

Going Vertical for High Throughput DART

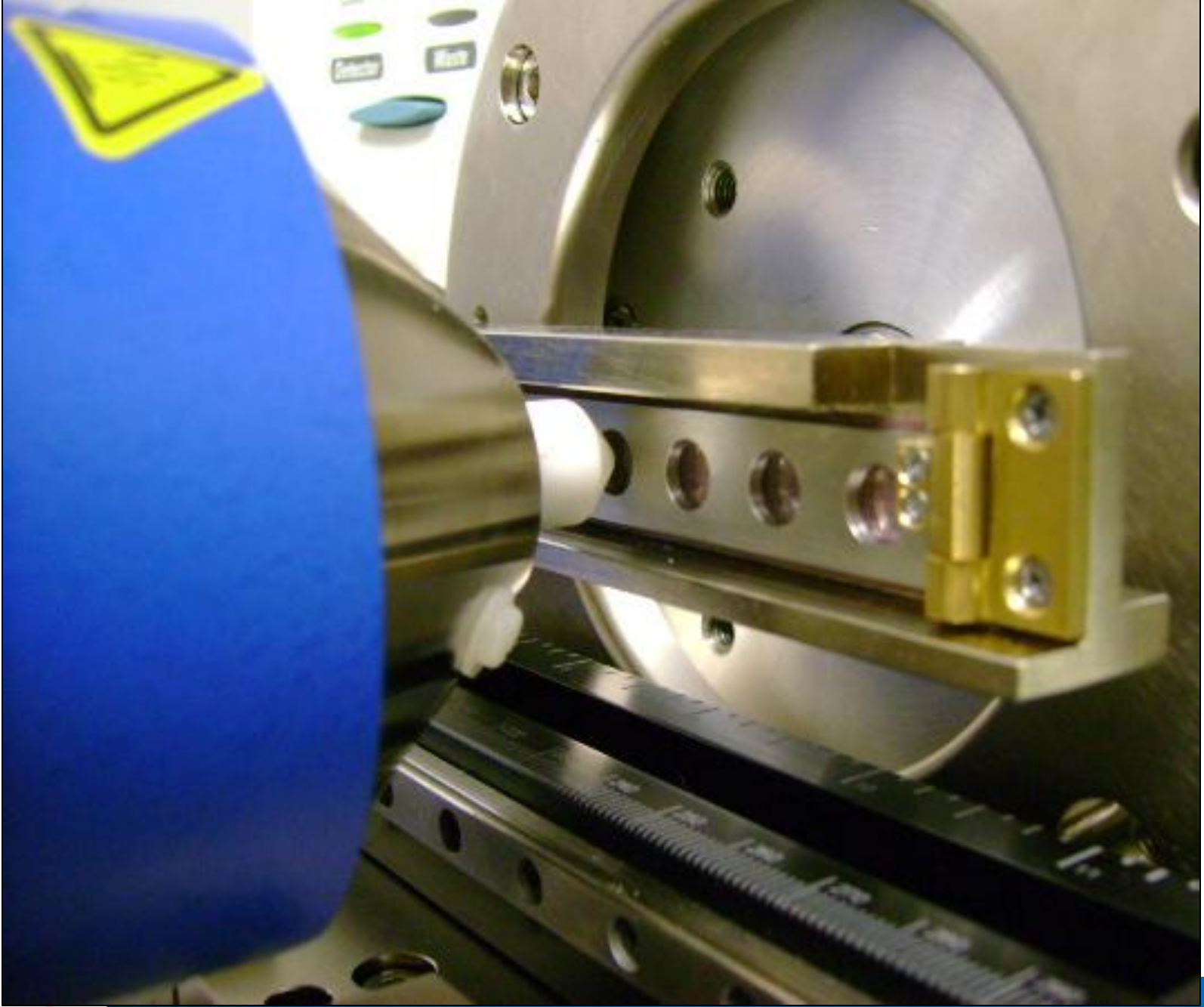
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IonSense DART Users' Forum

