bio-techne®

Meet the Maurice Family

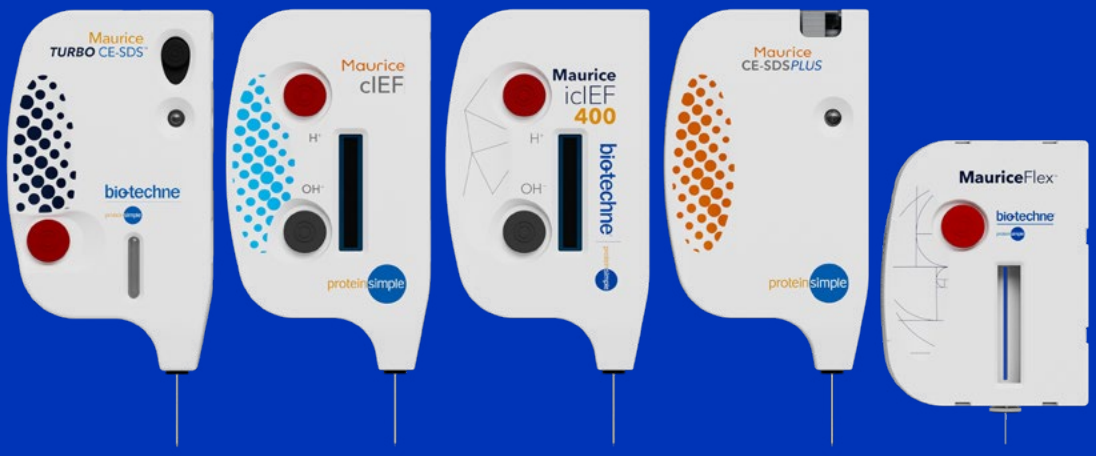
Accelerating Biotherapeutic Development Using Capillary Electrophoresis

Multiple Platforms to meet your specific needs

Choose your options:

- ✓ Analyze biomolecular charge with imaged capillary isoelectric focusing (icIEF)
- ✓ Analyze protein size and impurities with capillary electrophoresis-sodium dodecyl sulfate (CE-SDS)
- ✓ Collect charge isoform fractions with icIEF-based fractionation for further characterization

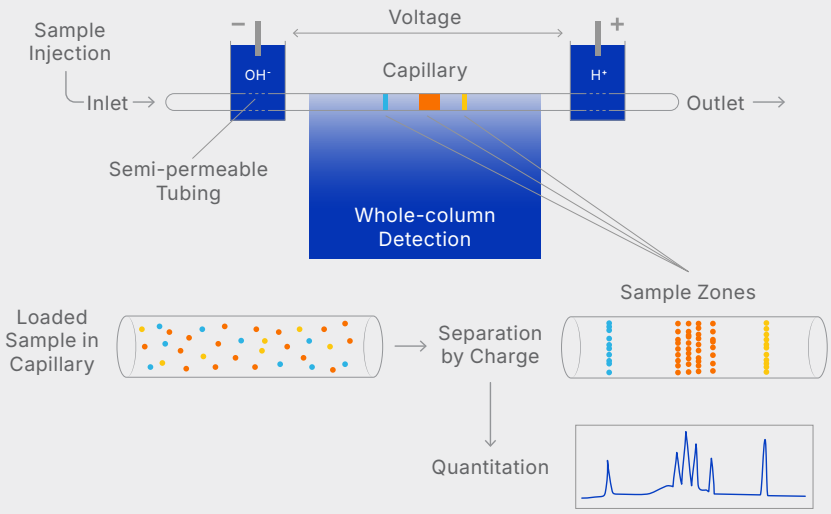
Learn More
Scan the QR Code or visit online:
bio-techne.com/maurice



Unleash the Power of Capillary Electrophoresis in Your Lab

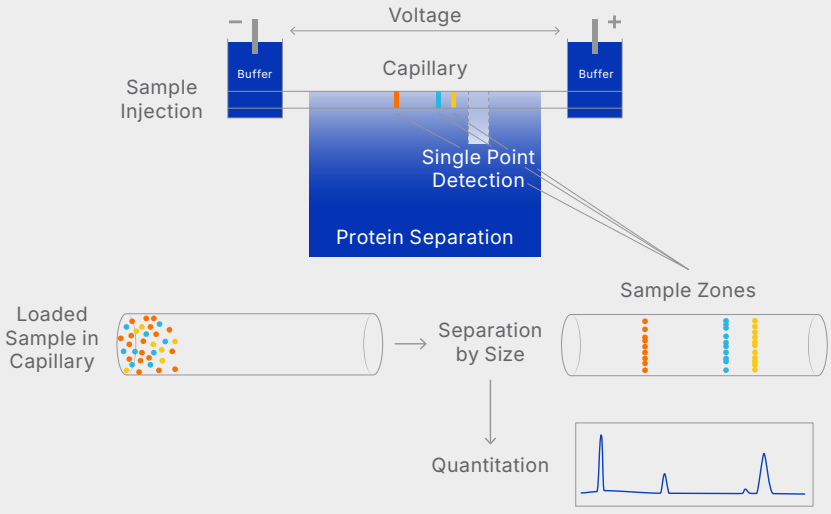
icIEF Technology

- ✓ Ensure consistent results with pre-assembled cartridges and automated sample injection
- ✓ Maintain high resolution with whole-column imaging
- ✓ Get high-quality data in 10-15 minutes



CE-SDS Technology

- ✓ Improve reproducibility with simplified sample prep and automated sample injection
- ✓ Go green and analyze samples without any acrylamide
- ✓ Get high-quality quantitative data in as little as 5.5 minutes



Choose the Right Maurice Instrument for Your Lab

System Capabilities:

Whether you need a single solution or multiple capabilities, our Maurice platforms offer a range of products to meet your needs—icIEF, CE-SDS, or both, plus fractionation.

TABLE 1.

Instrument System Capabilities

	MauriceFlex	Maurice	Maurice C.	Maurice S.
 **icIEF Fractionation**	✓			
 **icIEF (Both Cartridge)**	✓	✓	✓	
 **CE-SDS (Both Cartridges)**	✓	✓		✓
Absorbance Detections	✓	✓	✓	✓
Fluorescence Detection	✓	✓	✓	
On-Board Mixing		✓	✓	

FIGURE 1.

