

Need to See Comparability Between iCE3 and Maurice?

We Have the Data!

The news of iCE3's discontinuation may have triggered some alarm bells, but we're here to assure you that you'll get the same data quality (if not better), with Maurice, the next-gen capillary electrophoresis instrument. This spotlight summarizes a global multi-company icIEF study that demonstrates the comparability of iCE3 and Maurice, the details of which have been published in *Electrophoresis*.

Two molecules, the NIST monoclonal antibody (NIST mAb) and a fusion protein (rhPD-L1-Fc), were each run on iCE3 and Maurice to measure charge heterogeneity across 21 labs on three continents. FIGURE 1A shows a representative electropherogram obtained for the NIST mAb, while FIGURE 1B is a comparison of the relative peak areas of all three isoforms obtained on both iCE3 and Maurice across the labs. TABLE 1 lists the apparent pI values of the NIST mAb main isoform measured by each laboratory on both instruments, and TABLE 2 shows the means of the relative peak areas obtained for the acidic, main, and basic isoforms on both instruments.



FIGURE // 1A

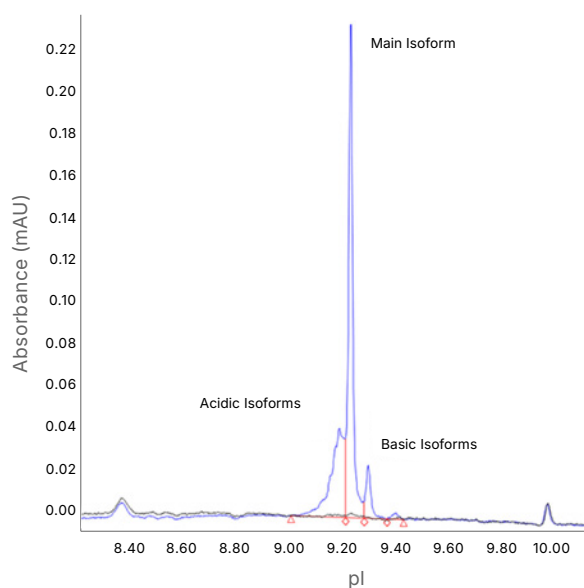


FIGURE // 1B

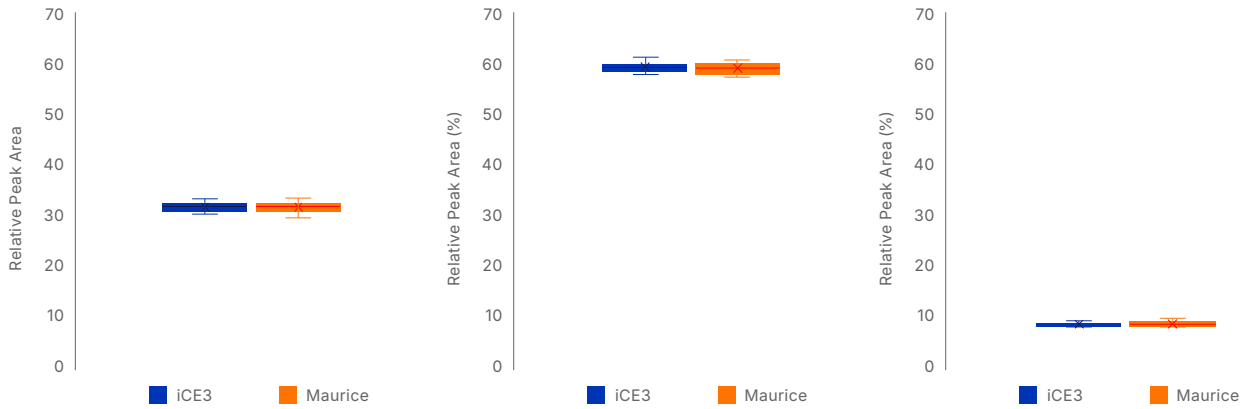


Figure 1. Data from NIST mAb analysis. (A) Representative electropherogram of NIST mAb. (B) Comparison of the relative peak areas of NIST mAb obtained on iCE3 and Maurice, where box plots for acidic, main, and basic isoforms are shown. TABLE 1 lists the average relative peak areas obtained for each isoform on both instruments. Data source: Madren, S., McElroy, W., Schultz-Kuszkak, K., Boumajny, B., Shu, Y., Sautter, S., Zhao, H. C., Schadock-Hewitt, A., Chumsae, C., Ball, N., Zhang, X., Rish, K., Zhang, S., Wurm, C., Cai, S., Bauer, S. P., Stella, C., Zheng, L., Roper, B., Michels, D. A., ... Mattila, M. (2022). Global intercompany assessment of ICIEF platform comparability for the characterization of therapeutic proteins. *Electrophoresis*, 43(9-10), 1050-1058. <https://doi.org/10.1002/elps.202100348>.

