrow pH ranges for increased resolution (Fig 2). The HR series delivers results similar to that of Pharmalyte® while providing outstanding lot-to-lot consistency^{15,16}. The SH and UH series can be used independently or mixed with the HR series. The UH series, in particular, consists of entirely new molecular structures with unmatched resolution (Fig 3).

→ **Capillary Coatings.** In addition to the hydrophobic fluorocarbon (FC) coating, there are durable hydrophilic coatings made from either acrylamide derivative (AD) or methylcellulose (MC). These coatings expand the diversity of samples that can be analyzed by icIEF while eliminating the need for MC in solution, thereby avoiding issues like pre-rinse, bubble formation, and capillary clogging.⁹

→ **pI Markers.** There are 40+ markers ranging from 2.85 to 11.2 (Fig 2). Many are fluorescent, and several are resistant to carboxypeptidase B (CpB) enzyme digestion.

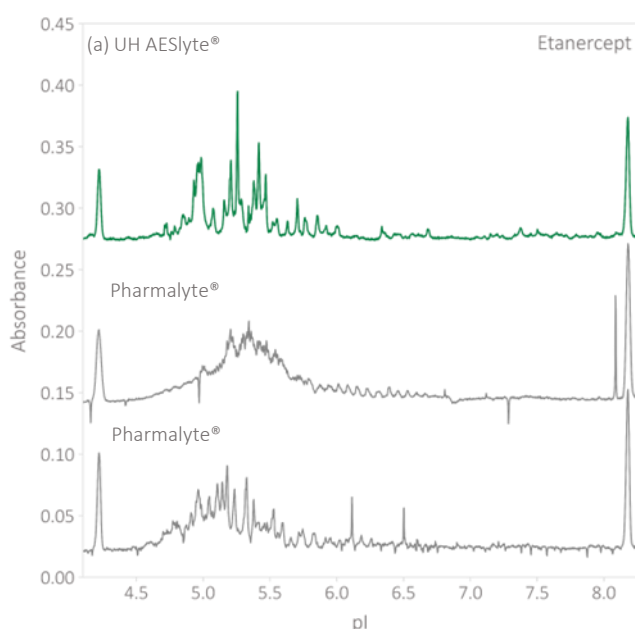
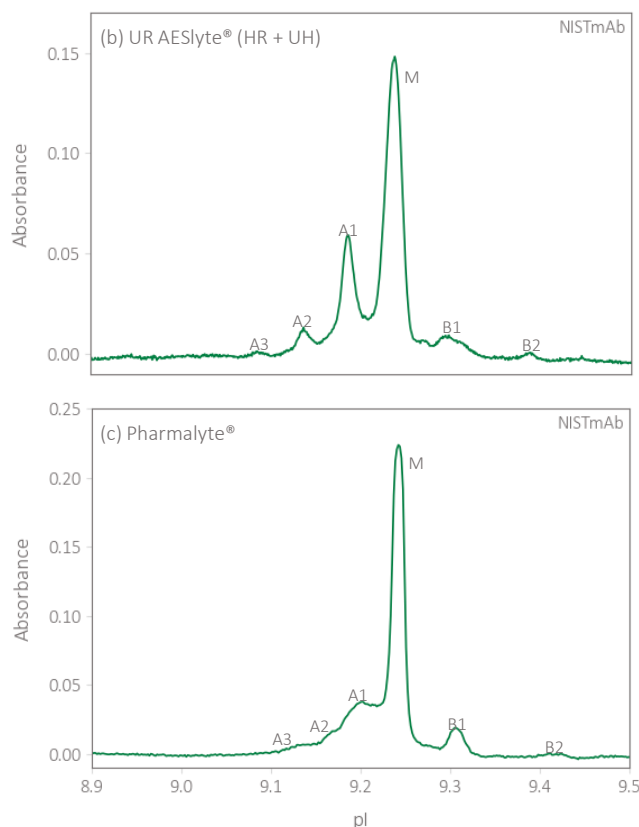


Fig 3. (a) icIEF profile for the fusion protein Etanercept using different carrier ampholytes. Note the outstanding baseline resolution for UH AESlyte®. (b) and (c) The icIEF profile using UR AESlyte® and Pharmalyte, respectively. The UR AESlyte® is a combination of HR and UH AESlyte®, and it is clear that the resolution is substantially improved.



