Supplementary Information: Measurement of formic acid, acetic acid, hydrogen peroxide, and methyl peroxide in air by chemical ionization mass spectrometry: airborne method development

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12 Table S1: Reaction cell mixing ratios for glycolaldehyde based on Betterton and Hoffmann (1988) and Kua et al. (2010) in parts per 13 billion (ppb) for the three experimental cases at the five tested equilibration air flow rates.

Aadco flowrate (sccm)	Glycolaldehyde Reaction Cell Mixing Ratio (ppb)		
	Case 1	Case 2	Case 3
100	3.3	3.2	0.20
200	6.5	6.3	0.39
300	9.6	9.3	0.58
400	13	13	0.76
500	16	15	0.94

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30 Table S2 shows the expected GA reaction cell mixing ratio at different melt temperatures using the data from Petitjean et al. (2010).

Temperature (K)	Glycolaldehyde Reaction Cell Mixing Ratio (ppb)	
298	1.8	
318	8.4	
338	39	
358	180	
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Figure S1: Calibration sensitivities (cts/s/ppb, cps/ppb at m/z 80 (O_2 (MHP)) from DC3 and laboratory work for five CH₃I flow rates (0.5 – 2.0 sccm). The horizontal bar represents the limits of the reaction cell water vapor mixing ratio bin and the mean sensitivity of that bin is plotted. The length of the vertical bar represents one standard deviation and the variability represents random variations in pressure, ambient concentrations during the standard addition, and systematic variations due to water vapor in a bin, calibration gas precision, and instrumental precision.

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74 **References**

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