Supplement Information:

Identification of Organic Hydroperoxides and Peroxy Acids Using Atmospheric Pressure Chemical Ionization – Tandem Mass Spectrometry (APCI-MS/MS): Application to Secondary Organic Aerosol

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Contains 9 figures, with chemical structures of the ROOH analyzed (Figure SI1), other chemicals tested (Figure SI2), fragmentation of $[M+NH_4^+]^+$ for ROOH (Figure SI3), product spectra of $[M+NH_4^+]^+$ for benzoyl peroxide and pinonic acid (Figure SI4), mass spectrum of peracetic acid (PAA) in the presence of AA and the product mass spectrum of ammoniated molecular ion of PAA (Figure SI5), mass spectrum of reaction of glyoxal with H_2O_2 in the presence of AA and the product mass spectrum of ammoniated molecular ion of glyoxal (Figure SI6), product spectrum of m/z 206 from α-pinene SOA (Figure SI7), reaction mechanisms for the ROOH products from ozone reaction of α-pinene (Figure SI8), and mass spectra of SOA and ROOH from ozone reaction with α-pinene under dry (RH<5%) and humid (RH=50%) conditions (Figure SI9).

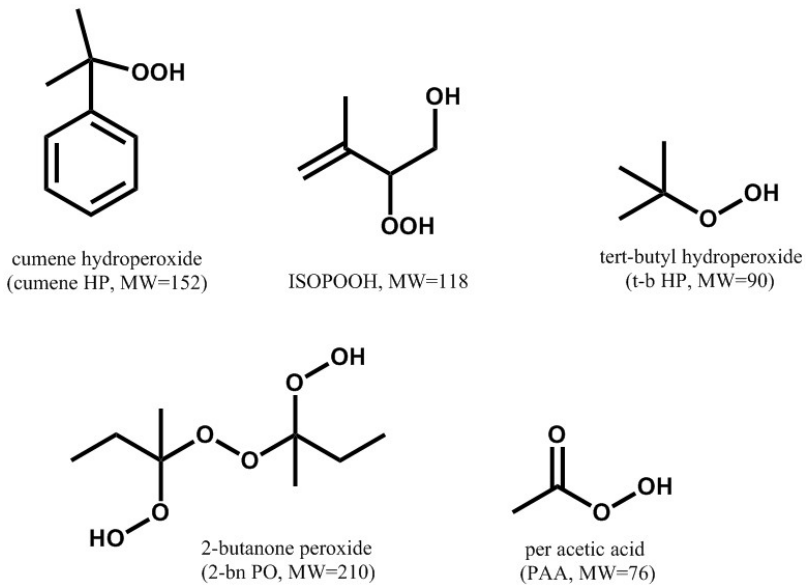

Figure SI1. Chemical Structures and the Molecular Weights (MW) of the ROOH Analyzed in This Work.

