Supporting Information of:

Criegee Intermediates React with Levoglucosan on Water

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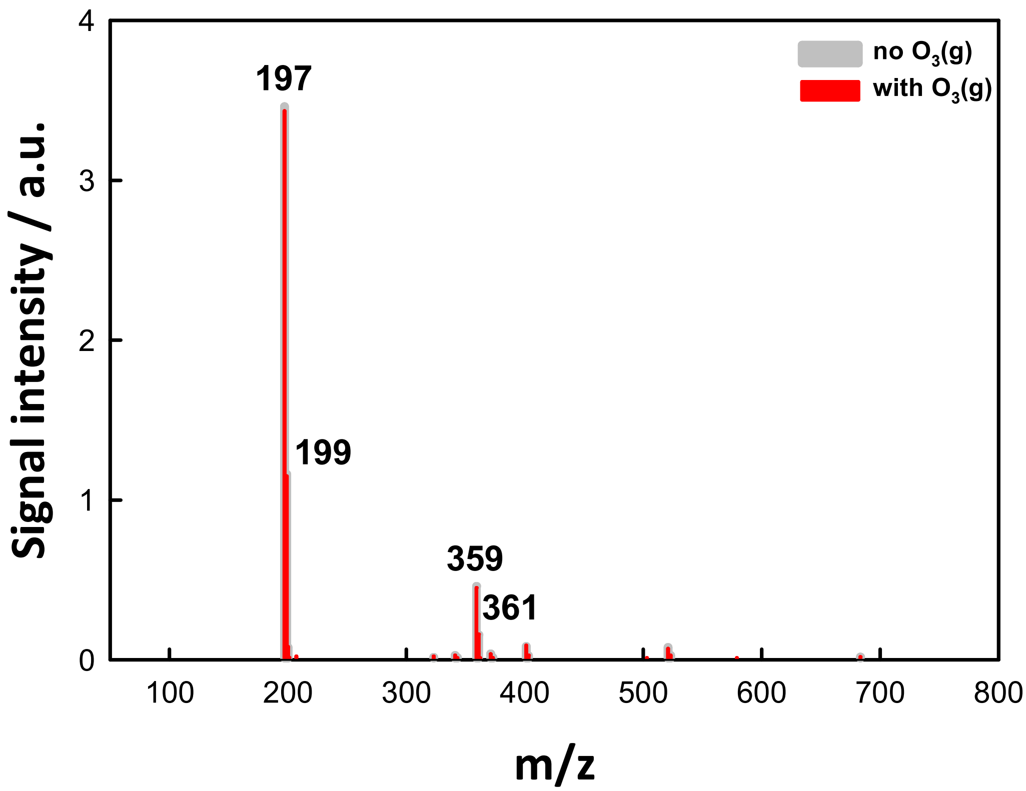

FIGURE S1: Negative ion mass spectra from 100 mM levoglucosan + 0.2 mM NaCl in AN:W (4:1 = vol:vol) solution microjets in the absence (gray) and presence of O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s). The m/z 197;199 and 359;361 correspond to chloride-Levo, and chloride-$(Levo)_2$ adducts, respectively. Note that no decrease of reactants and no product peaks are observed even with the largest O_3(g) exposure.

