Applications Note

AccuTOF-GCx Series

Introduction of latest GC/HR-TOFMS system:JMS-T200GC AccuTOF-GCx - High Mass Accuracy and Stability

Introduction

JEOL has recently announced a 4th generation GC/HR-TOFMS system, the JMS-T200GC AccuTOF-GCx, in 2015. The AccuTOF-GCx offers high sensitivity, high mass resolving power, high mass accuracy, and a wide dynamic range in combination with high-speed data acquisition.

In this application note, we show we show high mass accuracy and *m/z* stability using this latest GC/HR-TOFMS system.

Figure 1. 4th generation of the JEOL GC/HR-TOFMS system JMS-T200GC AccuTOF-GCx

Results and Discussion

We made 100 replicate splitless injections of a 100fg/μL solution of octafluoronaphthalene (OFN) and acquired the mass spectra in electron ionization (EI) mode. All data were mass-calibrated with a one-point drift compensation by using a background column-bleed ion from the capillary column (*m/z* 281.05114: $C_7H_{21}O_4Si_4^+$) as a lock mass.

We obtained excellent reproducibility for the mass accuracy for the OFN molecular ion ($C_{10}F_8^+$, *m/z* 271.9867) . All 100 measurements were within +/- 1 mDa using the column-bleed drift compensation (Figure 2).

Conclusion

The AccuTOF-GCx system provides high mass accuracy and stability by using a simple one-point drift compensation.

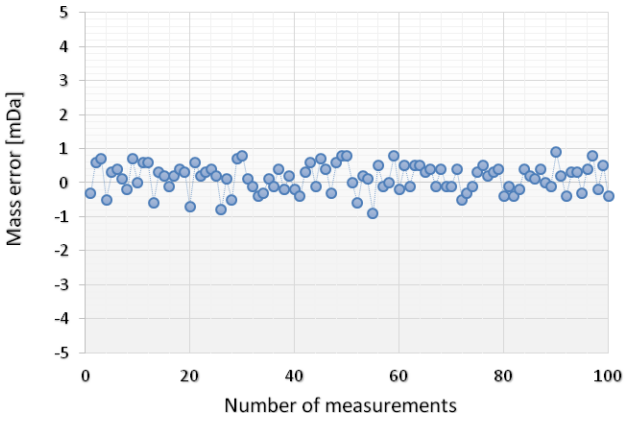

Figure 2. Mass error of the OFN 100fg/uL molecular ion (C10F8+, m/z 271.9867) during 100 replicate measurements

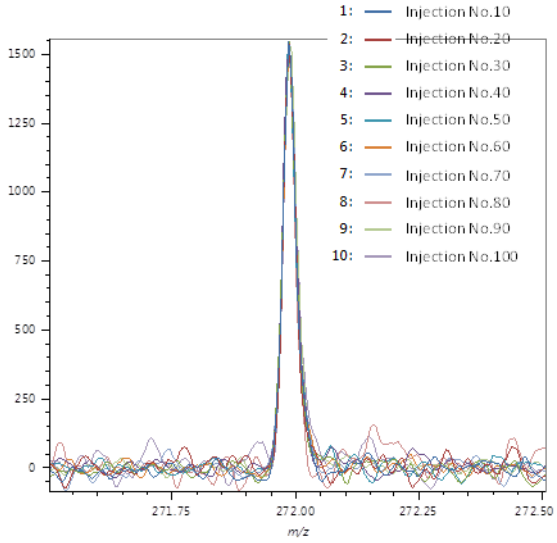

Figure 3. Overlay chart of the OFN molecular ion peaks

MS-032715