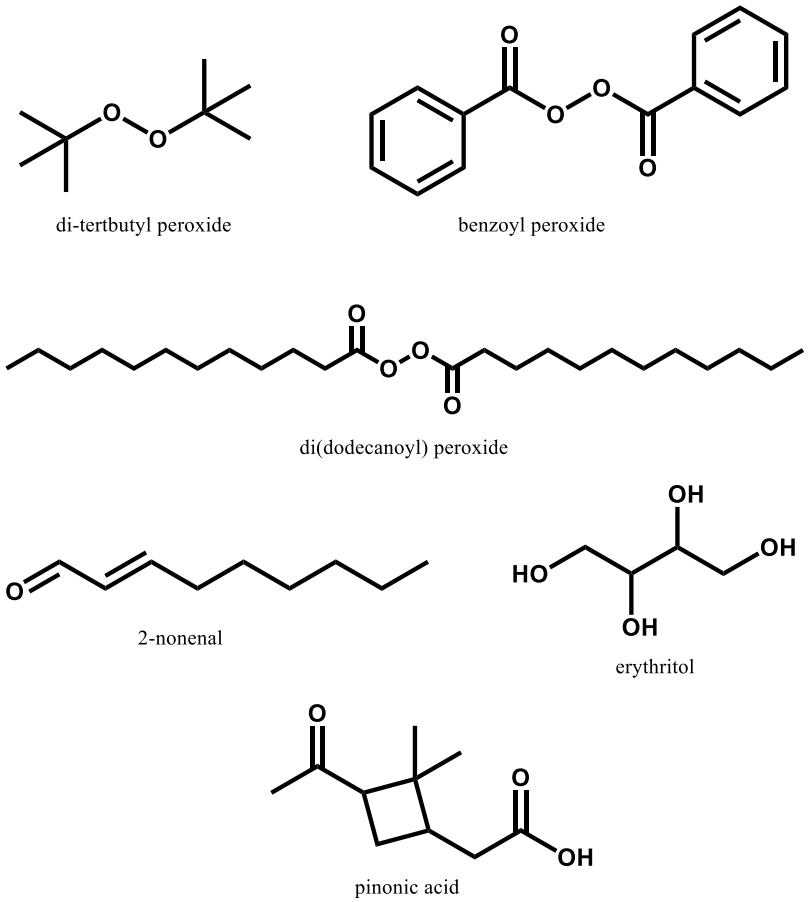

Figure SI2. Other chemicals tested in this work.

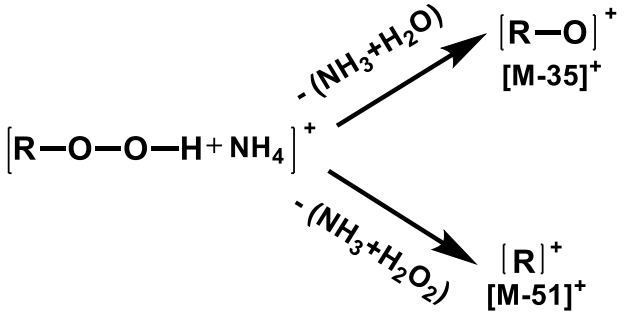

Figure SI3. Fragmentation of $[M+NH_4^+]^+$ for ROOH.