AESlytes® and pI marker List

HR AESlyte® Part# 5 mL

2.5 → 5	101013
3 → 7	101046
3 → 10	101016
4 → 6	101040
5 → 8	101014
6 → 8	101041
6 → 9	101017
6.5 → 7.5	101048
7 → 8	101019
7 → 9	101011
7.5 → 8.5	101075
8 → 10.5	101015
8.5 → 9.5	101018
8.8 → 9.5	101042
9 → 10.5	101043
9.5 → 11	101044
9 → 12	101047

SH AESlyte® Part# 5 mL

2.5 → 5	101023
3 → 10	101026
4 → 6	101030
4 → 8	101024
6 → 8	101031
6 → 9	101027
7 → 8	101029
7 → 9	101021
8 → 10.5	101025
8 → 9	101032
8.5 → 9.5	101028

UH AESlyte® Part# 5 mL

2.5 → 5	101063
3 → 10	101066
4 → 8	101074
4 → 10	101072
4 → 5	101064
4 → 6	101070
6 → 9	101067
7 → 8	101069
7 → 9	101071
8 → 10.5	101065
8.5 → 9.5	101068

pI Markers Part# 250 µL

2.85*	100201	6.14	100214	9.33	100225
3.21	100202	6.61	100215	9.46	100226
3.38	100234	7.00	100216	9.50	100227
3.59	100203	7.03	100231	9.77	100228
4.05	100242	7.05*	100216	9.86	100239
4.10	100204	7.35	100233	9.99	100236
4.14	100205	7.40	100217	10.00	100238
4.22	100206	7.46*	100243	10.10	100229
4.50	100240	7.55	100218	10.17	100237
4.65	100207	7.65	100219	10.45	100230
5.12	100209	7.90	100220	11.20	100241
5.28*	100235	8.18	100221		
5.45*	100258	8.40	100222		
5.50*	100210	8.71	100232		
5.85*	100211	8.79	100223		
5.91*	100212	9.22	100224		

Green = fluorescent
*CpB enzyme resistant



Order online:
www.aeslifesciences.com

Differentiated Analytical icIEF

Overview of Capabilities for icIEF on CEInfinite

Software Control

✓ **Industry Standard**
Control via Chromeleon™
and Empower™ available.

✓ **Compliance Ready**
CEInfinite software enabling
21 CFR Part 11 compliance.

✓ **Automation**
96-well plate autosampler
for unattended operation.

Dedicated AES Consumables

✓ **Reproducibility**
Stringent lot-to-lot
manufacturing controls.

✓ **Coated Capillaries**
200+ runs for FC coating,
50+ runs for AD and MC.

✓ **Robust Supply Chain**
Supply agreements available
for AESlytes® and more.

Capability and Support

✓ **Preparative icIEF**
Upgrade for fractionation
and icIEF-MS capabilities.

✓ **Reliability**
Simple design minimizes
potential failure points.

✓ **Long Term Support**
Avoid the uncertainty of
technology discontinuation.

icIEF on CEInfinite for USP mAbs

(a)	Apparent Main pI			Acidic Area			Main Area			Basic Area		
	Average	SD	%RSD	Average	SD	%RSD	Average	SD	%RSD	Average	SD	%RSD
NISTmAb	9.24	0.0016	0.018	31.1%	0.48	1.56	59.9%	0.72	1.21	9.1%	0.21	2.35
USP mAb001	9.20	0.007	0.076	36.5%	0.67	1.84	56.9%	0.63	1.11	6.6%	0.23	3.50
USP mAb002	7.94	0.012	0.145	24.4%	0.17	8.05	71.3%	0.33	0.47	4.3%	0.12	6.43
USP mAb003	7.87	0.015	0.192	17.6%	0.57	6.92	63.1%	0.56	0.89	19.4%	0.20	0.65

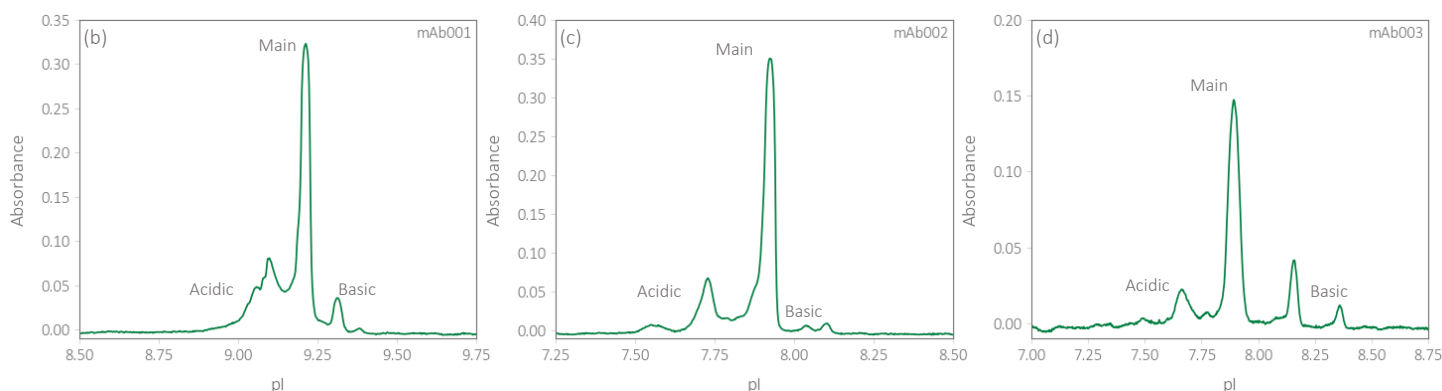
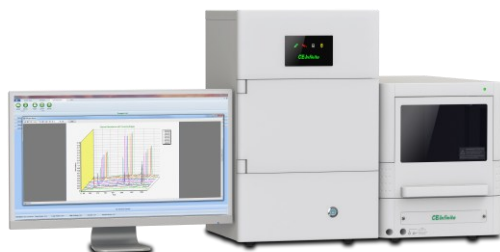


