

Supplement for: Evidence for pyrazine-based chromophores in cloudwater mimics containing methylglyoxal and ammonium sulfate

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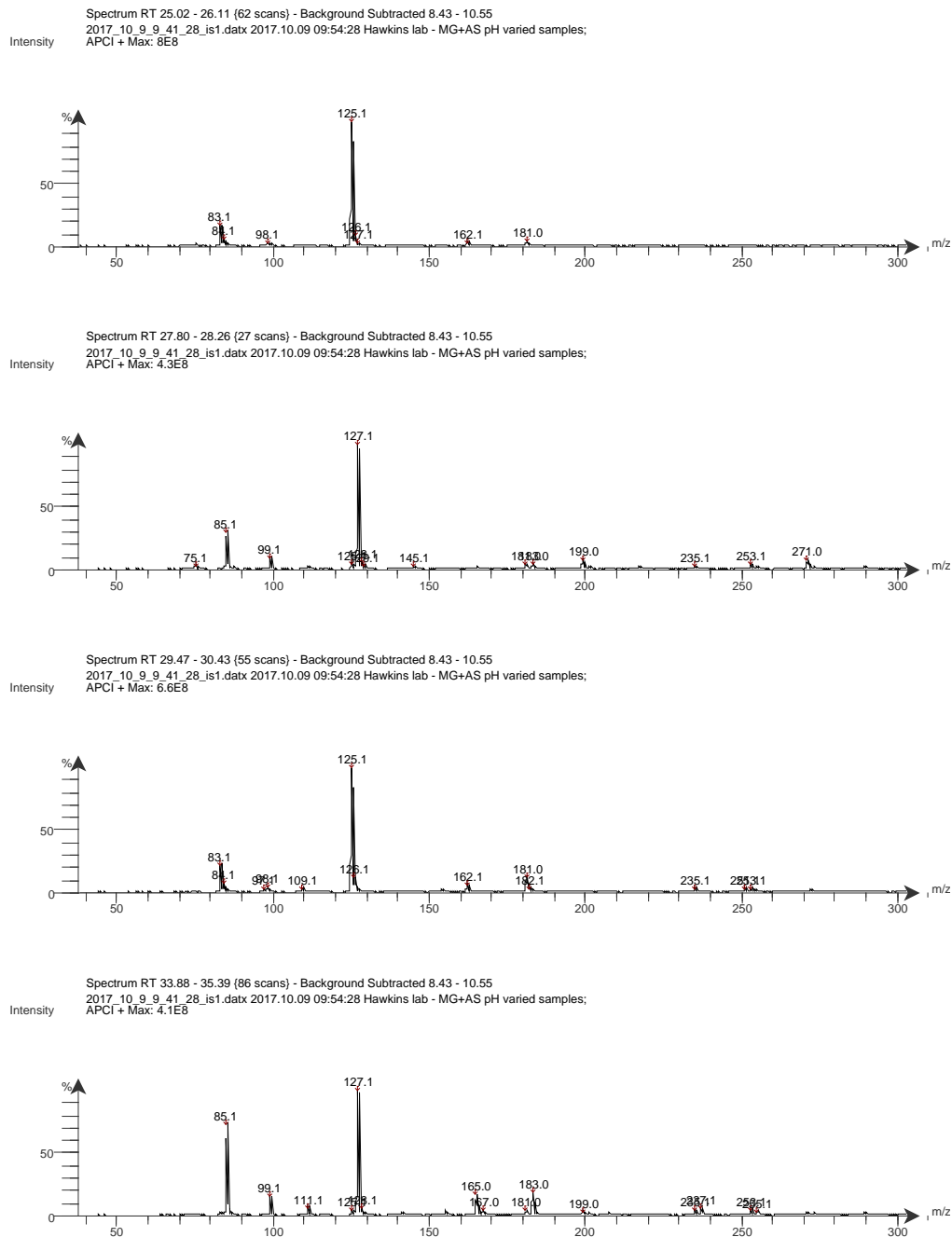


Figure S1. Under initial condition of pH 5, from top to bottom subfigures are: ^{14}N AS capped sample, ^{15}N AS capped sample, ^{14}N AS dried sample, ^{15}N AS dried sample.