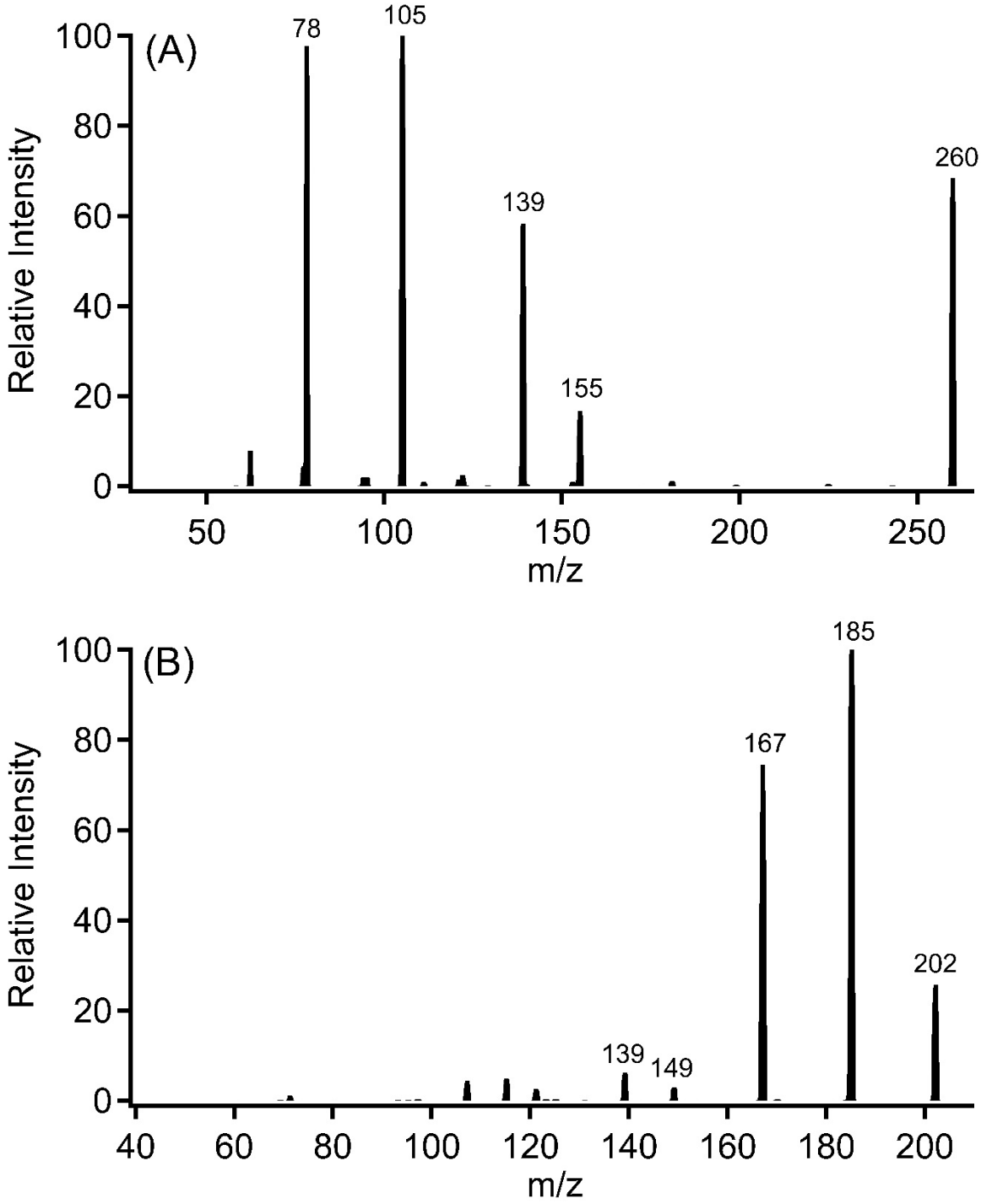

Figure SI4. Product spectra of $[M+NH_4^+]^+$ for (A) benzoyl peroxide, and (B) pinonic acid.