Fig 4. (a) A summary of icIEF data averaged over 6 consecutive runs with the CEInfinite for different monoclonal antibody reference standards. The methods were chosen according to similar evaluations by iCE3 and Maurice,¹⁷⁻¹⁹ and the results are comparable. The corresponding icIEF profiles for the USP samples (a) mAb001, (b) mAb002, and (c) mAb003 are shown above, while the NISTmAb profile can be found in Fig 3c. Please contact AES for further information on the materials, methods, and data analysis.

Analytical icIEF model

Part# CE10002



- Seamless icIEF platform method transfer from iCE3™ and Maurice™.
- 21 CFR Part 11 compliance ready.
- GMP friendly.
- Chromeleon™ and Empower™ control ready, for QC and regulation filing.
- Life-time support.

Analytical icIEF consumables and kits



Cartridges

Part#	Coating	Info
CP00201	FC-Fluorocarbon Hydrophobic	Analytical
CP00202	FC-Fluorocarbon Hydrophobic	Analytical High sensitivity
CP00301	AD-Acrylamide derivative Hydrophilic	Analytical
CP00302	AD-Acrylamide derivative Hydrophilic	Analytical High sensitivity
CP00501	MC-Methylcellulose Very hydrophilic	Analytical

Kits

Part#	Info
101003	1.0% Methyl Cellulose (MC), 100 mL
101005	0.5% Methyl Cellulose (MC), 100 mL
201051	icIEF/CEInfinite System Suitability Kit with Hemo, for all icIEF platforms, 500 uLx10.
101010	Electrolyte Solutions kit (Anolyte, Catholyte), 100 mLx2.
100051	icIEF/CEInfinite Analytical System Test Kit with 6 pl mark mixture, 25 mL.
SV00801	PP, 300uL Sample Vial, Snap Ring, 100/pack with pre-cut caps.

Contact: info@aeslifesciences.com for more parts.

icIEF Fractionation

Overview of Capabilities for icIEF Fractionation on CEInfinite

Throughput

✓ Reproducibility

Pressure mobilization and durable capillary coatings.

✓ Automation

Pool fractions over consecutive unattended runs.

✓ High Throughput

Collect ~100 µg of sample per day.

Versatility

✓ Dynamic Fractionation

Custom selection via software for each fraction interval.

✓ Method Development

45 min/run to rapidly optimize fraction purity.

✓ Reverse Polarity

Elute acidic fractions first for improved purity.

Dedicated AES Consumables

✓ CEInfinite Coatings

Optimize mobilization with AD, MC, and FC coatings.

✓ Prep Cartridge Lifetime

50+ runs for most samples with no upper limit.

✓ AESlytes®

Narrow-range AESlytes® to optimize fraction purity (p7).