Injections 1 and 400

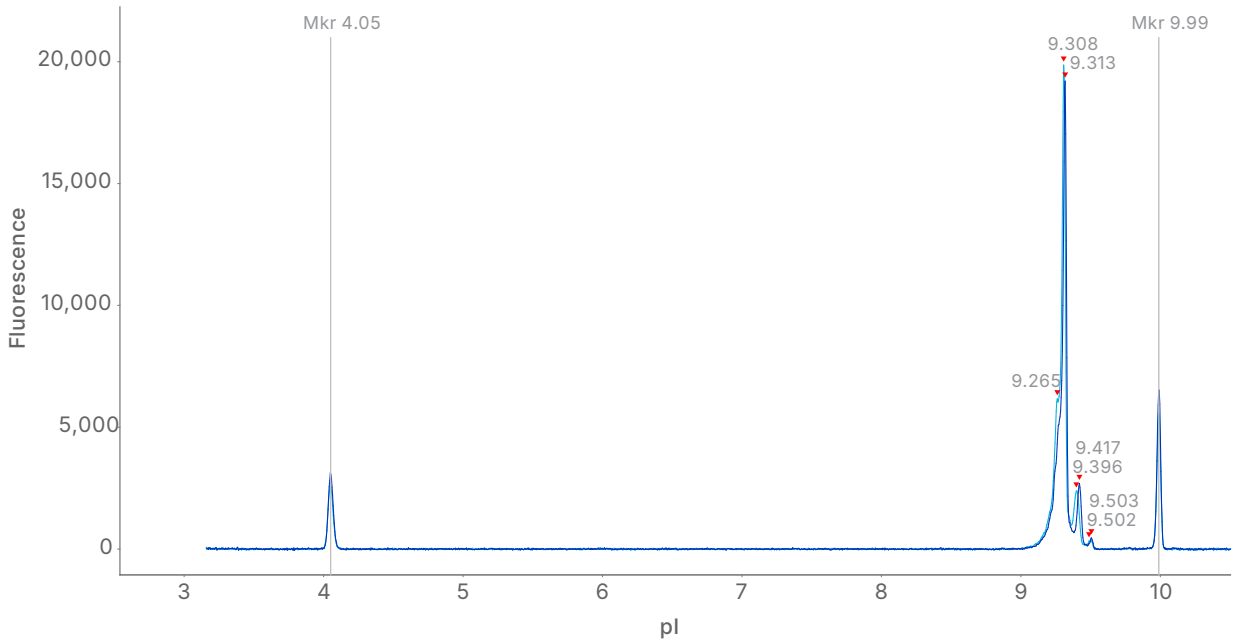


Figure 1. Overlay of the first and last injection of a batch analyzed with the icIEF 400 cartridge. The results are reproducible throughout the batch.

FIGURE 2.

Simplify Lab Life

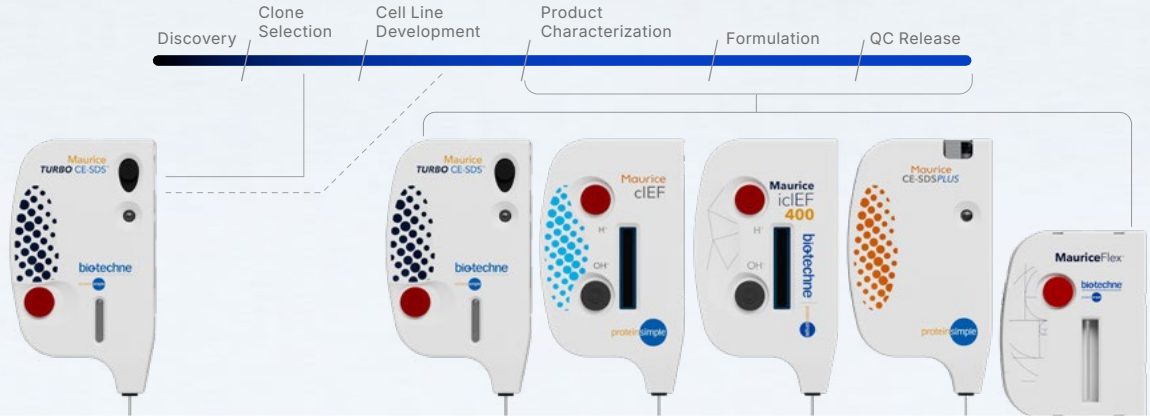
1. Insert cartridge

2. Add sample

3. Press start

Figure 2. Overview of the Maurice/MauriceFlex workflow. The plug-and-play systems reduce the amount of time and labor required to run experiments, while simultaneously ensuring data consistency.

Use Maurice/MauriceFlex Systems in Multiple Phases of Development



Fast, high-quality CE-SDS data for high throughput screening

- CE-SDS, icIEF, and icIEF fractionation for protein analysis
- Easy method transfer across stages
- 21 CFR Part 11 compliance

TABLE 2.

Overview of Consumables & Kits

Visit our website for a complete list of consumables & kits
bio-techne.com/ice-consumables

Product	Part Number
MauriceFlex cIEF Fractionation Cartridge	PS-MC02-F
Maurice icIEF 400 Cartridge	PS-MC02-400C
Maurice icIEF Cartridge	PS-MC02-C
Maurice Turbo CE-SDS Cartridge	PS-MC02-TS
Maurice CE-SDS PLUS Cartridge	PS-MC02-SP
MauriceFlex cIEF Fractionation Method Development Kit	PS-MDK01-F
Maurice cIEF Method Development Kit	PS-MDK01-C
Maurice CE-SDS PLUS Application Kit	PS-MAK03-S
Maurice Turbo CE-SDS Application Kit	PS-MAK01-TS

Maximize Your MauriceFlex

One Instrument Multiple Solutions Capabilities

Advantages:

- ✓ Run routine icIEF and CE-SDS assays
- ✓ Collect charge variant fractions (icIEF) for further characterization using mass spectrometry (MS) or surface plasmon resonance (SPR)
- ✓ Use any MS system of your choice for downstream characterization

Workflow: Fraction collection with MauriceFlex for downstream characterization using MS

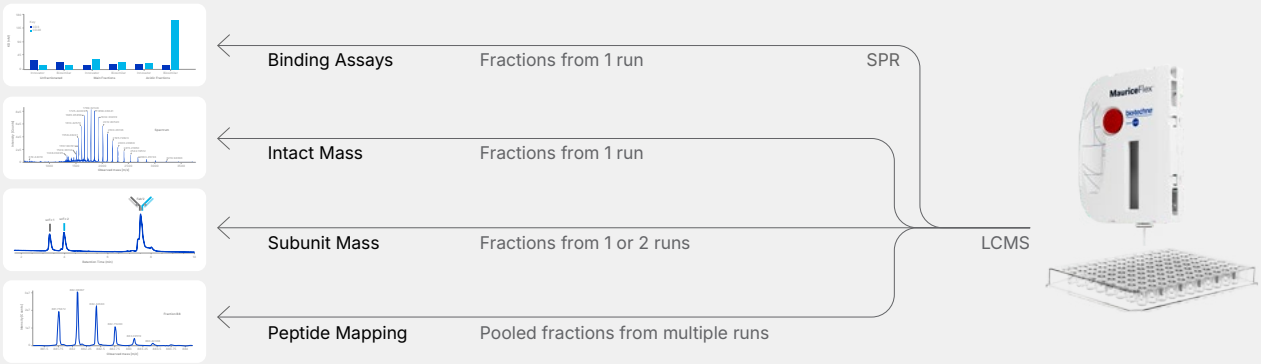


FIGURE 3.