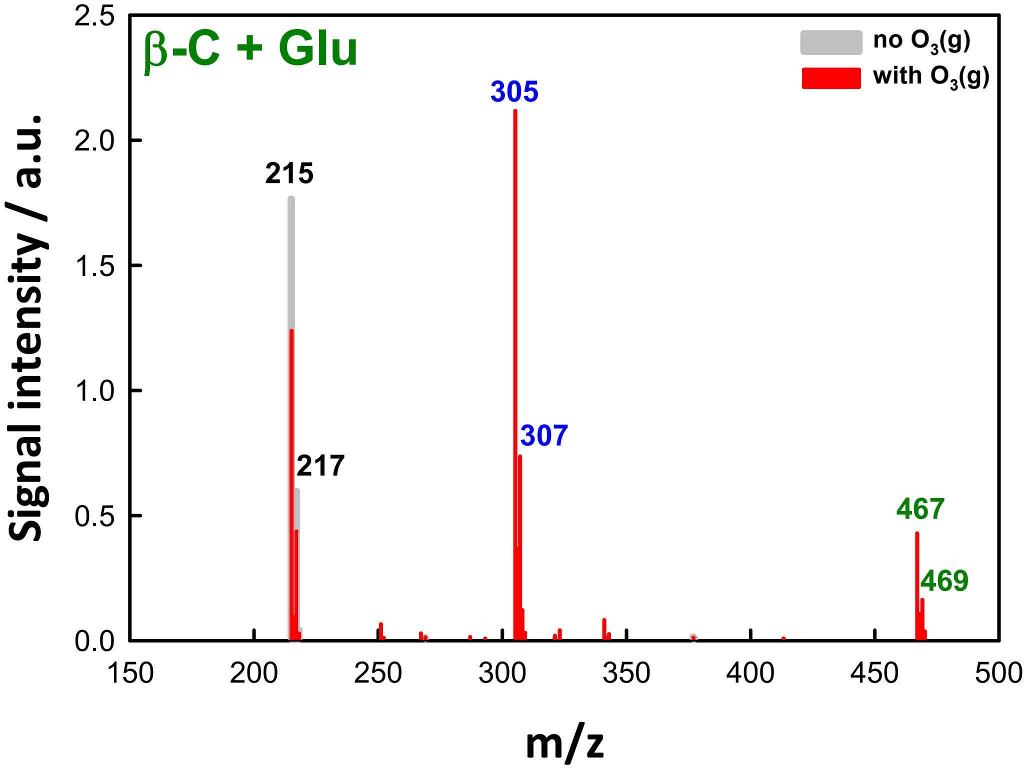

Figure S2 – Negative ion electrospray mass spectra of 1 mM β-C + 0.2 mM NaCl + 10 mM glucose in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.3 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 215;217 and 467;469 signals correspond to chloride-adducts of glucose and alkoxy-hydroperoxides (C_{21} ether species) from the β-C's CIs + glucose reaction, respectively.

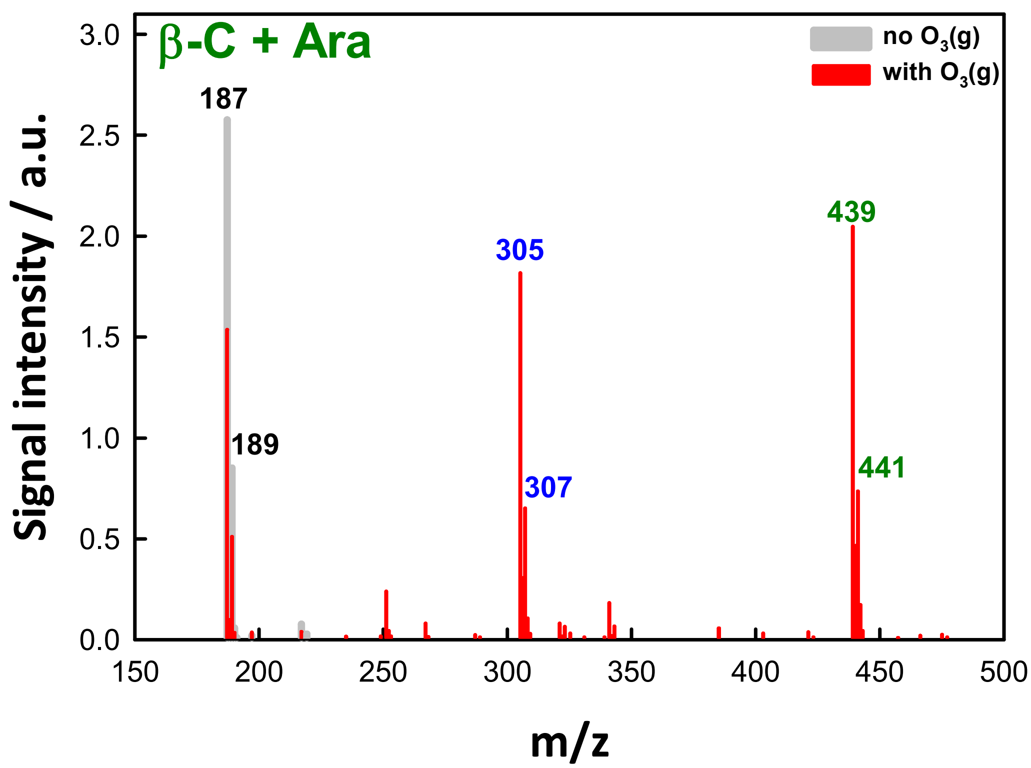

Figure S3 – Negative ion electrospray mass spectra of 1 mM β-C + 0.2 mM NaCl + 10 mM arabitol in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 187;189 and 439;441 signals correspond to chloride-adducts of arabitol and alkoxy-hydroperoxides (C_{20} ether species) from the β-C's CIs + arabitol reaction, respectively.