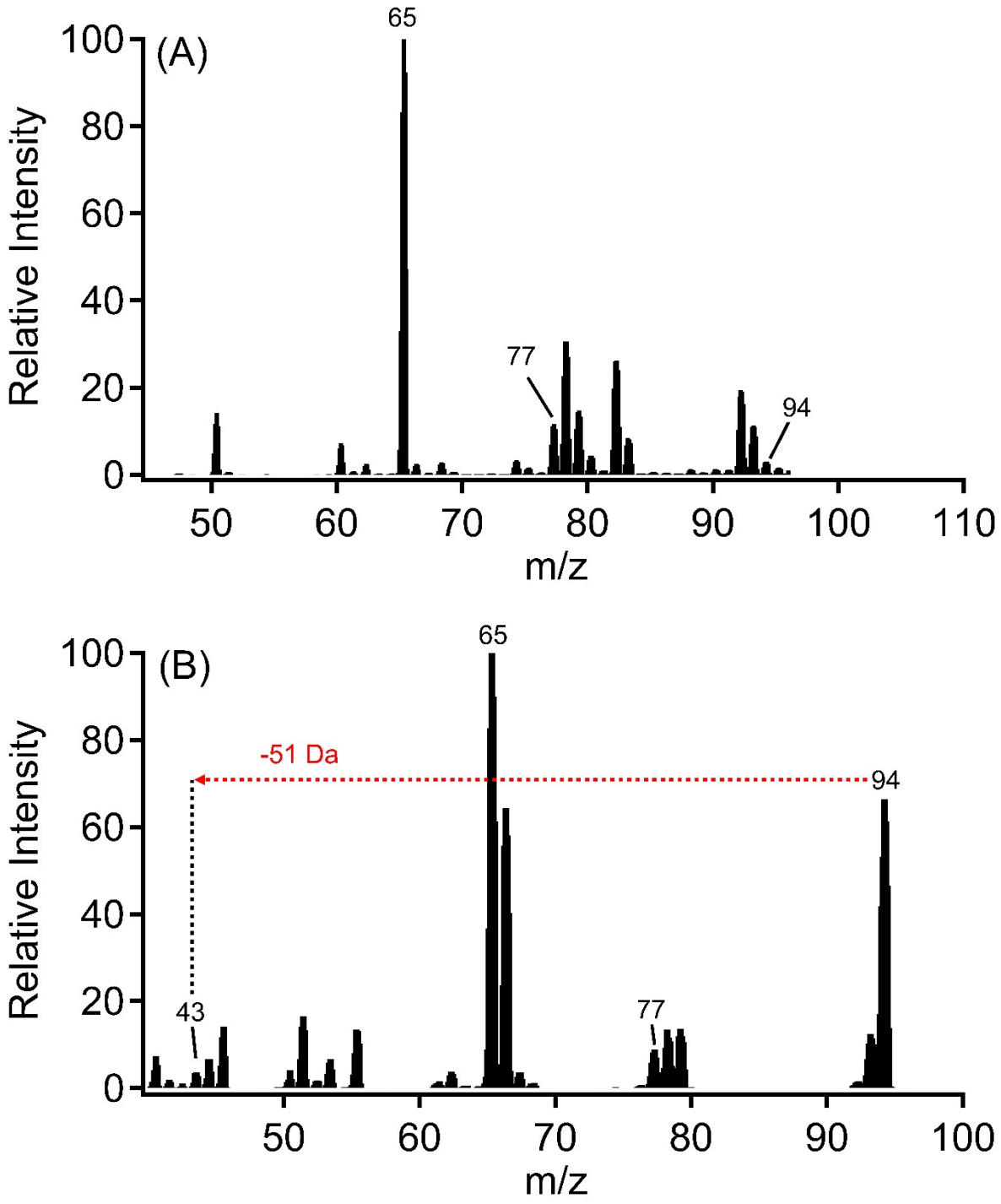

Figure SI5. (A) Mass spectrum of peracetic acid (PAA) in the presence of AA; (B) Product mass spectrum of m/z 94 from (A).