ASMS Denver, CO

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Transmission DART



**Stainless steel mesh
screens with 0.004 inch
strand diameter**



**10 uL of liquid sample
pipetted onto stainless steel
mesh screen and allowed
to completely dry**

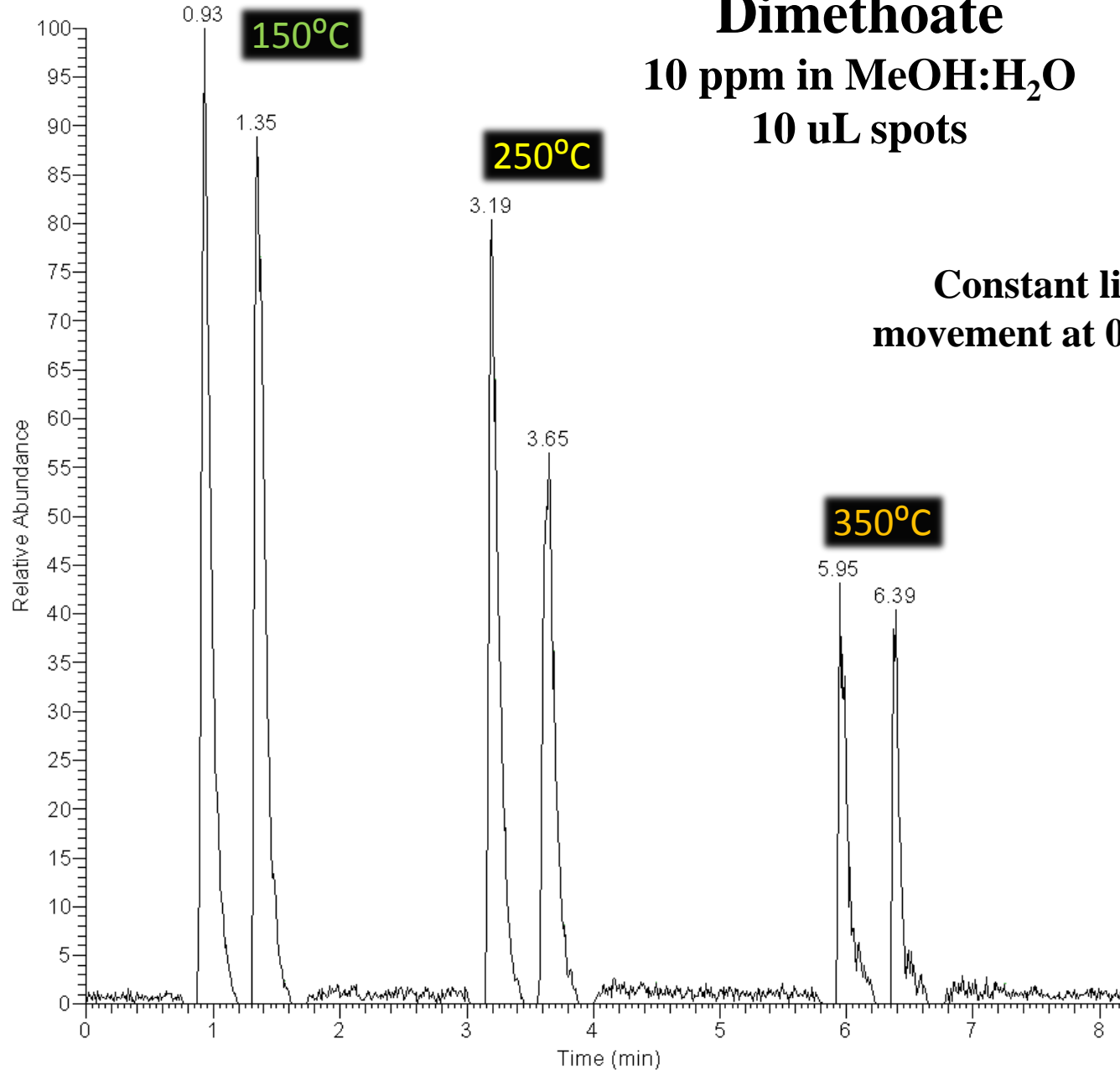


Automated Temperature Ramping Method

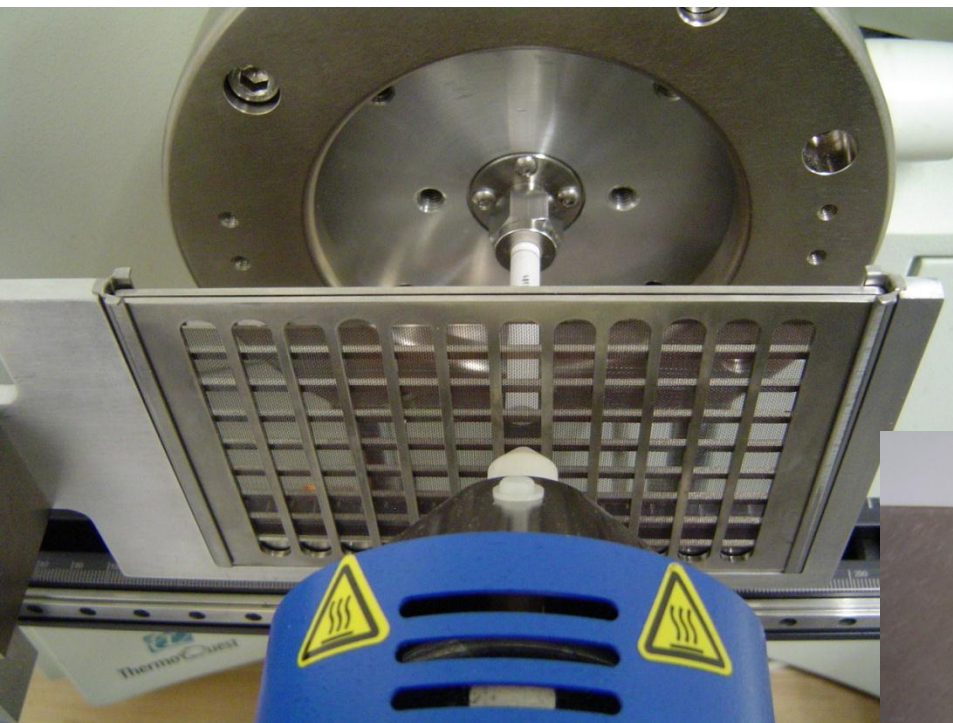
RT: 0.00 - 8.23

Dimethoate
10 ppm in MeOH:H₂O
10 uL spots

NL: 1.54E7