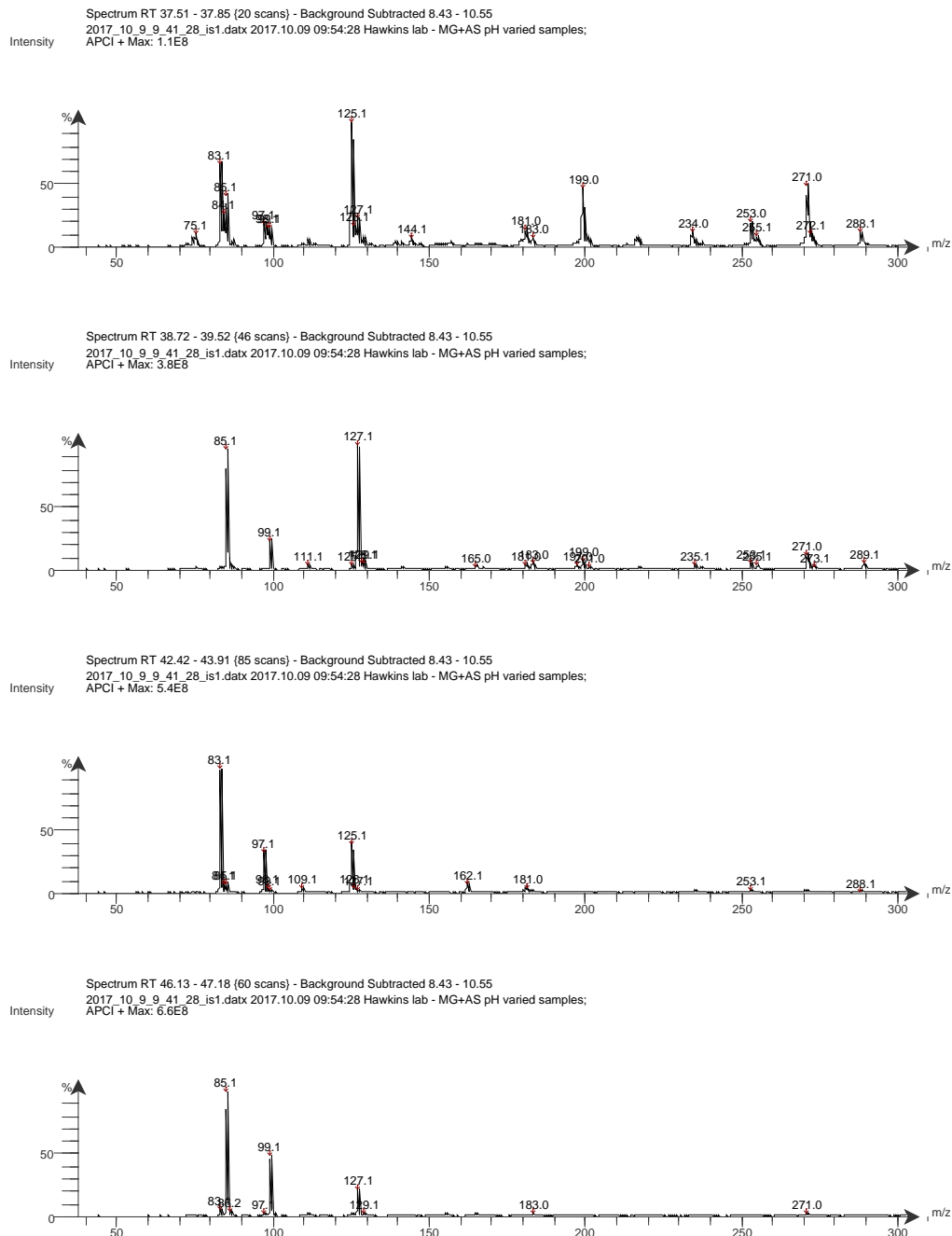


Figure S2. Under initial condition of pH 7, from top to bottom subfigures are: ^{14}N AS capped sample, ^{15}N AS capped sample, ^{14}N AS dried sample, ^{15}N AS dried sample.