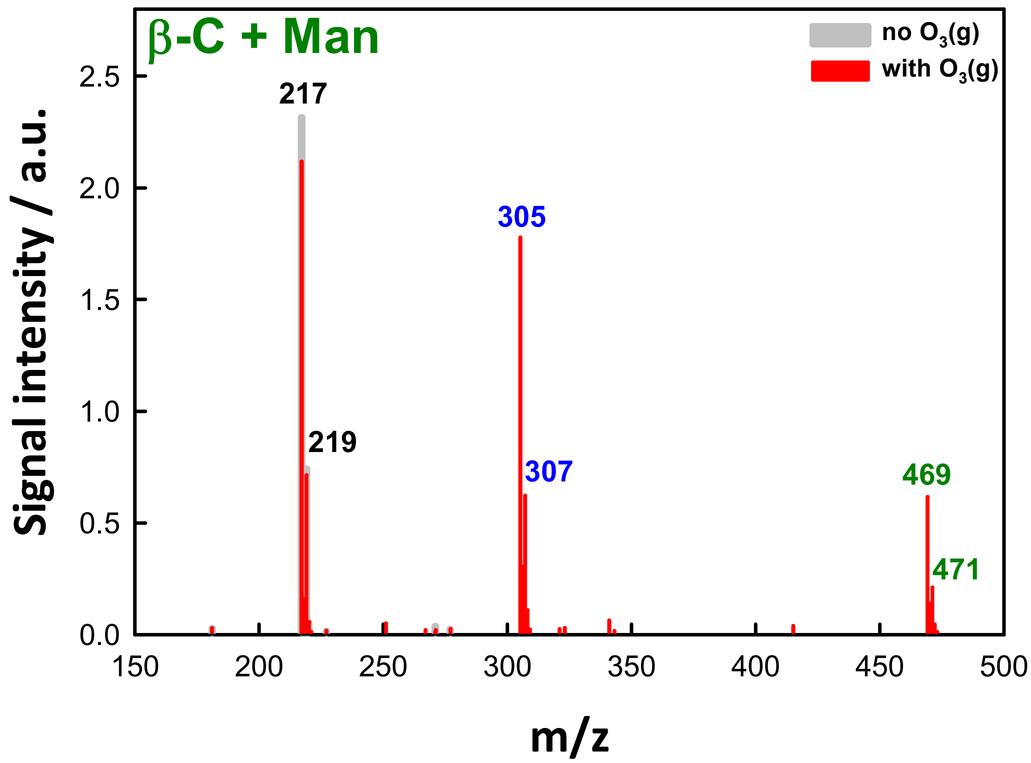

Figure S4 – Negative ion electrospray mass spectra of 1 mM β-C + 0.2 mM NaCl + 10 mM mannitol in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 217;219 and 469;471 signals correspond to chloride-adducts of mannitol and alkoxy-hydroperoxides (C_{21} ether species) from the β-C's CIs + mannitol reaction, respectively.