m/z= 229.86-232.40

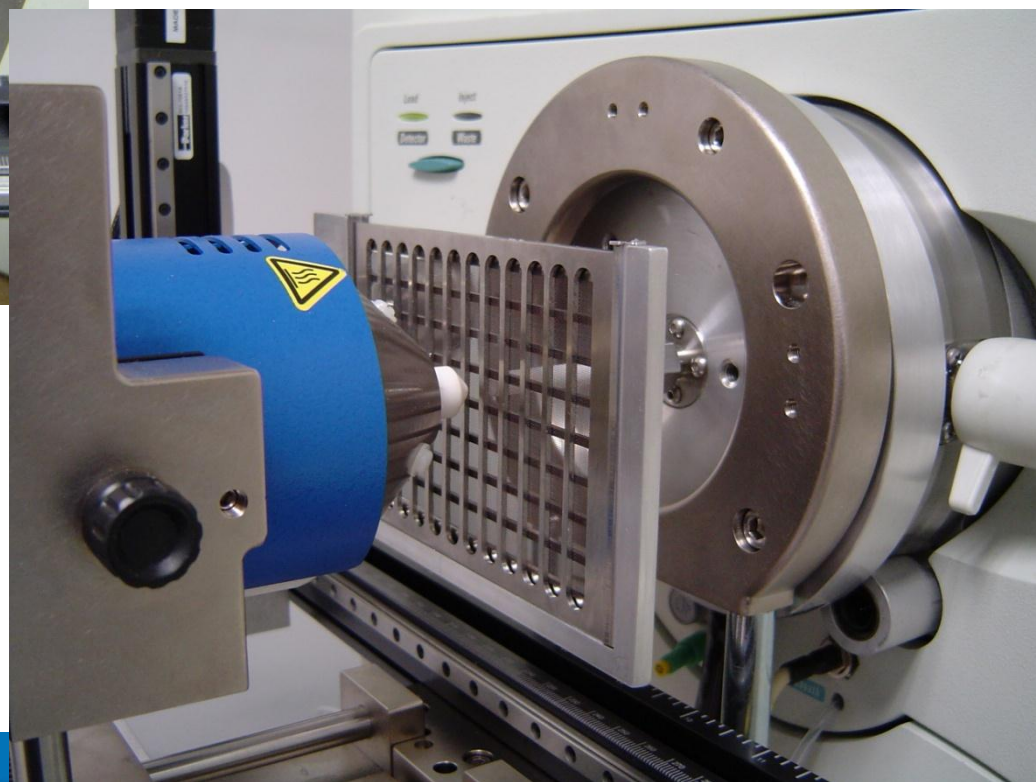


High Throughput X-Z Transmission DART



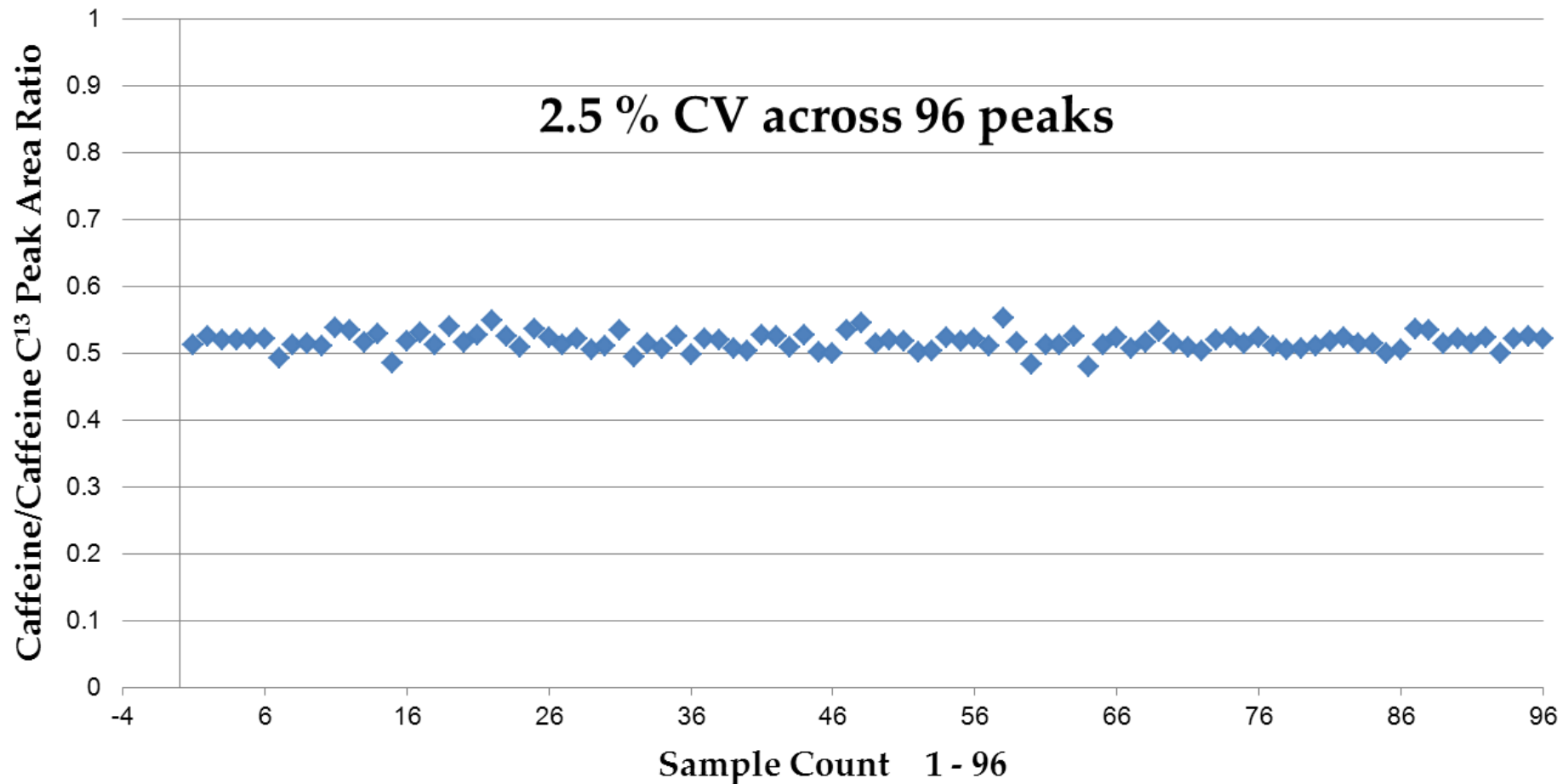
Complete up to 96 samples per run in just under 20 minutes =
12 sec/sample