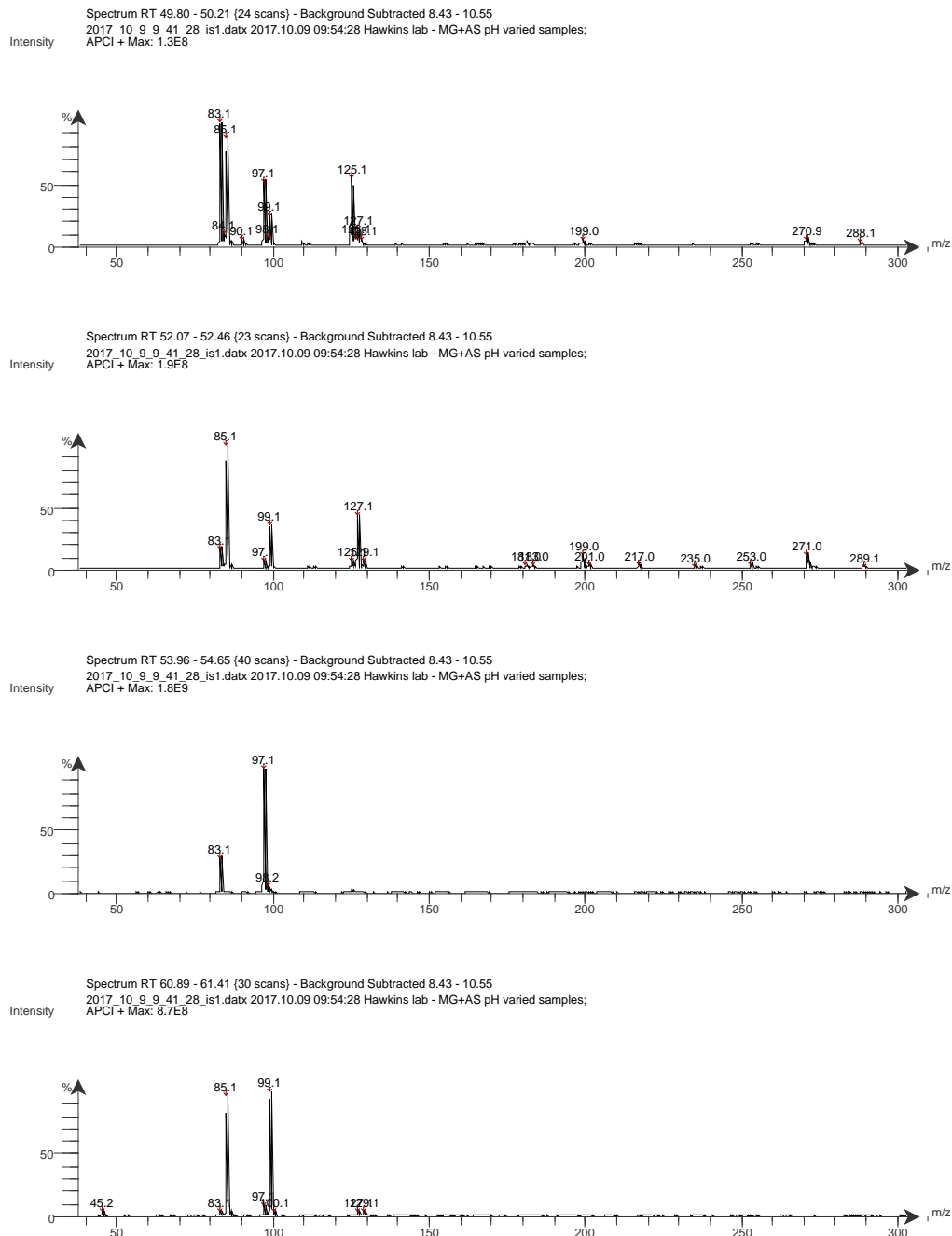


Figure S3. Under initial condition of pH 9, from top to bottom subfigures are: ^{14}N AS capped sample, ^{15}N AS capped sample, ^{14}N AS dried sample, ^{15}N AS dried sample.

File :D:\MassHunter\GCMS\1\data\LNH\171012_pH2b.D
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Acquired : 12 Oct 2017 15:10 using AcqMethod pyrazineSearch.M
Instrument : 5975 GCMS
Sample Name: pH2
Misc Info :
Vial Number: 2

