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Supplement of

Characterization of polar organosulfates in secondary organic aerosol from the unsaturated aldehydes 2-E-pentenal, 2-E-hexenal, and 3-Z-hexenal

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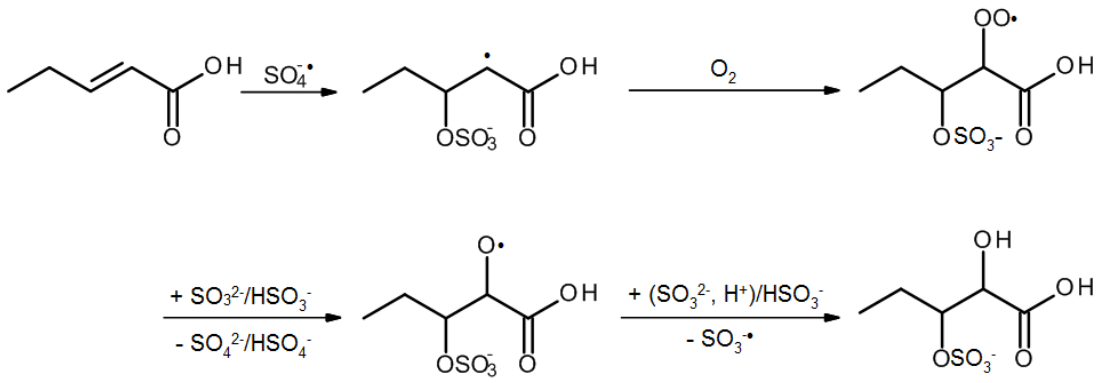

Scheme S1. Formation mechanism for 3-sulfoxy-2-hydroxypentanoic acid through reaction of 2-*E*-pentenoic acid with the sulfate radical anion in aqueous solution.

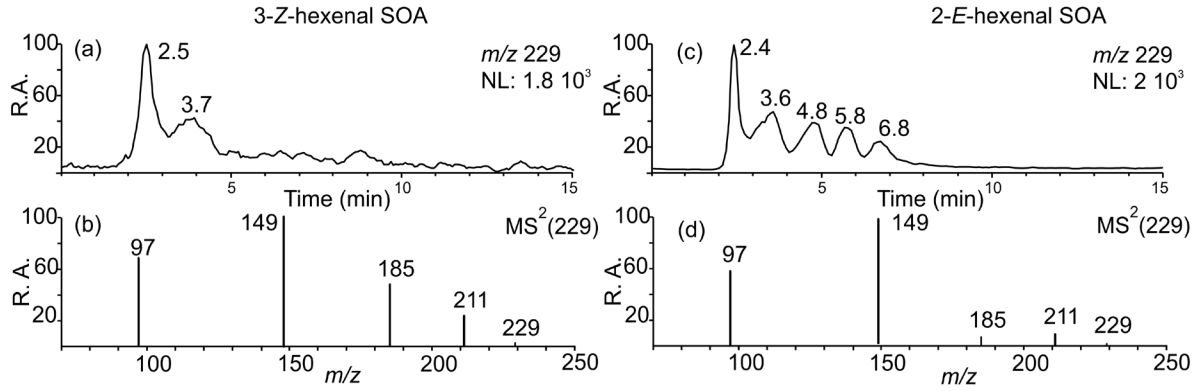

Figure S1. Selected LC/MS extracted ion chromatographic data (*m/z* 229) for the selected filters containing 3-*Z*-hexenal and 2-*E*-hexenal SOA, as well as a MS^2 product ion spectrum for the peak eluting at 2.5 min and 2.4 min, respectively.

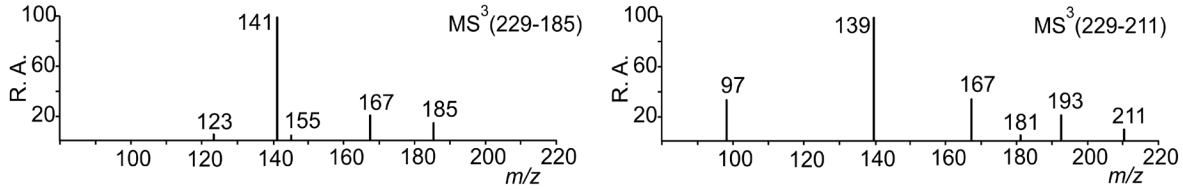

Figure S2. Additional MS^3 product ion data for the peak at 2.5 min present in ambient fine aerosol (Fig. 2a).