Maintains standard 96 well microtiter plate format for automated sample deposition



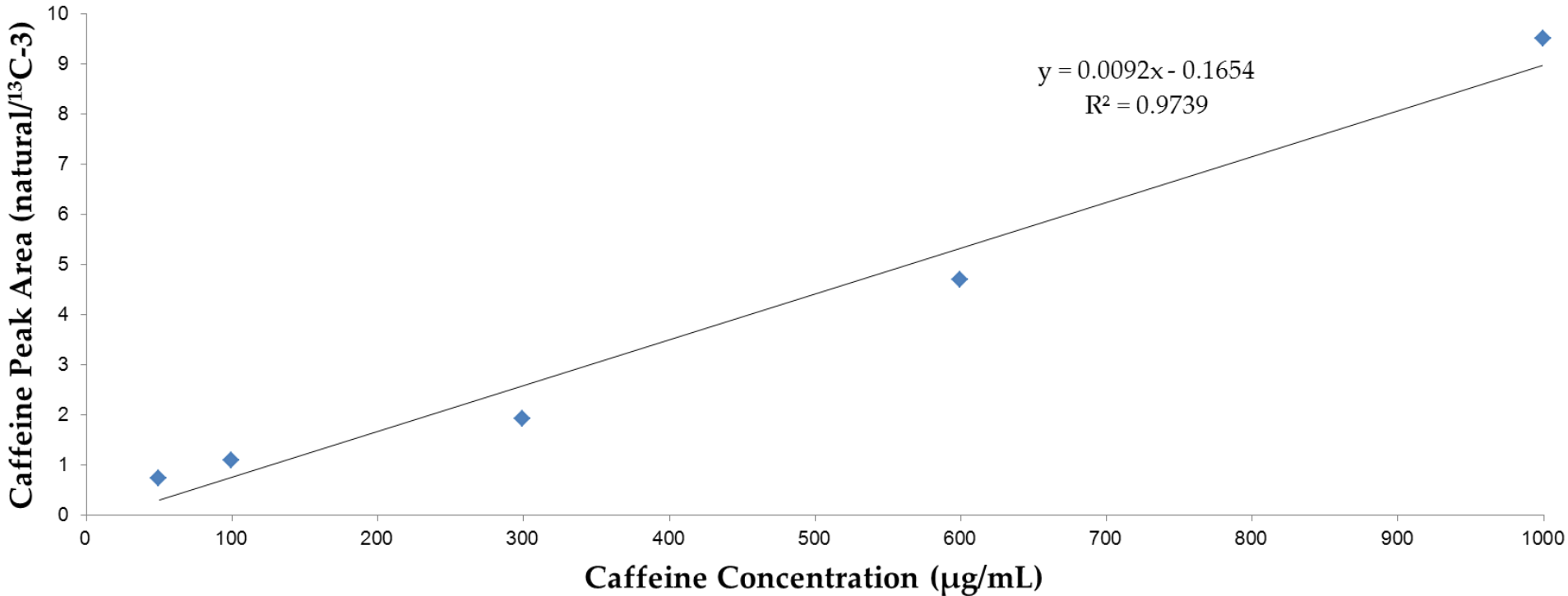
DART-MS

X-Z Transmission Module Precision Study

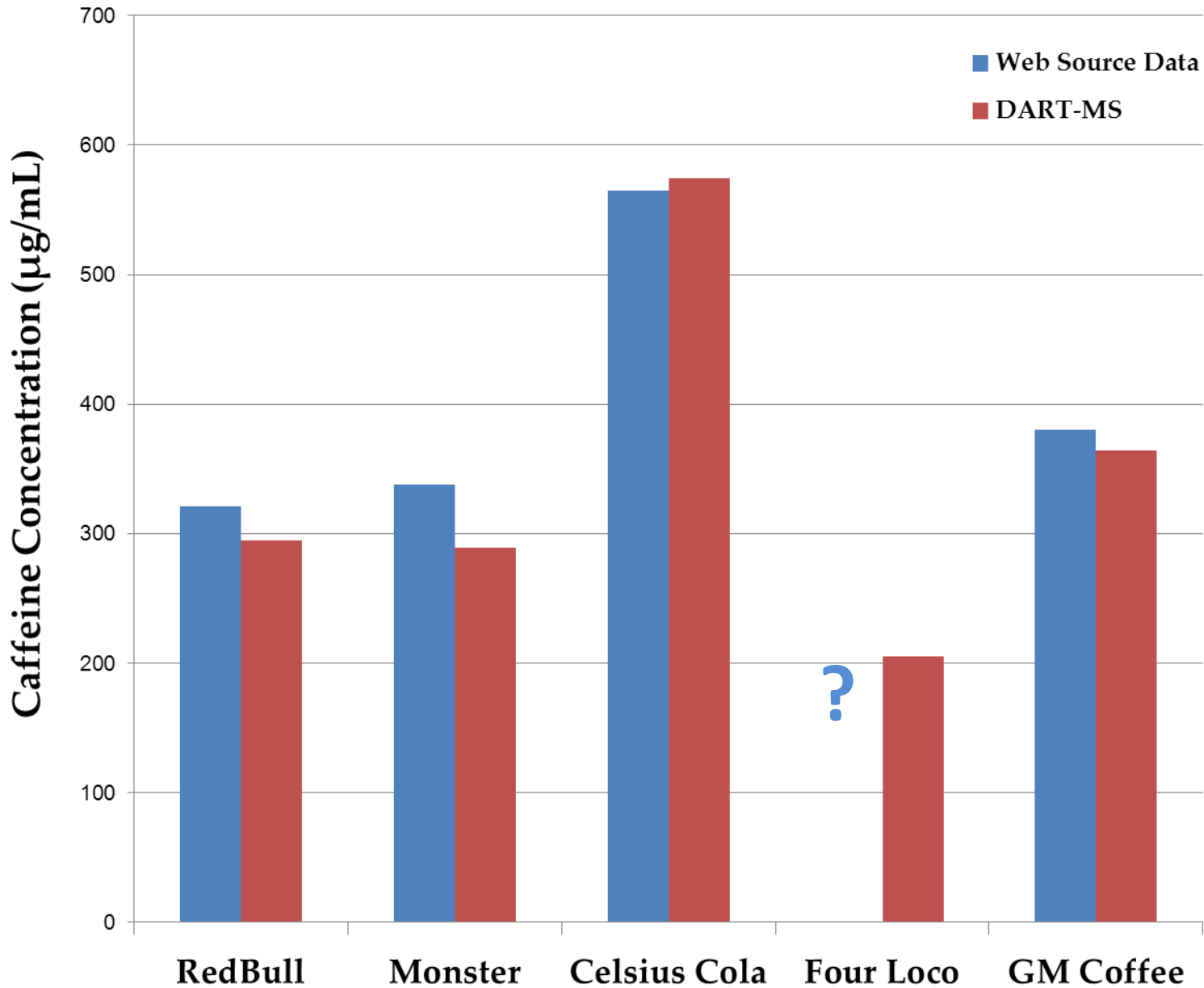


Quantitative Caffeine Analysis

Caffeine Standard Curve Generated by DART-MS



Caffeine Analysis in Energy Drinks by DART-MS



Summary

- **Traditional Sampling – DIP-it Tips**

- Limitations:

- Difficulty reproducing the ionization exposure time and sample positioning

- **Transmission DART (TM-DART):**

- Metal mesh or foam swabs used as sampling substrate
 - Prolonged analyte signal
 - Easier sample deposition and quick method development

- **X-Z TM-DART:**

- Significantly improves sample throughput
- Easily permits automated sample deposition with 96 well plate format