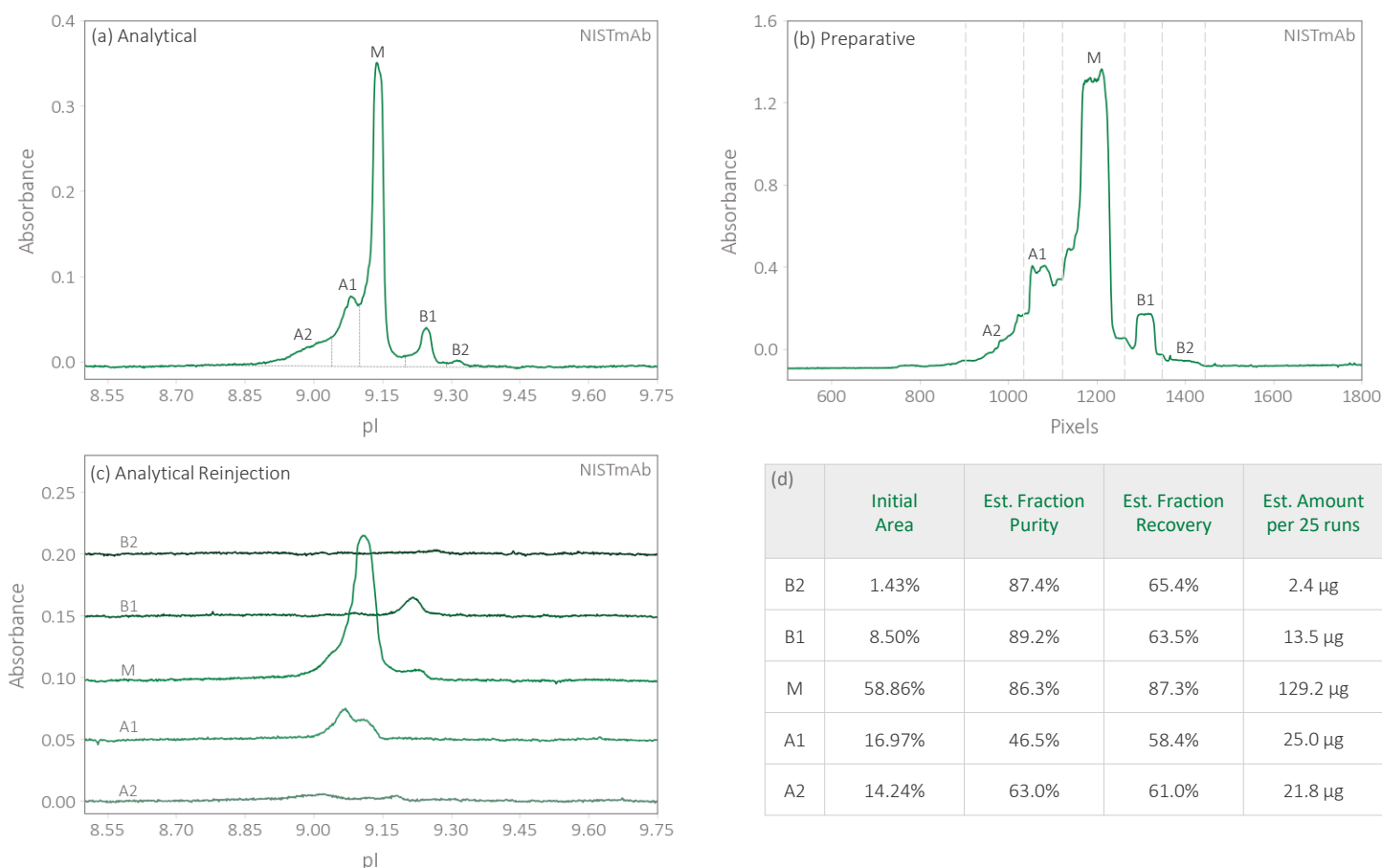


Fig 5. (a) The NISTmAb icIEF profile using the analytical capillary cartridge (100 µm diameter). (b) The NISTmAb icIEF profile using the preparative capillary cartridge (320 µm diameter). This is before pressure mobilization, with the different regions selected for fractionation. (c) The icIEF profile of the collected fractions reinjected into the analytical cartridge. (d) An estimation of the fraction purity, recovery, and quantity calculated based on the a starting concentration of 2.5 mg/mL in a 4.02 µL capillary. The recovery estimation assumes no sample loss during transfer to the collection vials.

icIEF-MS Coupling

→ **Resolution and Reliability.** The pressure mobilization and transfer capillary, along with a carefully designed icIEF-MS interface, have enabled robust performance.

→ **Critical Reagents.** AES has leveraged its expertise in chemical synthesis to develop carrier ampholytes and permanent MC coatings for better electrospray ionization.

→ **MS Instrument Compatibility.** The platform works with various MS brands, including Thermo Fisher, Waters, and Agilent. That said, it performs best when used with the Thermo Scientific Q Exactive Plus and a nanospray emitter.

→ **Seamless Method Transfer.** Switch between analytical icIEF, fractionation, and icIEF-MS with limited changes to the cartridge and method. As a result, this instrument provides a highly flexible icIEF strategy.