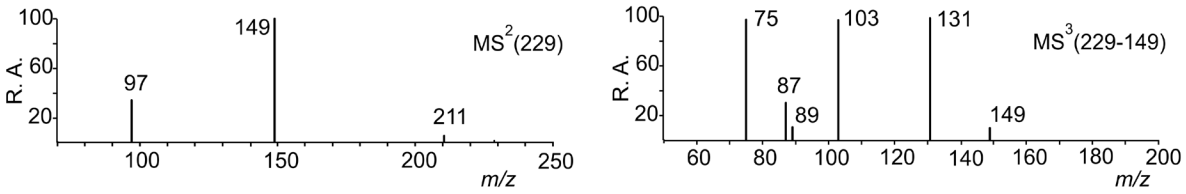

Figure S3. Selected MS data (MS^2 or MS^3 product ion spectra) for the peak eluting at 2.2 min in ambient aerosol (Fig. 2a).

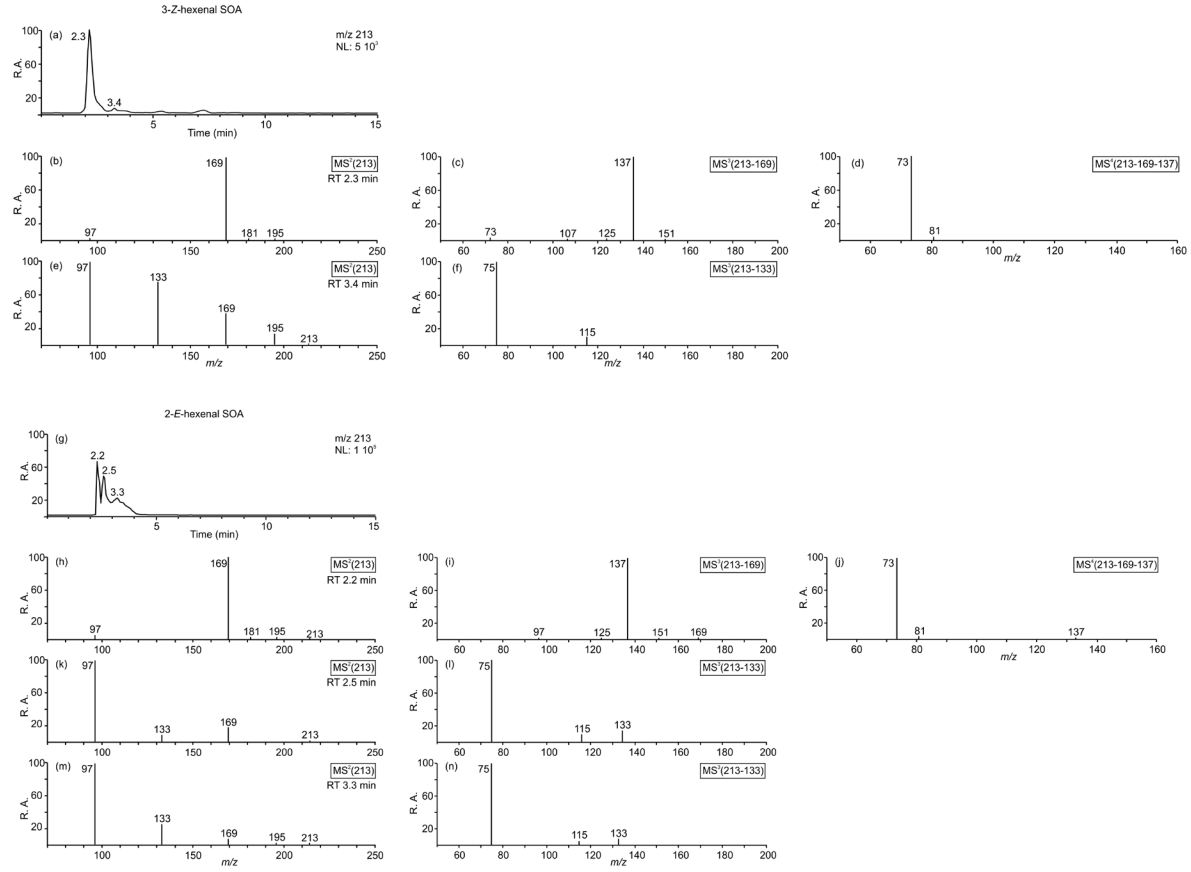

Figure S4. Selected LC/MS chromatographic data (*m/z* 213 EICs) and MS data (MS^2, MS^3 and MS^4 product ion spectra) for 3-*Z*-hexenal **(a-f)** and 2-*E*-hexenal SOA **(g-n)**. Abbreviation: NL, normalization level.