Fraction Collection with MauriceFlex for Downstream Characterization with Mass Spectrometry

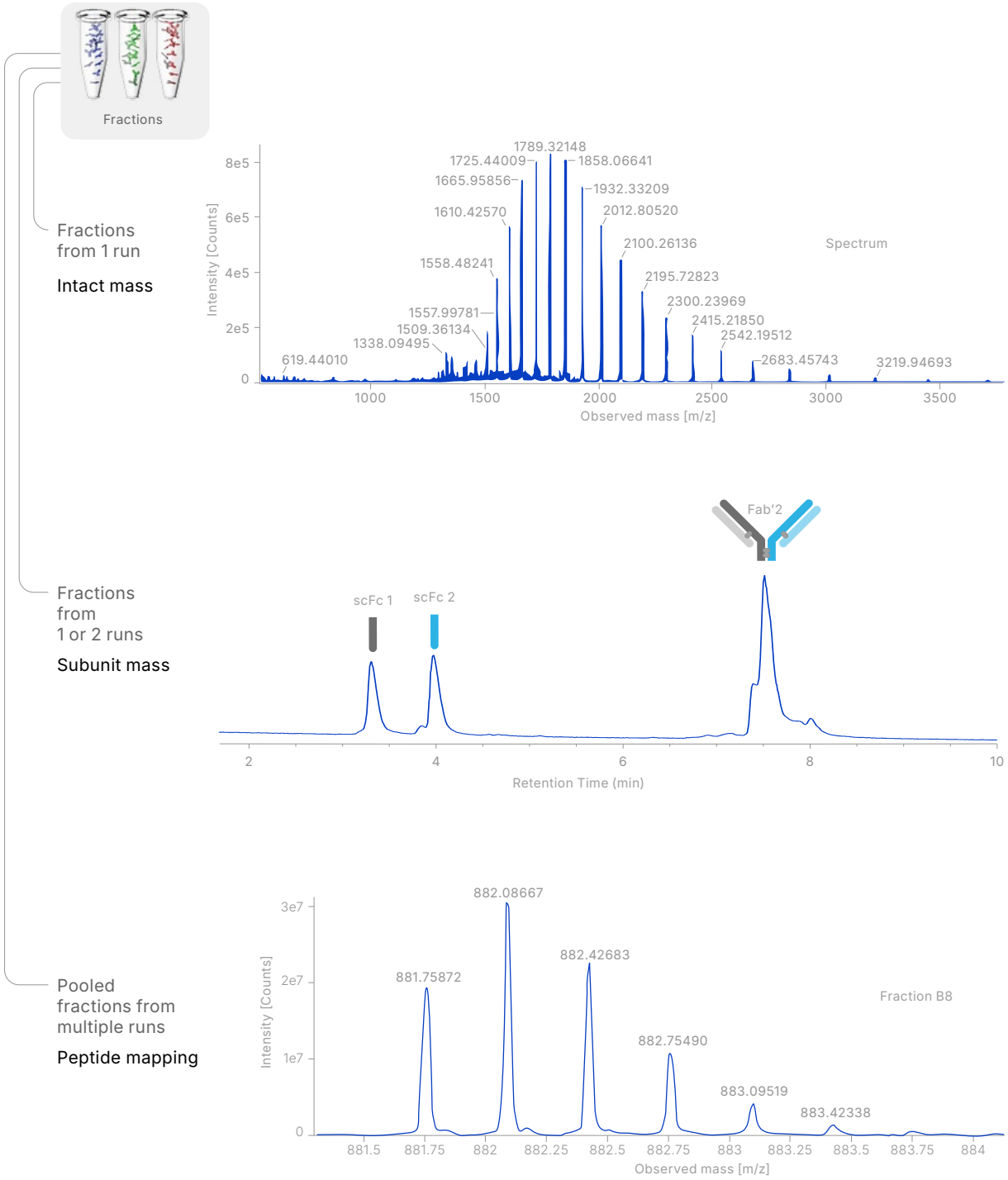
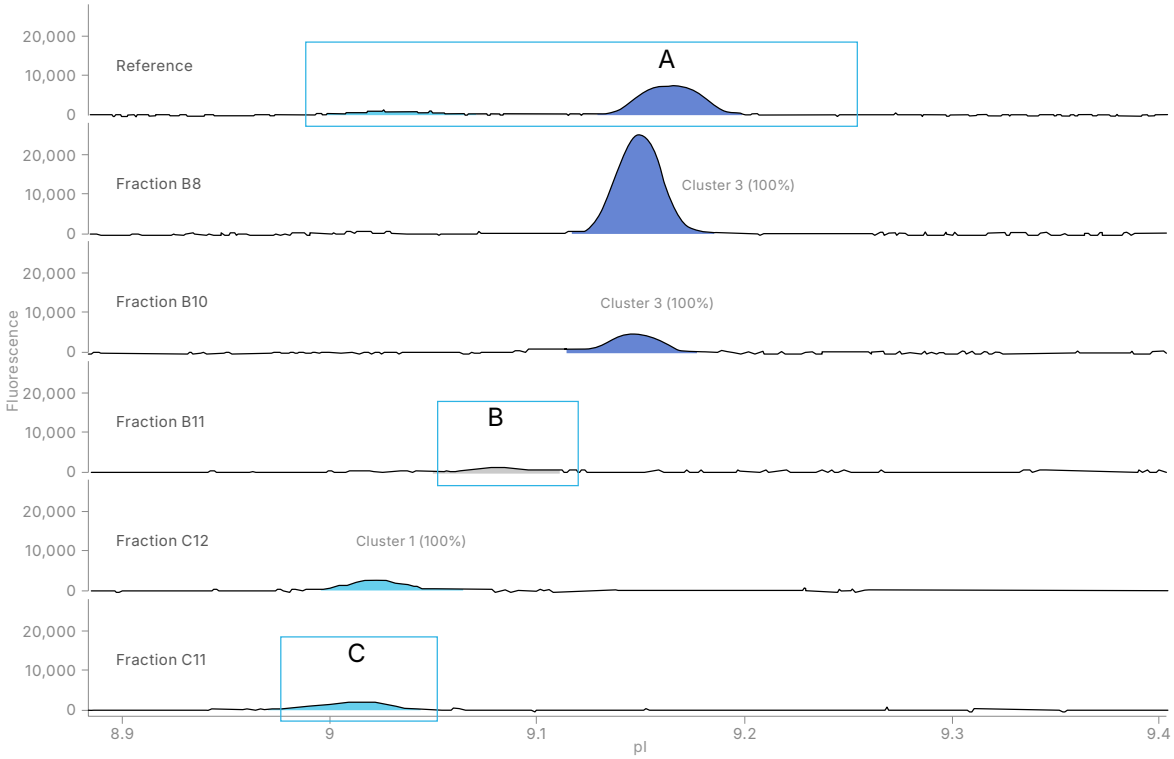


Figure 3. Intact mass and Peptide mapping data. Data referenced from T. Menneteau, *et al*, "Therapeutic Protein Charge Variant Characterization with Intact Mass and Peptide Mapping Following Microgram Preparative Capillary Isoelectric Focusing Electrophoresis Fractionation", 72nd Conference on Mass Spectrometry and Allied Topics, Anaheim, CA, USA, June 2024, Poster TP635.

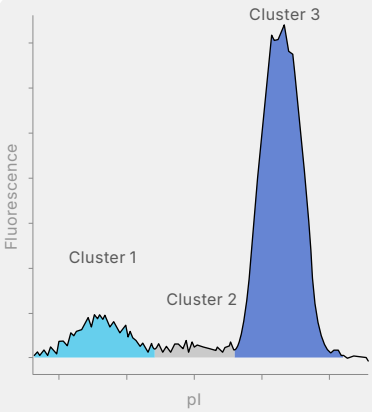
Subunit mass data taken from application note Comparing Charge Variants: Innovator vs Biosimilar Using the MauriceFlex System & Mass Spectrometry.