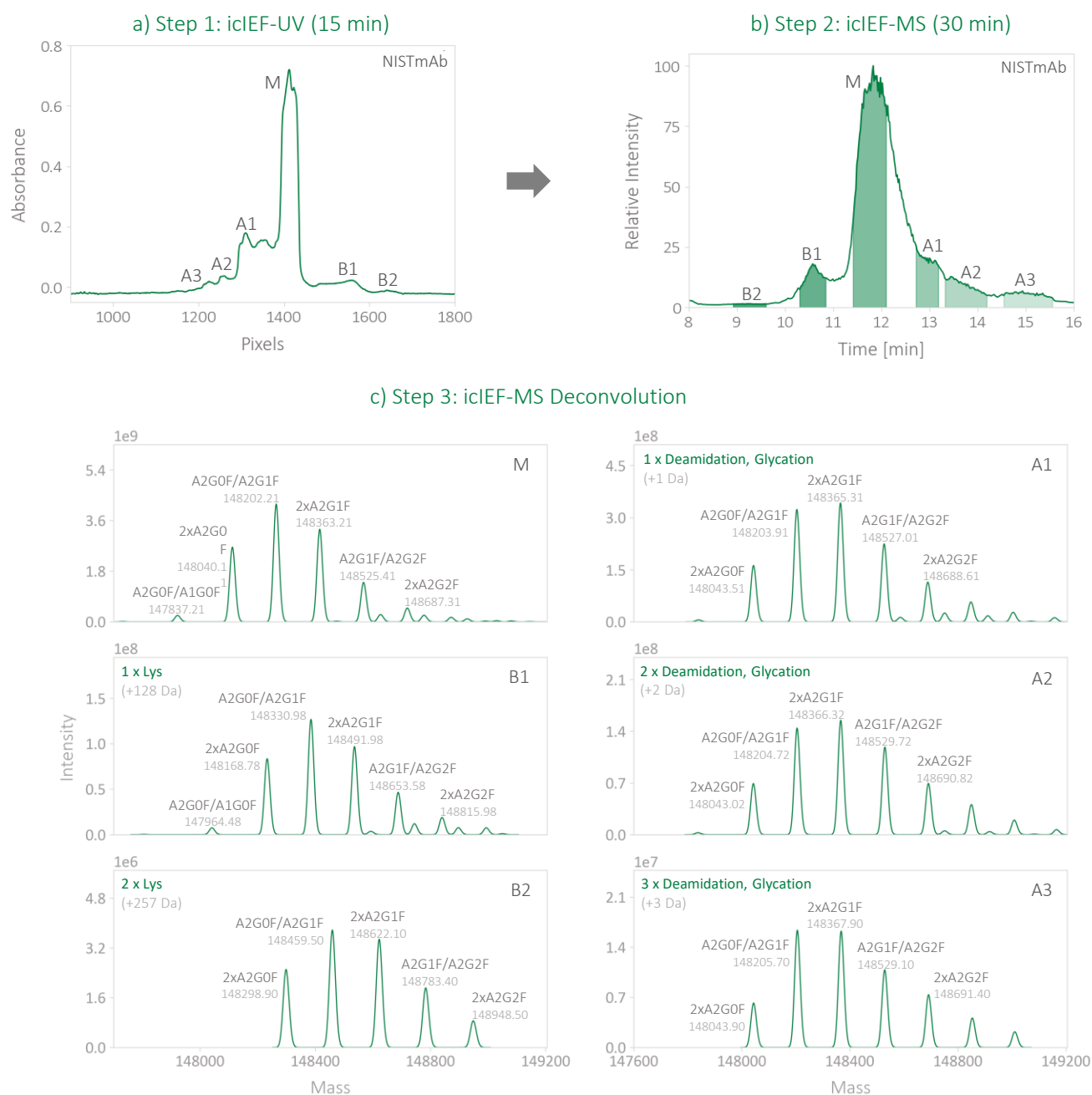
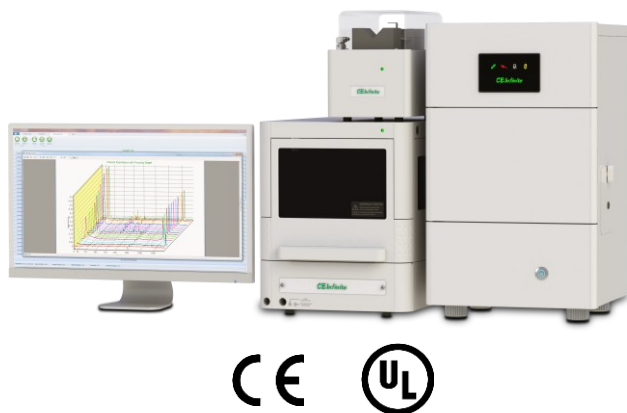


Fig 6. a) An icIEF profile before mobilization and direct MS coupling. b) Total ion electropherogram (TIE) from MS with the corresponding icIEF peaks. c) The deconvolution of each icIEF region which highlights a variety of critical quality attributes (CQAs) including charge heterogeneity, glycosylation, deamidation, and C-terminal lysines.

Multifunction icIEF Preparative model

Part# CE30003



- icIEF fractionation and icIEF-MS online.
- Fraction peaks < 0.1 pI, purity up to 99%.
- Reverse polarity for enhanced acidic species fraction.
- High yield fractionation up to 1mg per day*.
- Chromeleon™ control icIEF-MS, advanced capabilities with Nano ESI or Native MS.
- Life-time support.

*Depending on sample.

Preparative icIEF Consumables and Kits



Cartridges

Part#	Coating	Info
CP00207P	FC-Fluorocarbon Hydrophobic	Auto fractionation
CP00307P	AD-Acrylamide derivative Hydrophilic	Auto fractionation
CP00303M	AD-Acrylamide derivative Hydrophilic	icIEF-MS online
CP00507P	MC-Methylcellulose Very hydrophilic	Auto fractionation
CP00503M	MC-Methylcellulose Very hydrophilic	icIEF-MS online

Kits

Part#	Info
101002	Condition Solution, 5 mL
100052	icIEF/CEInfinite Fractionation System Test Kit,
101004	10mM Arginine Solution
101010	Electrolyte Solutions kit (Anolyte, Catholyte), 100 mLx2.
100052	icIEF/CEInfinite Fractionation System Test Kit, 30 mL.
SV00801	PP, 300uL Sample Vial, Snap Ring, 100/pack with pre-cut caps.

Contact : info@aeslifesicences.com for more parts.

icIEF Services

AES has built a state-of-the-art icIEF facility and developed a team of experienced scientists and engineers (Fig 7).

The Industry Challenges. The next generation of icIEF is upon us, and many are looking to access the most advanced tools. This is especially true as the industry places more of a premium on in-depth information, and becomes more ambitious in the development of therapeutics with complex charge profiles.