Similarly, FIGURE 2A shows the charge profile obtained for the rhPD-L1-Fc sample. The large number of peaks observed were organized into 4 groups (A, B, C, and D) for analysis, and the relative peak areas for these groups were measured on iCE3 and Maurice, as shown in FIGURE 2B. The means for groups A, B, C, and D on Maurice and iCE3 are listed in TABLE 2.

FIGURE // 2A

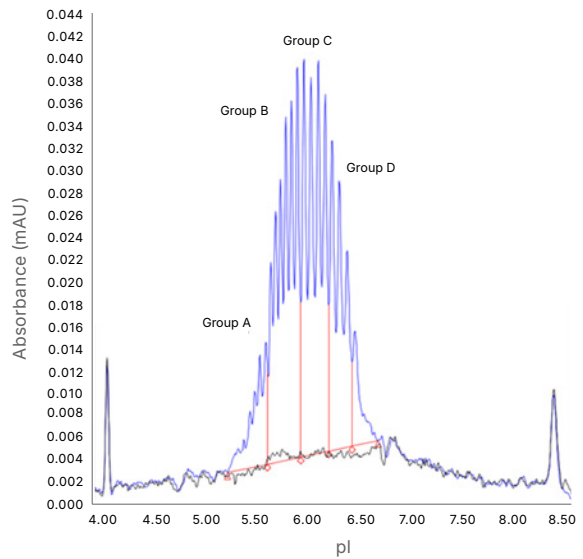


FIGURE // 2B

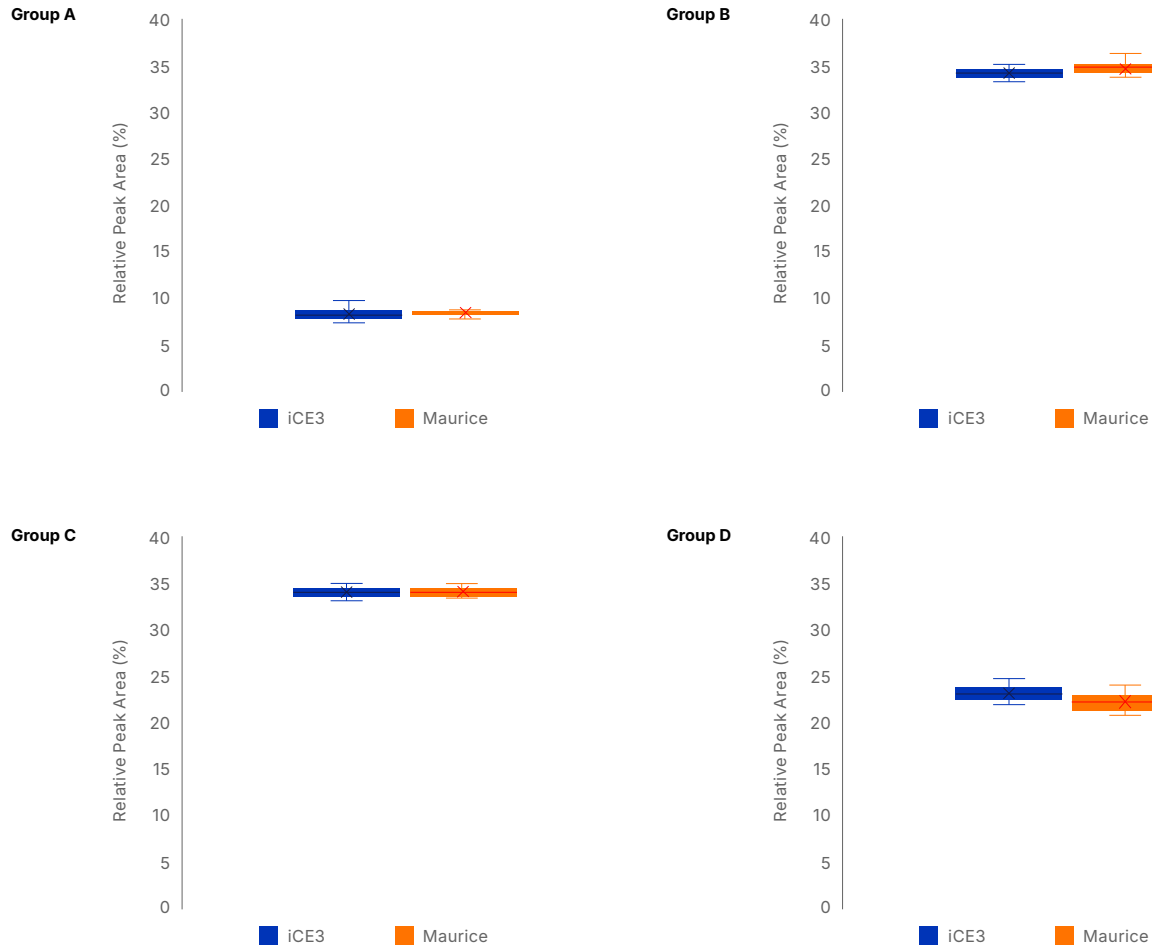


Figure 2. Data from rhPD-L1-Fc analysis. (A) Representative electropherogram of the fusion protein. (B) Comparison of the relative peak areas of the sample obtained on iCE3 and Maurice, where box plots for groups A, B, C, and D are shown, respectively. Data source: Madren, S., McElroy, W., Schultz-Kuszek, K., Boumajny, B., Shu, Y., Sautter, S., Zhao, H. C., Schaddock-Hewitt, A., Chumsae, C., Ball, N., Zhang, X., Rish, K., Zhang, S., Wurm, C., Cai, S., Bauer, S. P., Stella, C., Zheng, L., Roper, B., Michels, D. A., ... Mattila, M. (2022). Global intercompany assessment of ICIEF platform comparability for the characterization of therapeutic proteins. *Electrophoresis*, 43(9-10), 1050-1058. <https://doi.org/10.1002/elps.202100348>

TABLE // 01

Laboratory	Average Apparent pI Value	
	iCE3	Maurice
1	9.25	9.28
2	9.27	9.27
3	9.27	9.27
4	9.25	9.32
5	9.29	9.25
6	9.27	9.25
7	9.29	9.28
8	9.25	9.26
9	9.26	9.26
10	9.27	9.25
11	9.27	9.26
14	9.23	9.24
15	9.24	9.25
17	9.21	9.22
18	9.29	9.27
19	9.32	9.26
20	9.24	9.20
21	9.26	9.25
MEAN	9.26	9.26
SD	0.025	0.026