FIGURE 4.

Fractionation of 3 Charge Variant Clusters

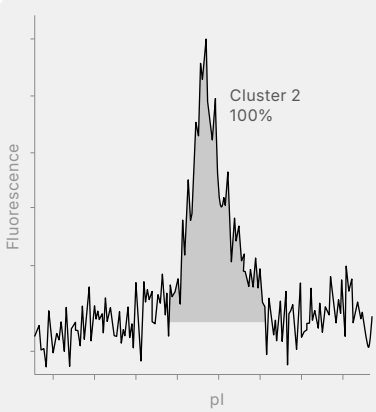


A. LC-MS



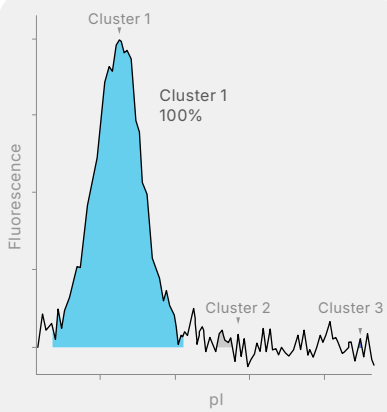
Acquity H-Class UHPLC + Xevo G2-XS QTOF
Gradient: 0.1% FA in ACN + 0.1 % FA in Water

B. INTACT MASS



Sample: fractions from 1 fractionation run
BioResolve RP mAb Polyphenyl (50 × 2.1 mm, 1.7 µm)
Injection: 16 µL

C. PEPTIDE MAPPING



Sample: combined samples from 4 fractionation runs
Digestion: RapiZyme Trypsin, PREMIER BEH C18 (100 × 2.1 mm, 1.7 µm)
Injection: 38 µL

Figure 4. Representative electropherograms of an antibody collected after fractionation and verified with analytical icIEF on the MauriceFlex system. Fractions were analyzed using an array of characterization methods. Data referenced from T. Menneteau, *et al*, "Therapeutic Protein Charge Variant Characterization with Intact Mass and Peptide Mapping Following Microgram Preparative Capillary Isoelectric Focusing Electrophoresis Fractionation", 72nd Conference on Mass Spectrometry and Allied Topics, Anaheim, CA, USA, June 2024, Poster TP635.

FIGURE 5.

The MauriceFlex + Alto Workflow

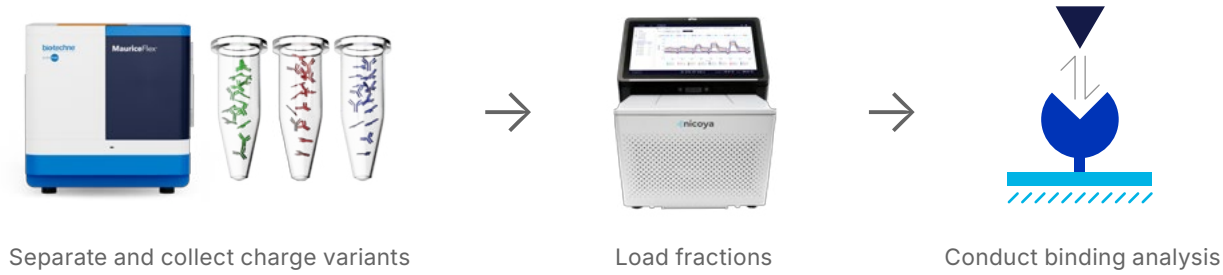


Figure 5. Biotherapeutic charge heterogeneity analysis and charge variant fraction collection workflow with the MauriceFlex System, followed by binding analysis on the Alto System.

FIGURE 6.

Comparative Analysis of Binding Kinetics

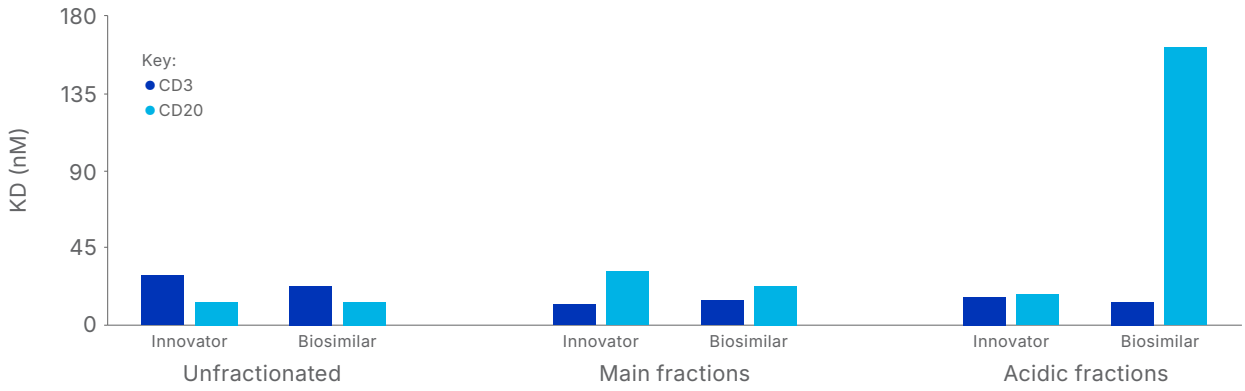


Figure 6. A comparative analysis of binding kinetics (KD) between different charge variant fractions of Mosunetuzumab and a research-grade biosimilar and the CD3 epsilon and CD20 antigens. Data are shown for unfractionated, main fractions, and acidic fractions of innovator and biosimilar samples binding with each antigen. Full details of this study are available in the application note A Novel icIEF Fractionation & SPR-Based Workflow for Correlating the Charge Structure to the Function of a Bispecific Antibody.

Obtain High Resolution, Reproducible Charge Separation with MauriceFlex, Maurice, & Maurice C. Systems

Advantages:

- ✓ Develop your methods in a day
- ✓ Analyze a variety of molecules including mAbs, AAVs, fusion proteins and more
- ✓ Get data in 10-15 minutes

See how easy it is to use the Maurice system for biomolecular charge & size analysis