Maximizing the potential of these technologies can require a lot of time and resources, and everyone has a unique set of timelines when deciding to commit to such an investment.

The Advanced Electrophoresis Solutions. AES services are helping companies adapt to the next generation of icIEF, regardless of their current timelines. For example, this is a great option for high-priority projects that simply cannot wait. Alternatively, we can assist you with smaller projects as you look to become more familiar with our technology.

→ **Extensive Experience.** Our leadership has been heavily involved in the development of icIEF for several decades. Furthermore, we have a team of capable scientists and engineers who have been working through some of the industry's most difficult icIEF problems to date.

→ **Method Development.** We routinely support customers developing icIEF methods for complex samples. For example, we can recommend different carrier ampholytes, capillary coatings, and system parameters.

→ **High-Throughput Fractionation.** Several CEInfinite units are available at our facility, allowing us to rapidly collect more than 50 µg of each icIEF peak. We can then run buffer exchange on the fractions before freezing and returning them for further analysis.

→ **icIEF-MS and Peptide Mapping.** Our facility includes a Thermo Scientific Q Exactive Plus mass spectrometer to run icIEF-MS with excellent resolution and sensitivity (Fig 8). We also have a Thermo Scientific Vanquish UHPLC system for in-depth peptide mapping after fractionation.

→ **Custom Carrier Ampholytes.** Thanks to our unique understanding of their design and synthesis, we can help alleviate many of the concerns associated with carrier ampholytes: a) custom formulations for optimal stability and resolution, b) profile matching of existing icIEF curves, c) guaranteed lot-to-lot consistency, d) resupply services, and e) regulatory filing support.

→ **Instrument Evaluation.** We are happy to accept samples from those who want to test the CEInfinite.

Part#	Item	Delivery Time	Sample Requirements	Standard Delivery Results
300000	Service-Critical Reagent	Depending on customer request.		
300001	Service-Analytical	1-2 weeks	>500 µL; >1 mg/mL	For mAb, Bispecific, Trispecific, ADC, Enzyme, AAV, Fusion proteins and other complex molecules. Report: UV Spectra; Reproducibility of pls and peak areas.
300002	Service-Fractionation	4-8 weeks	Depending on customer request	Get three groups (Acidic, Main, Basic) 50 µg for each group; >60% purity. Fractions collections resend to customer. Report: including UV spectra and reinjection purity spectra.
300003	Service-icIEF-MS	2-6 weeks	>500 µL; >10 mg/ mL	Report: UV Spectra; MS TIC spectra; corresponding deconvolution result;
300004	Service-Peptide Mapping	>8 weeks	>500 µL; >10 mg/ mL	Report: UV Spectra; MS TIC spectra; corresponding deconvolution result; MS mapping results.

Table 1. list of icIEF charge variant services offered by AES.

CEInfinite icIEF Fractionation System Overview

Sample. A 30-35 μL volume is transferred from the autosampler to the icIEF cartridge.

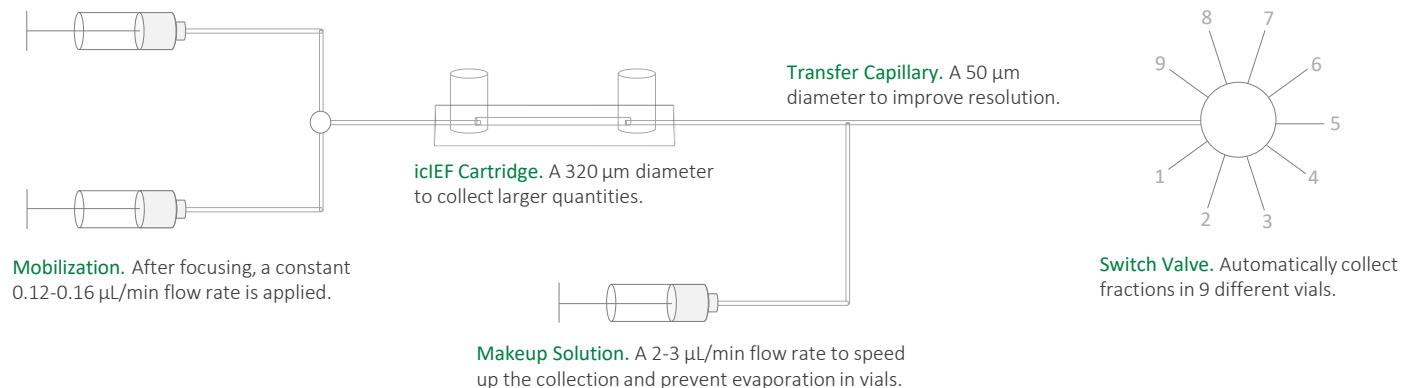


Fig 9. (a) An overview of the CEInfinite fractionation system. The sample is loaded in the autosampler before being transferred to the icIEF cartridge. The capillary diameter is increased from 100 μm to 320 μm to increase the amount of sample collected. The separation takes place for 10-20 minutes before the mobilization is activated. At this point, the charge variant peaks move toward the transfer capillary while the specific regions are defined for collection. The software calculates the time it takes for each region to reach the switch valve, which then adjusts automatically to direct the fractions into their respective vials. (b) The icIEF-MS system is a similar setup with the following exceptions. The icIEF cartridge has a 200 μm diameter. The make-up solution includes acetonitrile and formic acid for better electrospray ionization efficiency. Finally, the switch valve is replaced with direct coupling to a mass spectrometer.