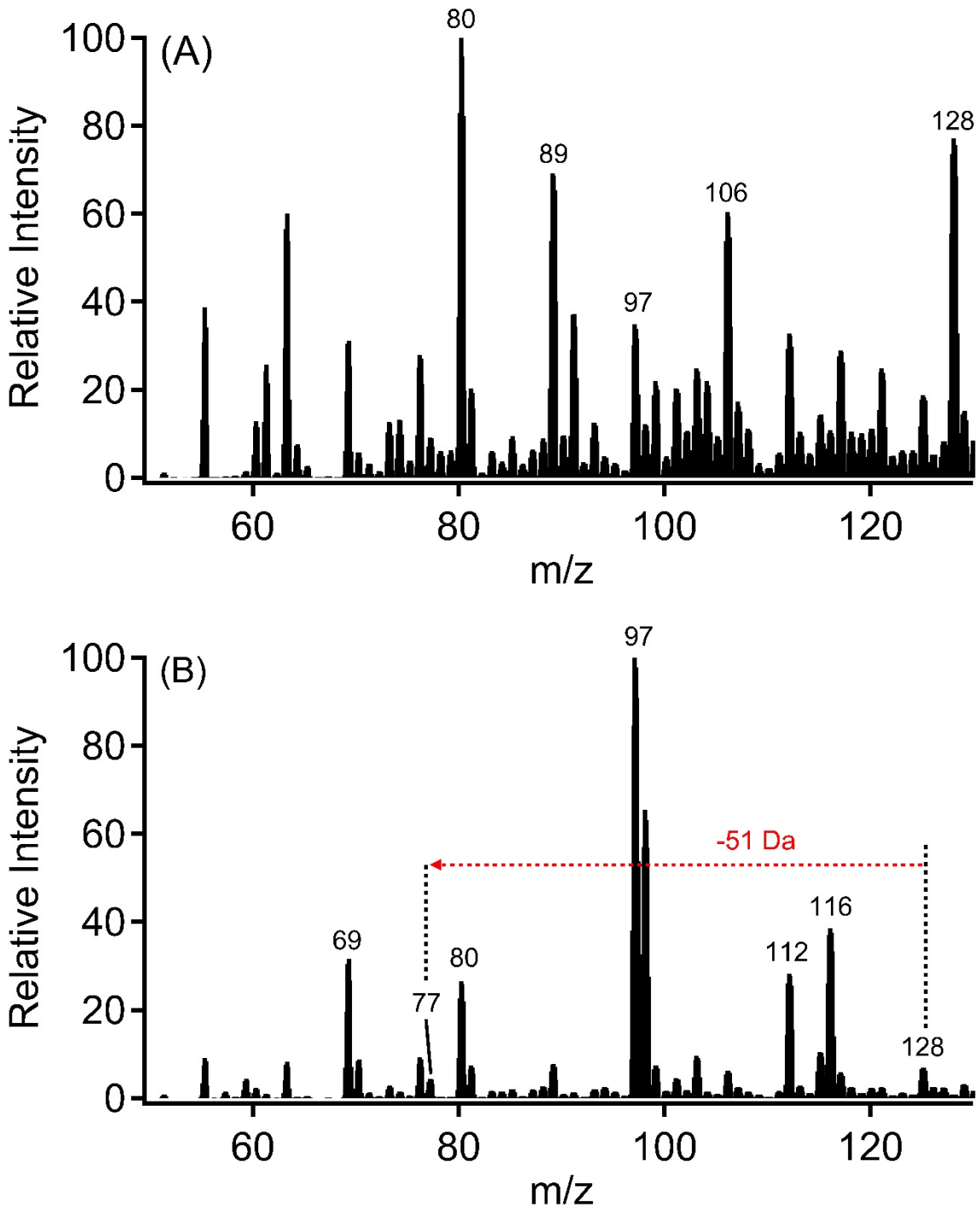

Figure SI6. (A) Mass spectrum of reaction of glyoxal with H_2O_2 in the presence of AA; (B) Product mass spectrum of m/z 128 from (A).

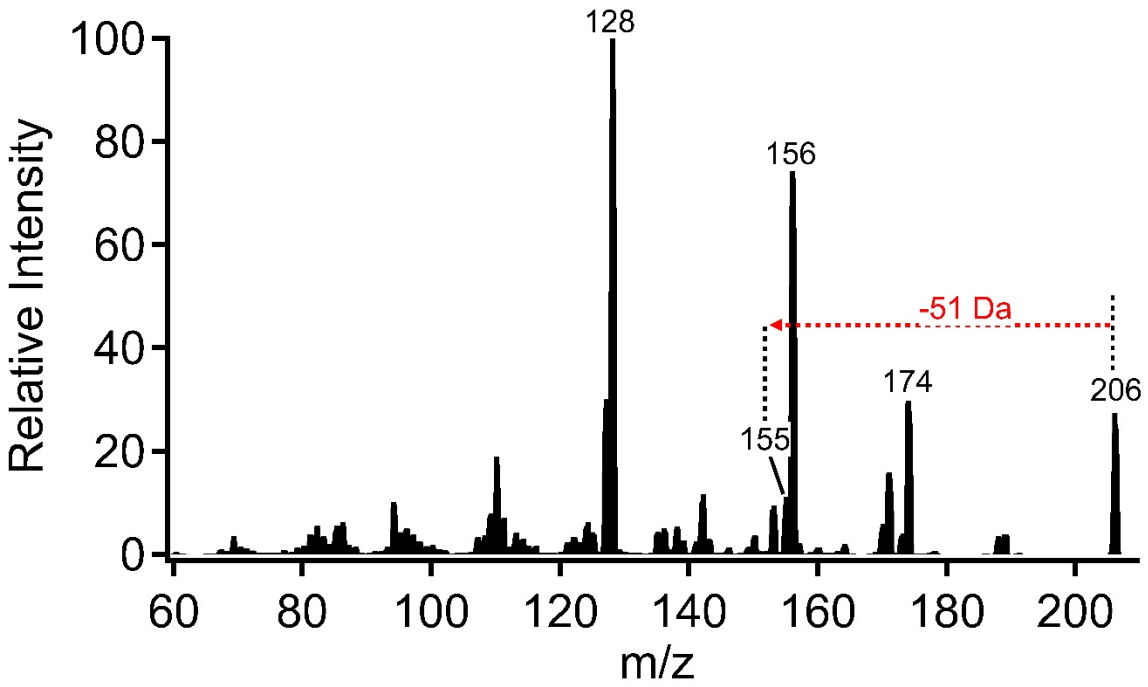

Figure SI7. Product spectrum of m/z 206 from α-pinene SOA.