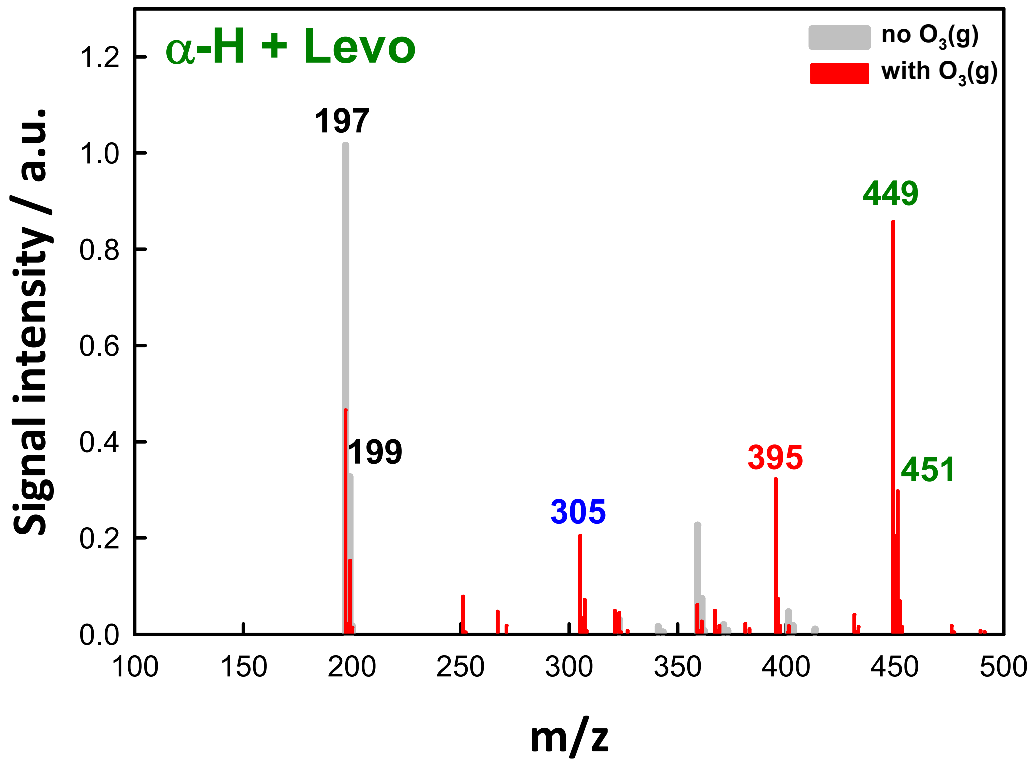

Figure S5 – Negative ion electrospray mass spectra of 1 mM α-H + 0.2 mM NaCl + 100 mM levoglucosan in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 449;451 signals correspond to chloride-adducts of alkoxy-hydroperoxides (C_{21} ether species) from the α-H's CIs + levoglucosan reaction.