%RSD	0.27	0.28

Table 1. The apparent pI values of the NIST mAb main isoform measured by each laboratory on iCE3 and Maurice.

TABLE // 02

Average Relative Peak Area		
Isoform	iCE3	Maurice
Acidic	30.9	29.9
Main	59.8	60.5
Basic	9.1	9.4

Table 2. The means of the relative peak areas obtained for the acidic, main, and basic isoforms on iCE3 and Maurice.

TABLE // 03

Average Relative Peak Area		
Group	iCE3	Maurice
A	7.2	8.6
B	34.7	35.2
C	35.0	34.2
D	23.0	21.4

Table 3. The average relative peak area of the groups A, B, C, and D is shown.

This global inter-company study illustrates the comparability between iCE3 and Maurice for charge isoform analysis, which provides you with confidence in your transition from one instrument to the other. Maurice also brings several additional benefits, including the addition of native fluorescence which provides significantly increased sensitivity compared to absorbance detection, and CE-SDS which enables you to measure product purity. In addition, faster run times with Maurice provide increased productivity and throughput. There are significant labor savings with Maurice related to start up and shut down activities, as well as sample savings due to the reduced requirements. Maurice also delivers industry leading ease of use along with increased data integrity with integration with Waters™ Empower® CDS software and Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) software. Learn more at bio-techne.com/maurice.

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