Fig 10. AES' IDTT (Inner Diameter Transfer Technology) patent. As the charge variant zones go from the 320 μm diameter icIEF capillary to the 50 μm diameter transfer capillary, the separation distance will increase by approximately 41 times, and therefore reduce the cross-contamination caused by molecular diffusion and the parabolic velocity flow profile. The pressure mobilization enables excellent consistency and speed while avoiding the chemical mobilization additives that can cause instabilities related to Joule heating and pH gradient disruption. The last peaks to elute will have the worst purity due to the extra-column effects influencing the preceding samples. Fortunately, pressure mobilization also supports reversed polarity to allow the acidic variants to elute first for a higher purity.

References

Biopharma Industry

1. AbbVie at Antibody Drug Conjugates 2023.

E. Jang. Characterization of Antibody Drug Conjugate Charge Variants by icIEF Fractionation.

2. Regeneron at ASMS 2022.

T. Xing, et al. Comparing Ion Exchange Chromatography and Capillary Isoelectric Focusing as Front-End Separation Techniques for Mass Spectrometry-Based Charge Variant Analysis of Therapeutic mAbs.

3. Bristol Myers Squibb at CE Pharm 2022.

Q. Wang, et al. Charge Variant Characterization of Therapeutic Proteins using Preparative icIEF and Mass Spectrometry.

Academic Community

4. Journal of Separation Science 2023.

K. Maráková, et al. Capillary electrophoresis-mass spectrometry for intact protein analysis: Pharmaceutical and biomedical applications (2018–March 2023). 46, 2300244.

5. Trends in Analytical Chemistry 2023.

S. Hartung, et al. Performance of capillary electrophoresis instruments - State of the art and outlook. 163, 117056.

6. Trends in Analytical Analysis 2023.

B.L. Karger. Perspectives on capillary electrophoresis. 167, 117215.

7. Electrophoresis 2023.

F. Krebs, et al. Strategies for capillary electrophoresis: Method development and validation for pharmaceutical and biological applications—Updated and completely revised edition. 44, 1279–1341.

AES and collaborators

8. Analytical Biochemistry 2023.

T. Kwok, et al. Imaged capillary isoelectric focusing tandem high-resolution mass spectrometry using nano electrospray ionization (ESI) for protein heterogeneity characterization. 680, 115312.

9. Separation Science Plus 2023.

T. Kwok, et al. Imaged capillary isoelectric focusing employing fluorocarbon and methylcellulose coated fused silica capillary for characterization of charge heterogeneity of protein biopharmaceuticals. 163, 117056.

10. Rapid Communications in Mass Spectrometry 2023.

W. Fan, et al. Integrating ultra-high-performance liquid chromatography tandem mass spectrometry and imaged capillary isoelectric focusing for in-depth characterization of complex fusion proteins. 37, e9484.

11. Analytical Methods 2023.

T. Kwok, et al. Fractionation and online mass spectrometry based on imaged capillary isoelectric focusing (icIEF) for characterizing charge heterogeneity of therapeutic antibody. 15, 411-418.

12. Analytical Chemistry 2023.

G. Wu, et al. Mass Spectrometry-Based Charge Heterogeneity Characterization of Therapeutic mAbs with Imaged Capillary Isoelectric Focusing and Ion-Exchange Chromatography as Separation Techniques. 95, 2548–2560.

13. Journal of Pharma. and Biomedical Analysis 2023.

X. Zhang, et al. Imaged capillary isoelectric focusing (icIEF) tandem high resolution mass spectrometry for charged heterogeneity of protein drugs in biopharmaceutical discovery. 224, 115178.

14. Analytical Biochemistry 2023.

X. Zhang, et al. Cutting-edge mass spectrometry strategy based on imaged capillary isoelectric focusing (icIEF) technology for characterizing charge heterogeneity of monoclonal antibody. 660, 114961.

15. Separation Science Plus 2022.

T. Kwok, et al. High-efficient characterization of complex protein drugs by imaged capillary isoelectric focusing. 6, 2200142.

16. Analytica Chimica Acta 2024

Gang Wu, et al. Mass spectrometry study on SARS-CoV-2 recombinant vaccine with comprehensive separation techniques to characterize complex heterogeneity. 1297 (2024) 342349.

17. Journal of Chromatography A 2024

Gang Wu, et al. In-depth characterization of a cysteine-linked ADC disitamab vedotin by multiple LC-MS analysis methods and cutting-edge imaged capillary isoelectric focusing coupled with native mass spectrometry. 1736 (2024) 465353.