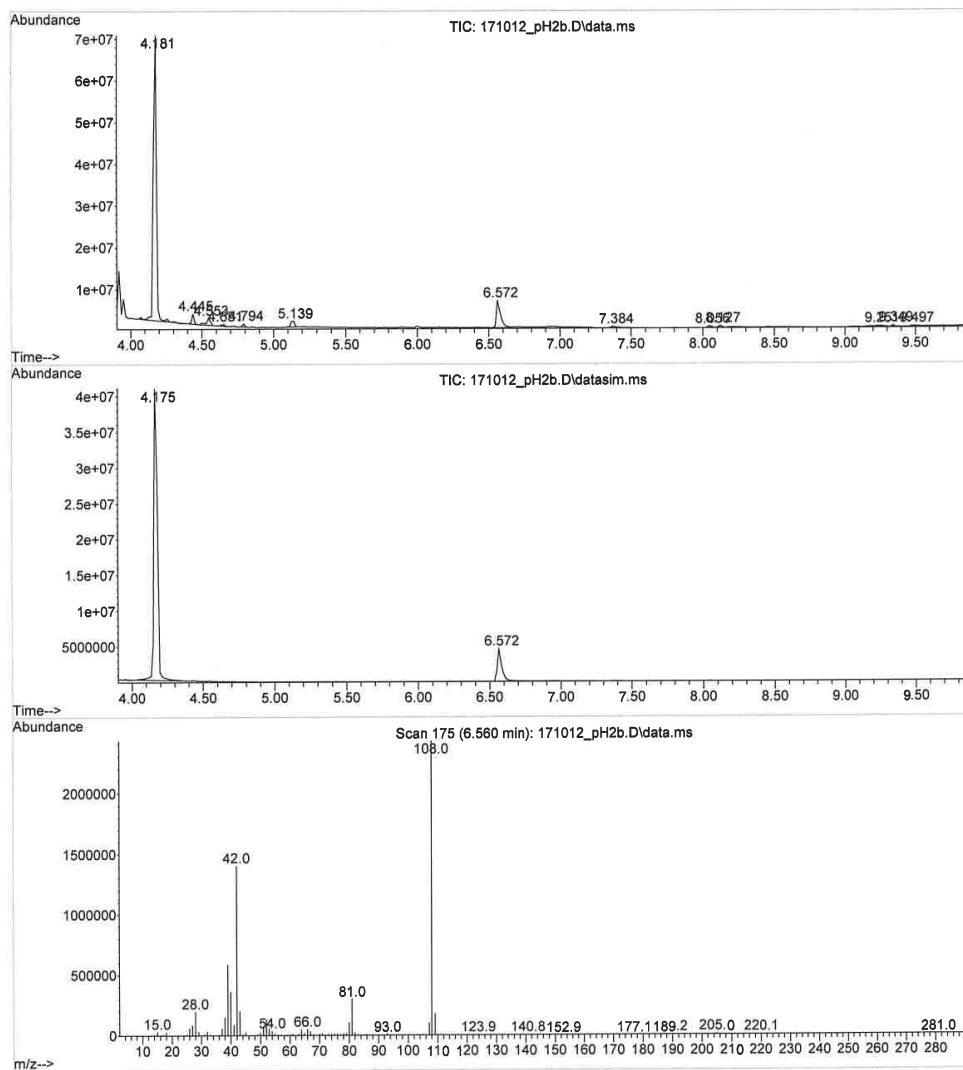


Figure S4. Top: Total ion chromatogram for the ethyl acetate extract of a dried pH 2 sample. Middle: sum of all ions selected for SIM showing a peak at 4.175 min corresponding to the pyrazine internal standard and a second peak at 6.572 min corresponding to 2,5-dimethylpyrazine. Bottom: Electron impact spectrum acquired at retention time 6.560 (during 2,5-DMP elution) with prominent fragments at m/z 108, 42, and 81.

Library Searched : D:\MassHunter\Library\NIST14.L
Quality : 91
ID : Pyrazine, 2,5-dimethyl-