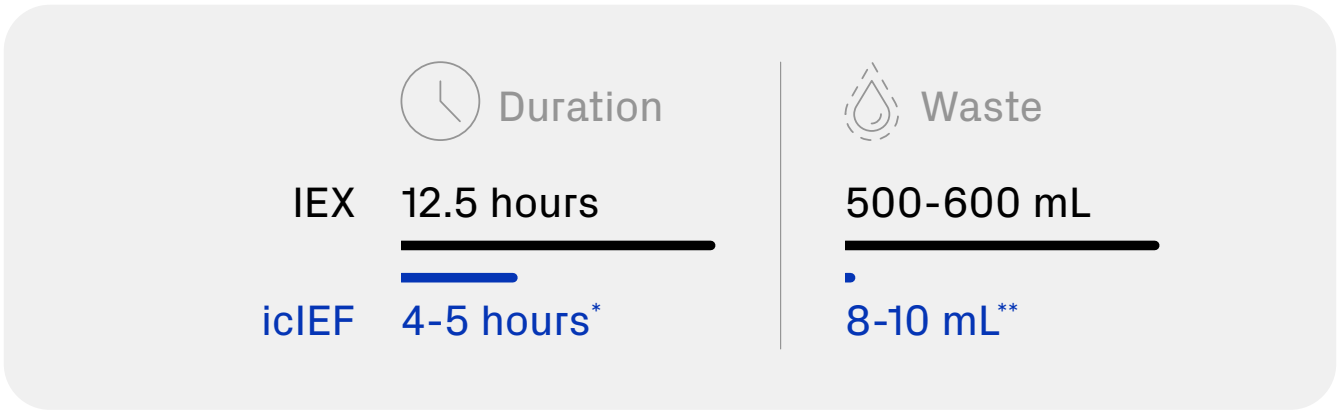
Maurice Demo

Scan the QR Code or Contact:
bio-techne.com/instruments/ice

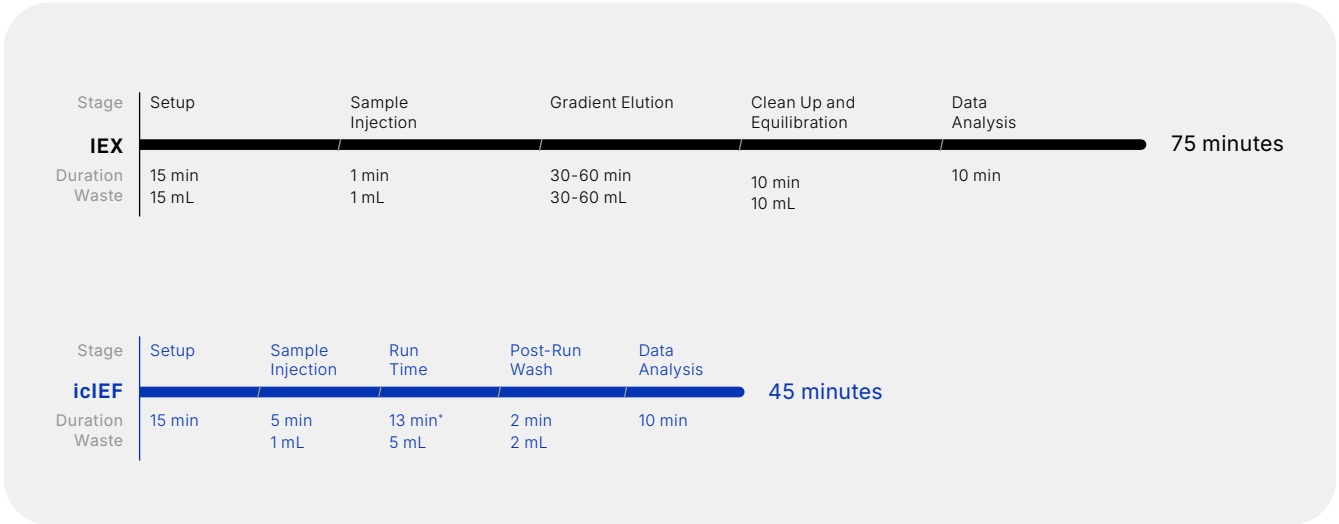
IEX vs icIEF workflows for routine analysis

Improve resolution, save time, and go green in charge analysis.

Workflow Totals (10 samples):



Workflow (per sample):



*Run time can be further shortened with the new SupersonicIEF method by McElroy & Heger published in Electrophoresis.
Read the full paper here for faster icIEF.

**Same total amount of waste generated for 1-12 samples

Results from the MauriceFlex, Maurice, & Maurice C. Systems:

- ✓ High resolution, reproducible charge heterogeneity separation
- ✓ Regulatory compliance with industry-approved software
- ✓ Choose between absorbance and native fluorescence detection modes

FIGURE 7.

icIEF Analysis of NIST mAb

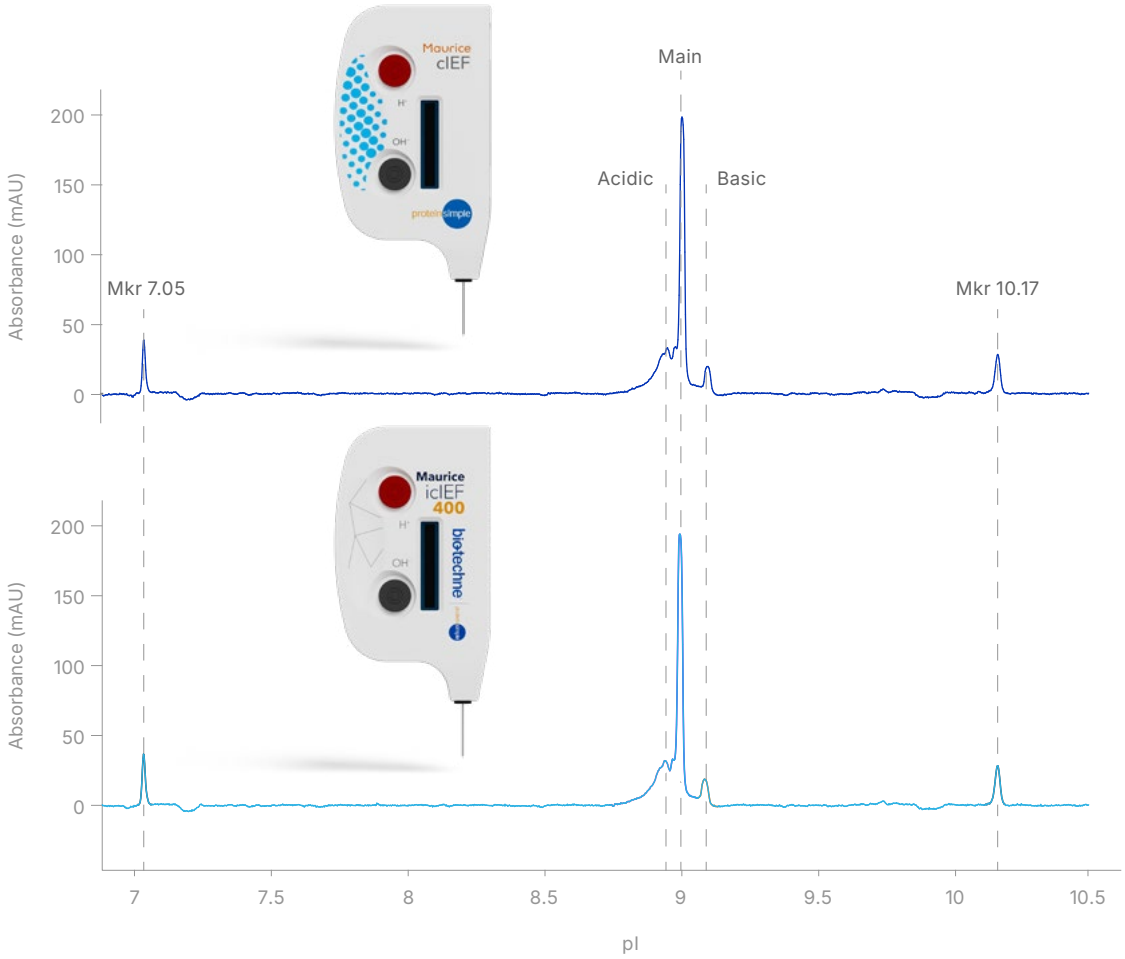


Figure 7. A comparison of charge profiles of NIST mAb obtained from the Maurice cIEF cartridge and icIEF 400 cartridge, run on the Maurice system. Both methods are comparable.