18. ELECTROPHORESIS 2024

Xiaoxi Zhang, et al. Imaged capillary isoelectric focusing coupled to high-resolution mass spectrometry (icIEF-MS) for cysteine-linked antibody–drug conjugate (ADC) heterogeneity characterization under native condition. 1736 (2024) 465353.

Supporting Information

19. Agilent Application Note 2017.

C. Wenz. Comparison of Different Brands of Carrier Ampholytes for Monoclonal Antibody Charge Heterogeneity Analysis by Capillary Isoelectric Focusing.

20. Electrophoresis 2022.

S. Marden. Global intercompany assessment of ICIEF platform comparability for the characterization of therapeutic proteins. 43, 1050-1058.

21. US Pharmacopeia Technical Note 2023.

Charge Variant Analysis of USP Monoclonal Antibody Reference Standards.

22. US Pharmacopeia at CE Pharm 2022.

N. Peckham. Development and Characterization of Reference Standards to Support Analysis of Charge Variants.

Specifications

CEInfinite

Detection Mode	280nm absorbance
pI Range	2.5 – 11.5
Sensitivity (LOD)	3 ug/mL (Based on mAb)
Detection Dynamic Range	2 logs
High Voltage Range	0 – 3000 Volts (3 stages of focusing)
Sample Throughput	Up to 12 injections per hour
Minimum sample volume	15 uL
pI resolution	0.03 pI (3-10 ampholyte)
pI CV	<1%
CV for Peaks ≥ 10% composition	≤4%
Linearity	>0.995
Fractionation amount	Up to 10 µg isomer/run, 25-35 runs per 24 hours. (molecule-dependent)
Operation Mode	Automatic (Manual mode available)
Detector Noise	Less than 0.001 AU, 280 nm
Weight	30 pounds (14 kg)
Height x Width x Depth	54 cm x 33 cm x 30 cm

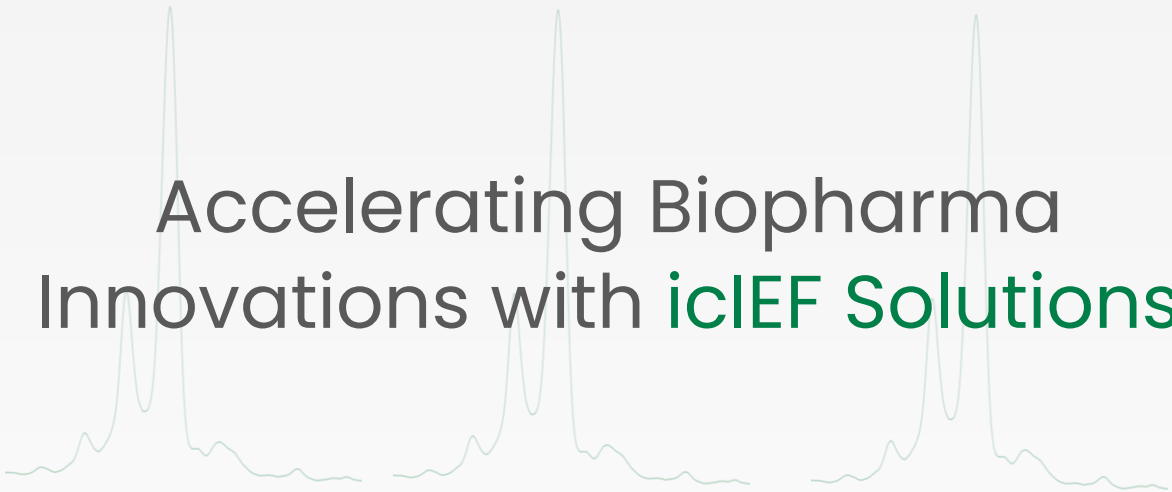
Auto-Sampler

Model	840
Sample Capacity	84+3 vial tray, 96 well plate
Sample Tray Temperature	4 - 40°C
Typical Sample Volume	15 µL
Electrical Requirement	95 – 240 VAC, 50 – 60 Hz
Height x Width x Depth	36 cm x 30 cm x 57.5 cm
Weight	46 pounds (21 kg)
Working Temperature	10 - 40°C
Humidity	20 – 80% RH

Injection Pump

Syringe Size	250 µL/5mL
Electrical Requirement	100 – 240 VAC, 50 – 60 Hz
Height x Width x Depth	12.14 cm x 10.8 cm x 24.1 cm
Weight	2.72 pounds (1.23kg)
Working Temperature	5 – 40°C





Accelerating Biopharma Innovations with icIEF Solutions



© 2025 Advanced Electrophoresis Solutions Ltd. All rights reserved.
AESlyte® is a registered trademark of Advanced Electrophoresis Solutions Ltd.
Empower™ is a trademark of Waters Corporation.
Chromeleon™ is a trademark of Thermo Fisher Scientific Inc.

Advanced Electrophoresis Solutions Ltd.
Unit 7&8, 380 Jamieson Parkway
Cambridge, Ontario
N3C 4N4 Canada
Phone: (519) 653-6888
Fax: (519) 804-4266
info@aeslifesciences.com