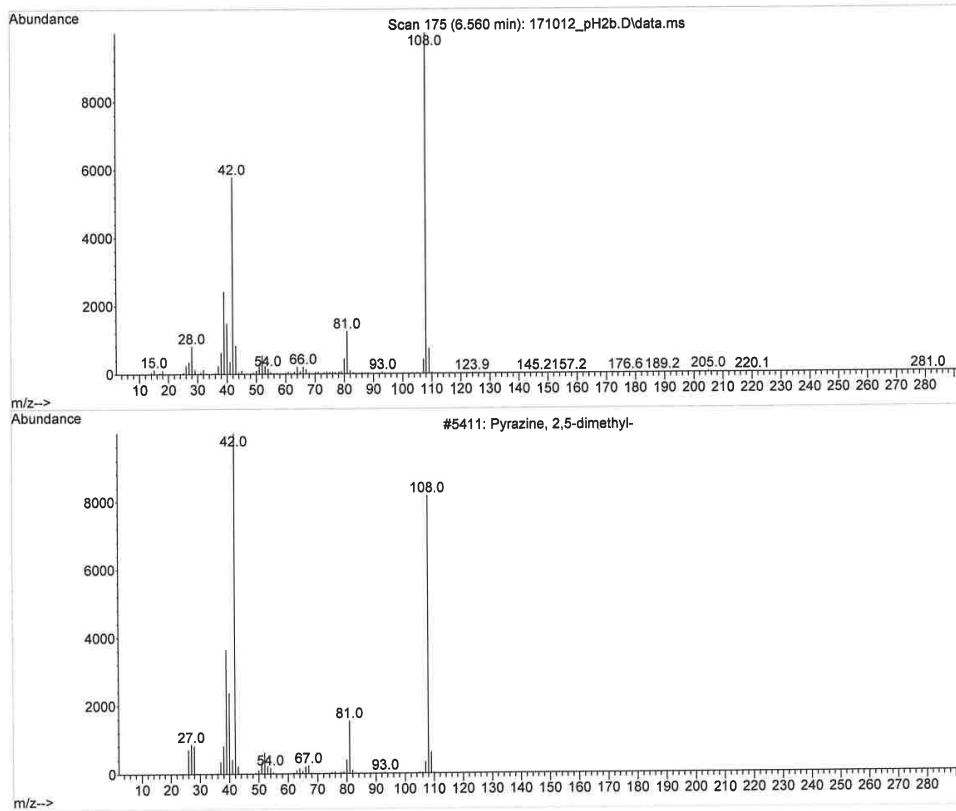


Figure S5. Top: spectrum obtained during elution of (proposed) 2,5-DMP peak from column. Bottom: NIST reference spectrum for electron impact ionization of 2,5-DMP.

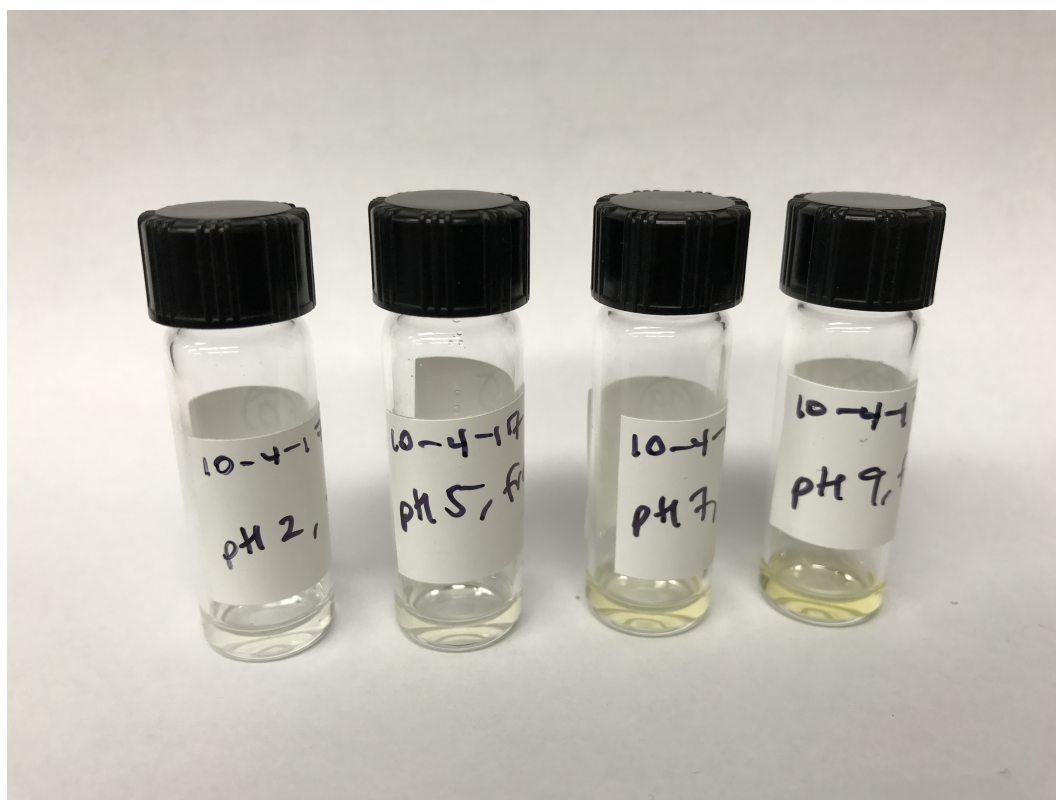


Figure S6. Image taken after 24 hours of reaction time between methylglyoxal and AS in capped samples. A pH dependence on absorbance is immediately visible.