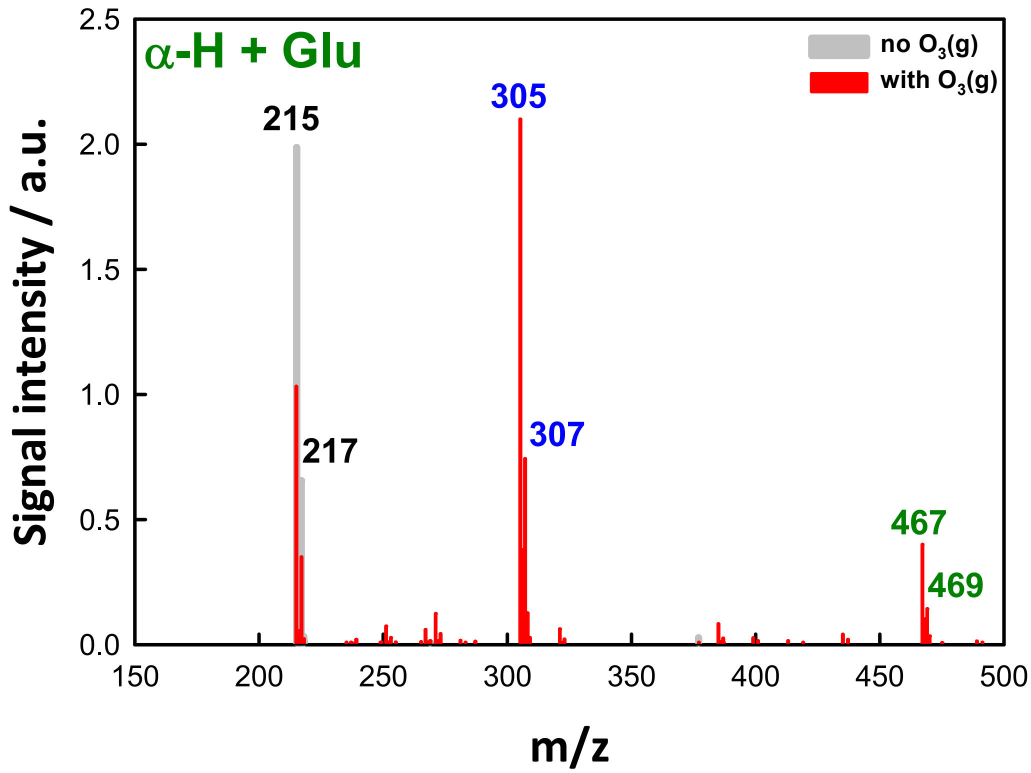

Figure S6 – Negative ion electrospray mass spectra of 1 mM α-H + 0.2 mM NaCl + 10 mM glucose in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, *E* = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 467;469 signals correspond to chloride-adducts of alkoxy-hydroperoxides (C_{21} ether species) from the α-H's CIs + glucose reaction.

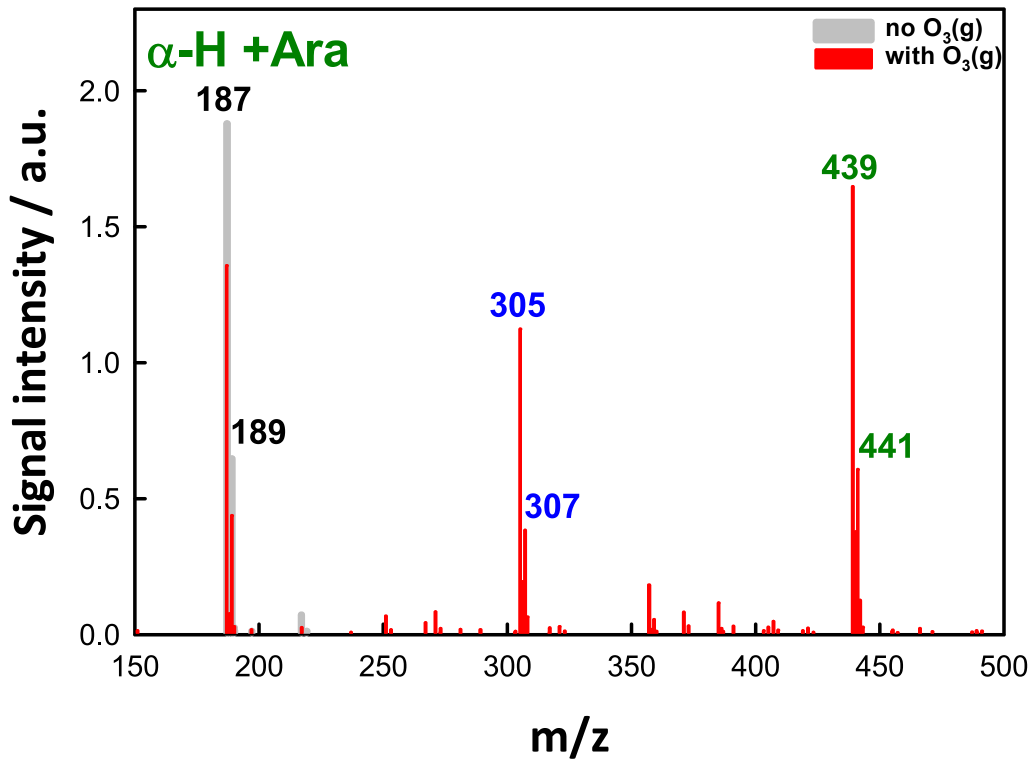

Figure S7 – Negative ion electrospray mass spectra of 1 mM α-H + 0.2 mM NaCl + 10 mM arabitol in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 439;441 signals correspond to chloride-adducts of alkoxy-hydroperoxides (C_{20} ether species) from the α-H's CIs + arabitol reaction.