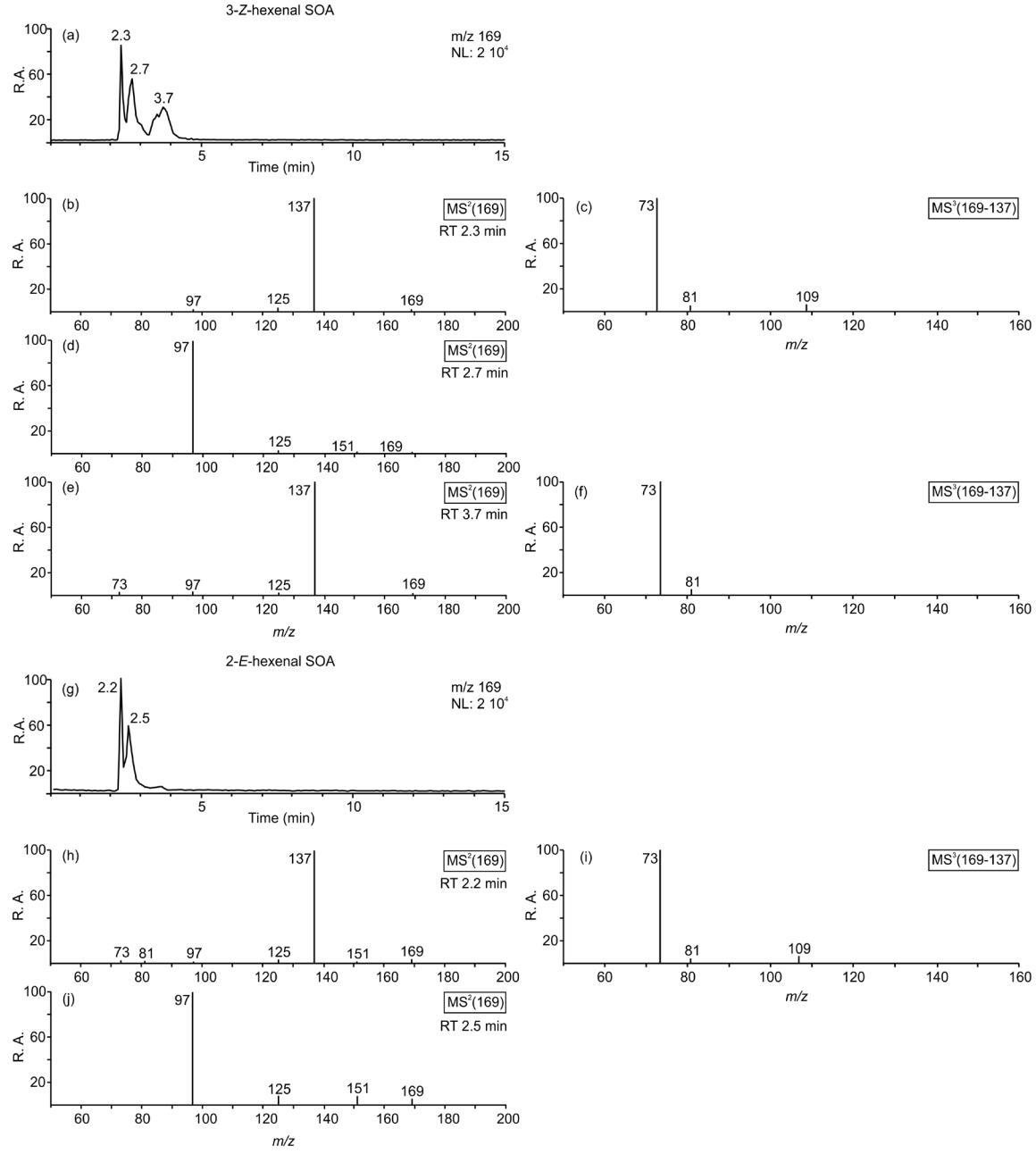

Figure S5. Selected LC/MS chromatographic data (*m/z* 169 EICs) and MS data (MS^2 and MS^3 product ion spectra) for 3-*Z*-hexenal SOA **(a-f)**, and 2-*E*-hexenal SOA **(g-j)**. The peak at RT 3.7 min in 2-*E*-hexenal SOA **(g)** is minor, but detailed analysis shows that the same *m/z* 169 compound as in 3-*Z*-hexenal SOA **(a)** is present. Abbreviation: NL, normalization level.