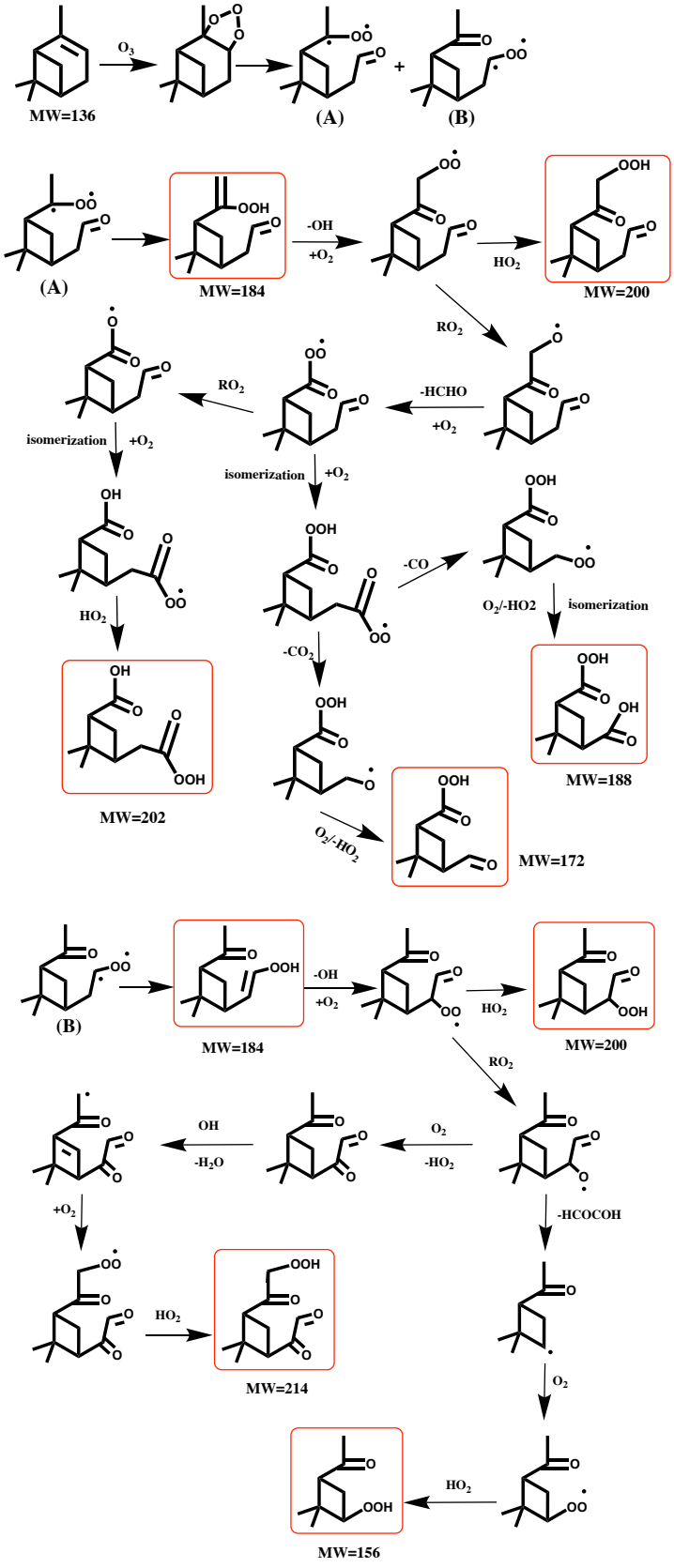

Figure SI8. Reaction mechanisms for the ROOH products from ozone reaction of α-pinene.