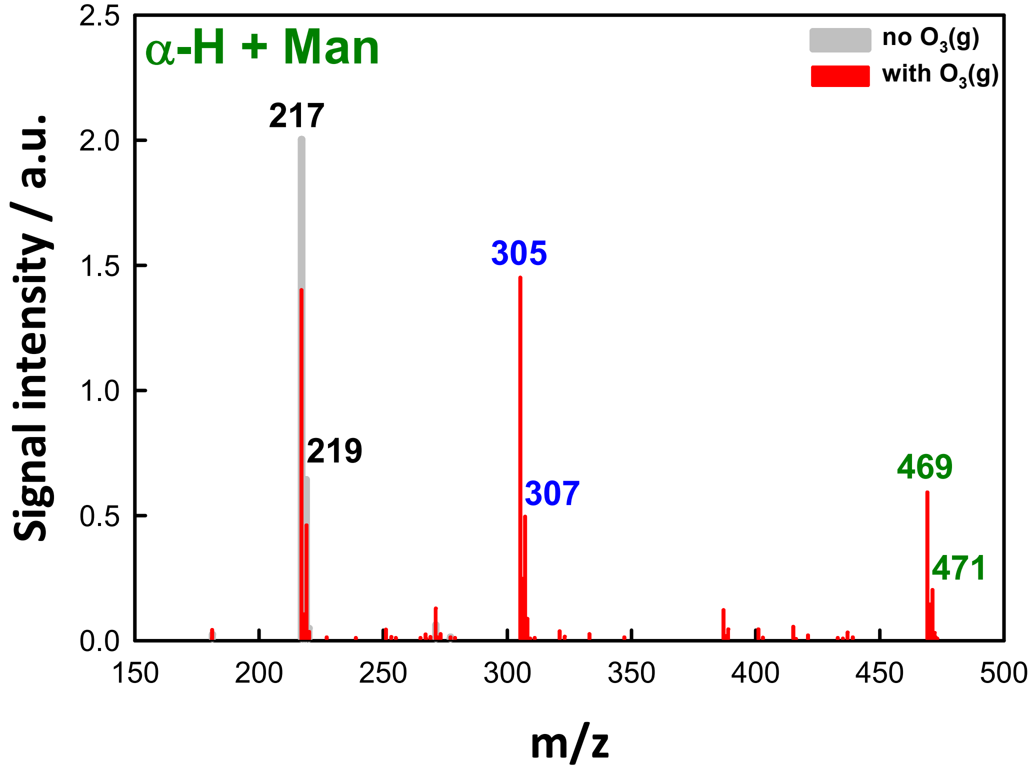

Figure S8 – Negative ion electrospray mass spectra of 1 mM α-H + 0.2 mM NaCl + 10 mM mannitol in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.3 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 469;471 signals correspond to chloride-adducts of alkoxy-hydroperoxides (C_{21} ether species) from the α-H's CIs + mannitol reaction.