FIGURE 8.

Methods and attributes measured using Maurice and MauriceFlex systems.

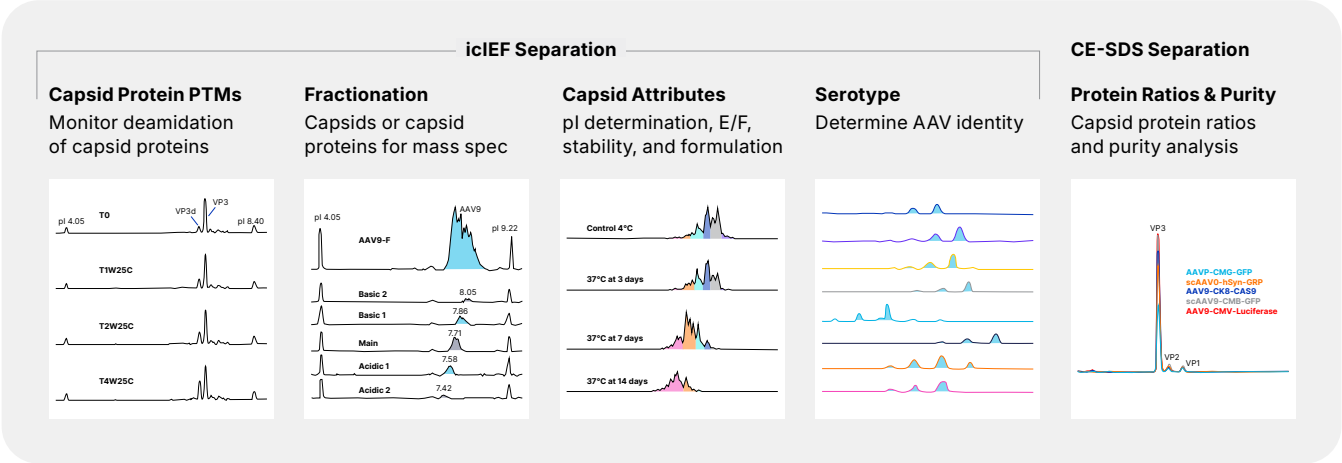
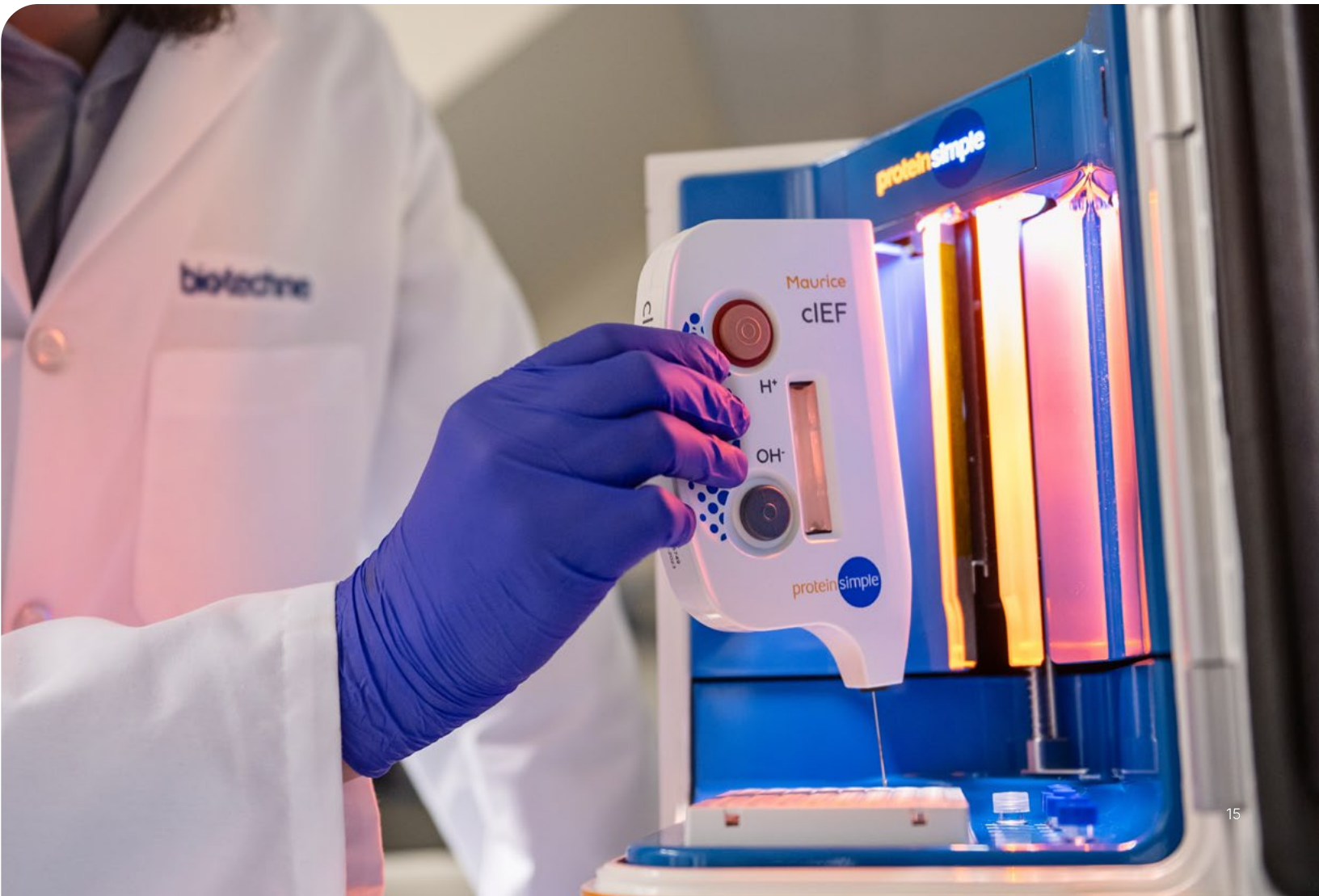


Figure 8. Apparent pI comparison of 8 different AAV serotypes with Maurice icIEF using native fluorescence detection. Distinct charge profiles are obtained for each serotype, demonstrating how Maurice can be used to determine AAV identity.



Obtain High Throughput Protein Size Separation with MauriceFlex, Maurice, & Maurice S. Systems

Advantages:

- ✓ Analyze a variety of molecules including mAbs, AAVs, IgMs, Lentiviruses and more
- ✓ Obtain high resolution, high throughput protein size separation
- ✓ Get data in as little as 5.5 minutes
- ✓ Maintain regulatory compliance with industry-approved software
- ✓ Decrease your footprint by doing away with acrylamide
- ✓ Use across stages: discovery to QC

SDS-PAGE vs. CE-SDS Improve resolution, save time, & go green in size analysis.