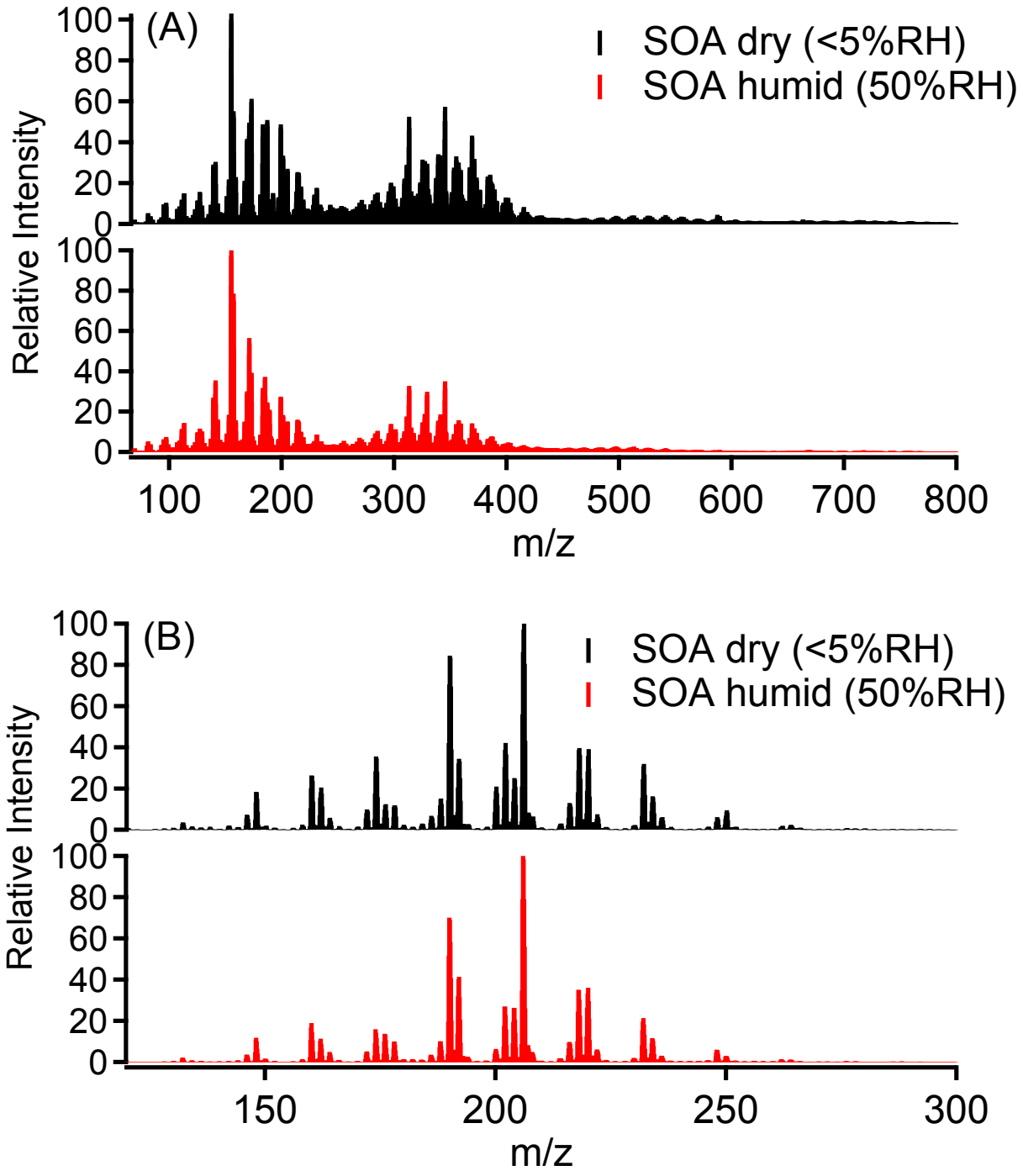

Figure SI9. Mass spectra of (A) SOA, and (B) ROOH from ozone reaction with α-pinene under dry (RH<5%) and humid (RH=50%) conditions.