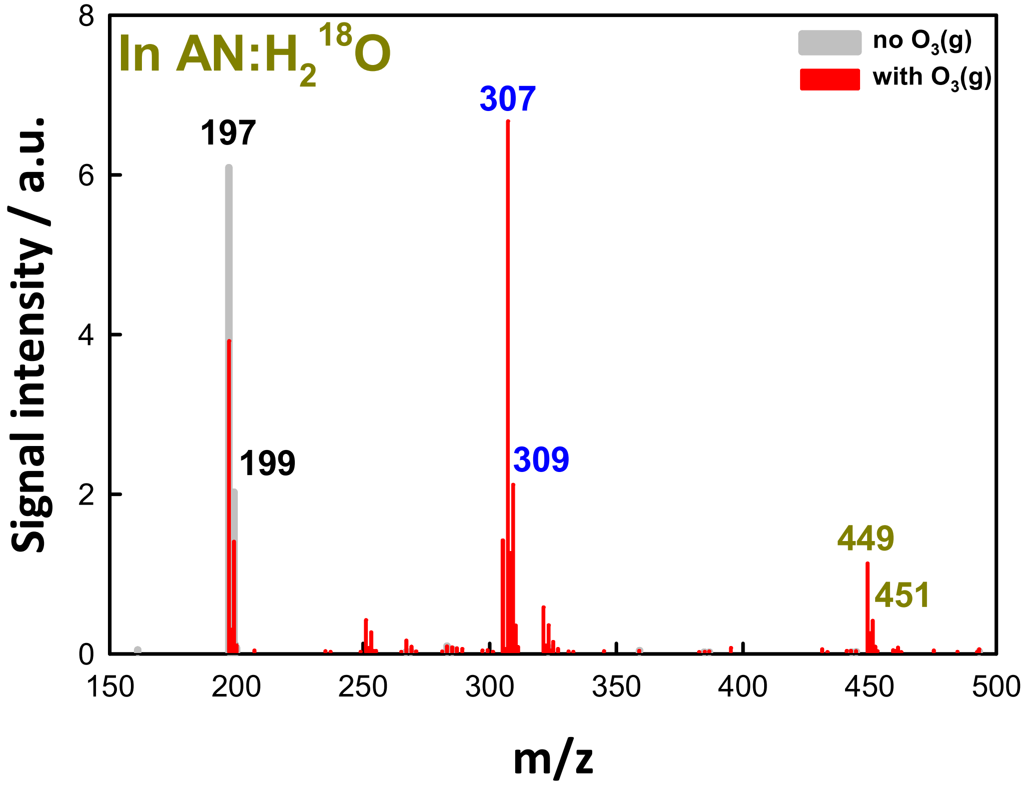

Figure S9 – Negative ion electrospray mass spectra of 1 mM β-C + 3 mM NaCl + 10 mM levoglucosan in AN:$H_2{}^{18}O$ (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s).

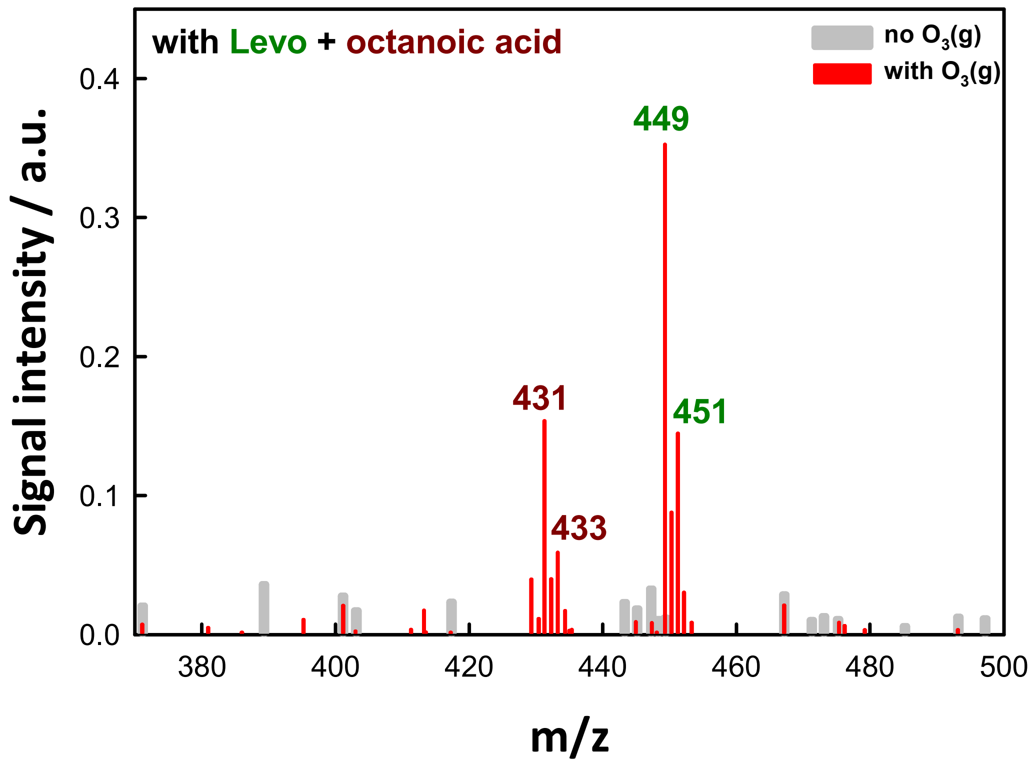

Figure S10 – Negative ion electrospray mass spectra of 1 mM β-C + 0.2 mM NaCl + 100 mM levoglucosan + 100 mM octanoic acid in AN:W (4:1=vol:vol) solution microjets (gray), or those exposed to O_3(g) (red, E = 2.4 x 10^{11} molecules cm^{-3} s) at 1 atm and 298 K. The m/z 431;433 signals correspond to α-acyloxy-hydroperoxides from the CIs + octanoic acid reaction.