Workflow Totals (12 samples):

	Duration	Waste
SDS-PAGE	3-7 hours	Gels + 750 mL
CE-SDS	1.5-2 hours	8-10 mL*

*Same total amount of waste generated for 1-12 samples

Workflow (per sample):

Phase	Sample Prep	Gel Setup	Load Sample	Run Gel	Staining and Destaining	Data Analysis
SDS-PAGE						
Duration Waste	20 min	15 min	10 min 1-2 Acrylamide Gels	50 min 30-50 mL	30 min - 4 hr 20-50 mL	1 hr

Phase	Sample Prep	Instrument Setup	Analyze Samples	Data Analysis
CE-SDS				
Duration Waste	20 min	10 min 3 mL	65 min 5 mL	5-30 min

FIGURE 9.

CE-SDS Analysis of NIST mAb

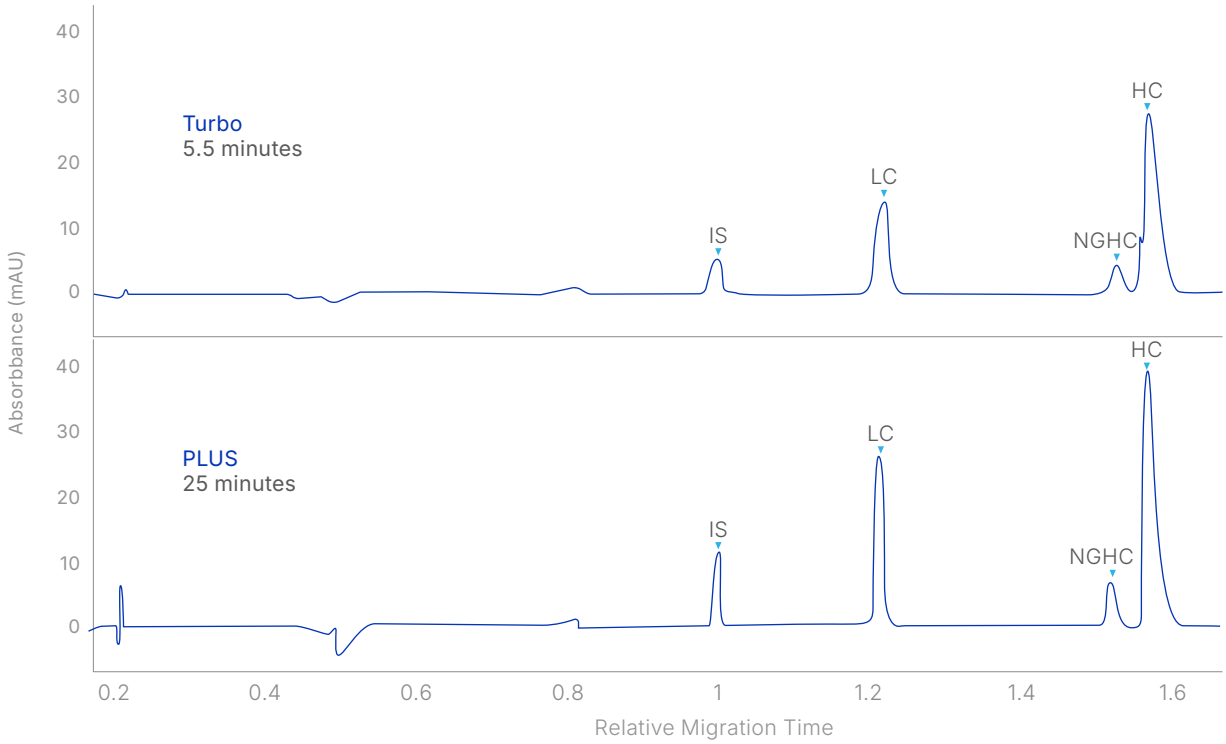


Figure 9. A comparison of size separation of NIST mAb obtained from the Maurice Turbo CE-SDS cartridge and the CE-SDS PLUS cartridge, run on the Maurice system. Both methods are comparable.

Latest Software Releases for Maurice Platforms

Introducing Windows 11 and Compass 4.1 Upgrades

The Maurice portfolio offers multiple platforms and software options to analyze biomolecular charge or size, or to collect charge isoform fractions for further characterization using icIEF, CE-SDS, and icIEF fractionation methods. Maurice Instruments are easy to integrate into your current lab environment and 21 CFR Part 11 compliant workflows with multiple choices including Compass for iCE software, Waters™ Empower® Chromatography Data System (CDS) software, or Thermo Fisher™ Chromeleon™ CDS software.

Compass for iCE Software 4.1— Now Available

Compass for iCE Software provides an easy-to-use, easy-to-learn, 21 CFR Part 11 compliant interface to control your Maurice instrument. The software supports the latest cartridges (icIEF 400 and MauriceFlex icIEF Fractionation cartridges), including guided post-run cleanup and purging steps, which are crucial for maintaining cartridge health and ensuring reliable, high-quality data.

Compass for iCE 4.1 is **now officially validated for Windows 11**, ensuring compatibility and optimal performance on the latest operating systems and enabling improved cartridge management.

This software release provides more flexible cartridge usage. Users can now start runs for cIEF, icIEF 400, CE-SDS PLUS, and Turbo CE-SDS cartridges after their expiration dates.

Although it is highly recommended that expired cartridges be replaced to obtain the most reliable results, the software now allows users to proceed with expired cartridges, if needed, with clear audit trail logging for compliance (Table 1). The Compass Run Report is not impacted by expired cartridge usage.

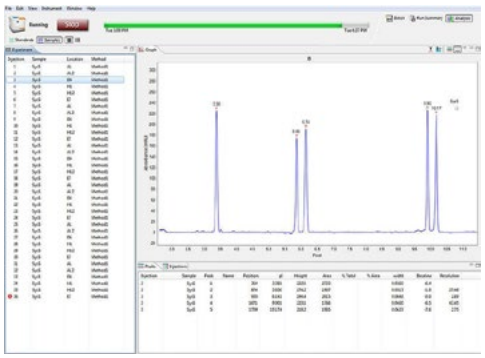


TABLE 3.

Audit trail for expired cartridge usage

Cartridge Configuration	Compass for iCE Version	Expired Cart Usage	CFR Audit Trail Logging for Expired Cartridge Usage
New RFID Tag	Before 4.1	⊗ No	⊗ No
	4.1 or newer	✓ Yes	✓ Yes
Legacy RFID Tag	Before 4.1	⊗ No	⊗ No
	4.1 or newer	✓ Yes	✓ Yes

RFID: Radio-Frequency Identification

Compass for iCE software will no longer display a warning notification regarding the 'guaranteed' injection limit, as this policy is no longer in effect Table 2 shows the effect of this change on the

Compass run report. The CFR audit trail is not impacted. All cartridges are validated up to their respective maximum injection or batch limit. This new feature applies to updated Maurice cartridges, which will ship starting October 15th, 2025 (with serial number prefix 1251015XXX). Cartridge serial numbers prior to the cut-in will display guaranteed injection limit warning messages. Empower and Chromeleon drivers are currently not supported and will be available in future driver updates.

TABLE 4.

Removal of guaranteed injection notifications

Cartridge Configuration	Compass for iCE Version	GIWD	Compass Run Report GIFD
New RFID Tag	Before 4.1	⊗ No	✓ Yes
	4.1 or newer	⊗ No	⊗ No
Legacy RFID Tag	Before 4.1	✓ Yes	✓ Yes
	4.1 or newer	✓ Yes	✓ Yes

GIWD: Guaranteed Injections Warning Displayed
GIFD: Guaranteed Injections Field Displayed

These updates are designed to give you greater control and flexibility, while maintaining transparency and traceability in your results.

Empower CDS Software

The Maurice Empower® Control Kit lets Maurice platforms be controlled directly through 3 CDS. The kit includes driver software and an instrument control license. The latest version of the Empower ICS Driver v1.2 includes support for MauriceFlex (cIEF, CE-SDS PLUS, and Turbo CE-SDS assays only). This version includes the same cleaning features as Compass for iCE to maximize the life of Maurice cartridges with post-run cleanup and purging steps.

Chromeleon CDS Software

The Maurice System can be controlled directly with Chromeleon CDS. The Maurice Chromeleon Driver Software also includes the ability to perform pI recalibration, along with the same maintenance features as Compass for iCE and Empower ICS driver.

TABLE 5.

A. Software and Instrument Compatibility

	Maurice Flex	Maurice Maurice OBM	Maurice C. Maurice C. OBM	Maurice S.
Compass for iCE	✓	✓	✓	✓
Empower	✓	✓	✓	✓
Chromeleon		✓	✓	✓

B. Software and Cartridge Compatibility

Cartridge	cIEF (200)	icIEF 400	CE-SDS Plus	Turbo CE-SDS	Fractionation
Compass for iCE	✓	✓	✓	✓	✓
Empower	✓	✓	✓	✓	
Chromeleon	✓		✓	✓	

Download Latest Software Releases

Scan the QR Code or visit online:
bio-techne.com/instruments/ice/software-for-maurice

TABLE 6.

Cartridge Specifications

Description	cIEF	IcIEF 400
Minimum Sample Volume	50 µL	50 µL
Sample Delivery	Vacuum	Vacuum
Typical Separation Time*	6-10 min (molecule dependent)	6-10 min (molecule dependent)
Detection Capacity	UV Absorbance at 280 nm Fluorescence: Ex 280 nm, Em 320–430 nm	UV Absorbance at 280 nm Fluorescence: Ex 280 nm, Em 320–430 nm
Typical Voltage	Pre-focusing: 1,500 V; focusing: 3,000 V	Pre-focusing: 1,500 V; focusing: 3,000 V
Sample Injections per Cartridge	100 guaranteed, 200 maximum (max 20 batches)	100 guaranteed, 400 maximum (max 40 batches)
Maximum Sample Injections per Batch	100	100
pI/Size Range	2.85–10.45	2.85–10.45
pI/Sizing CV	1%	1%
CV for Peaks >10% Composition	≤5% (Intra-batch), ≤6% (Inter-batch)	≤5% (Intra-batch), ≤6% (Inter-batch)
Relative Migration Time CV	N/A	N/A
pI/Sizing Resolution	0.05 pI units (for wide range 3–10 ampholyte)	0.05 pI units (for wide range 3–10 ampholyte)
Minimum Dynamic Range	2 logs	2 logs
Linearity	>0.995	>0.995
Sensitivity (LOD)	0.7 µg/mL (Native fluorescence) 3.0 µg/mL (Absorbance) (Values based on a monoclonal antibody)	0.7 µg/mL (Native fluorescence) 3.0 µg/mL (Absorbance) (Values based on a monoclonal antibody)
Sample Tray Options	96-well plates or 48 vials	96-well plates or 48 vials
Power	100 V–240 V (AC), 50/60 Hz, 500 W	100 V–240 V (AC), 50/60 Hz, 500 W
Voltage Range	0–6,500 V	0–6,500 V
Temperature Control Range	4–25 °C	4–25 °C
Dimensions	44 cm H x 42 cm W x 61 cm D	44 cm H x 42 cm W x 61 cm D
Weight	46 kg (100 lb)	46 kg (100 lb)

TABLE 6.

Cartridge Specifications *(continued)*

Description	CE-SDS PLUS	Turbo CE-SDS
Minimum Sample Volume	50 µL	100 µL
Sample Delivery	Electrokinetic	Electrokinetic
Typical Separation Time	Reduced IgG: 25 min Non-reduced IgG: 35 min	Reduced IgG: 5.5 min Non-reduced IgG: 8 min
Detection Capacity	UV Absorbance at 220 nm	UV Absorbance at 220 nm
Typical Voltage	Separation: 5,750 V	Separation: 4,200 V
Sample Injections per Cartridge	100 guaranteed, 500 maximum (max 25 batches)	100 guaranteed (max 25 batches)
Maximum Sample Injections per Batch	48	96
pI/Size Range	10–270 kDa	10–270 kDa
pI/Sizing CV	≤2%	≤2%
CV for Peaks >10% Composition	N/A	N/A
Relative Migration Time CV	<1% for reduced IgG	<5%
pI/Sizing Resolution	≥1.5 for NGHC/HC IgG Standard	≥1.0 for NGHC/HC IgG Standard
Minimum Dynamic Range	2 logs	2 logs
Linearity	>0.995	>0.995
Sensitivity (LOD)	0.3 µg/mL (Value based on Internal Standard)	0.6 µg/mL (Value based on Internal Standard)
Sample Tray Options	96-well plates or 48 vials	96-well plates or 48 vials
Power	100 V–240 V (AC), 50/60 Hz, 500 W	100 V–240 V (AC), 50/60 Hz, 500 W
Voltage Range	0–6,500 V	0–6,500 V
Temperature Control Range	4–25 °C	4–25 °C
Dimensions	44 cm H x 42 cm W x 61 cm D	44 cm H x 42 cm W x 61 cm D
Weight	46 kg (100 lb)	46 kg (100 lb)

*Run time can be further shortened with the new SupersonicIEF method by McElroy & Heger published in Electrophoresis.
Read the full paper here for faster icIEF

TABLE 6.

Cartridge Specifications *(continued)*

Description	cIEF Fractionation
Minimum Sample Volume	100 µL
Sample Delivery	Vacuum
Typical Separation Time	40-50 min (molecule dependent)
Detection Capacity	Fluorescence: Ex 280 nm, Em 320-450 nm
Typical Voltage	Pre-focusing: 500 V and 1000 V; Focusing: 1500 V
Maximum Batches per Cartridge	Up to 15 batches, up to 84 fractions per batch
Maximum Sample Injections per Batch	1 (fractionation) 4 (cIEF)
pI/Size Range	3-10
pI/Sizing CV	1%
CV for Peaks >10% Composition	≤10% (Inter-batch)
Relative Migration Time CV	N/A
pI/Sizing Resolution	N/A
Minimum Dynamic Range	2 logs
Linearity	N/A
Sensitivity (LOD)	N/A
Sample Tray Options	96 well plates only
Power	100 V–240 V (AC), 50/60 Hz, 500 W
Voltage Range	0–6,500 V
Temperature Control Range	10–25 °C
Dimensions	44 cm H x 42 cm W x 61 cm D
Weight	46 kg (100 lb)


biotechne
MauriceFlex

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