



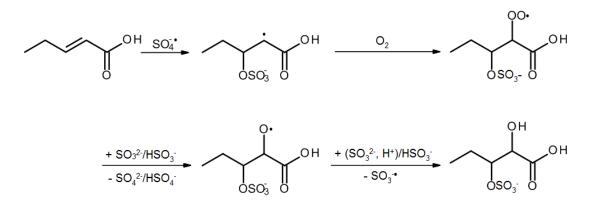
## Supplement of

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

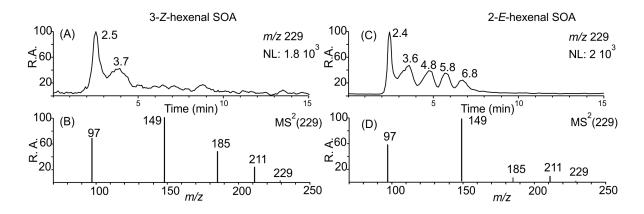
M. S. Shalamzari et al.

Correspondence to: M. Claeys (magda.claeys@uantwerpen.be)

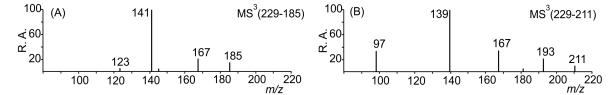
The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.



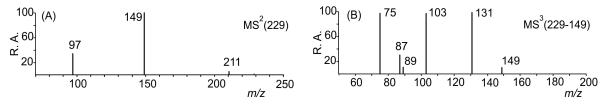
**Scheme S1.** Formation mechanism for 3-sulfoxy-2-hydroxypentanoic acid through reaction of 2-*E*-pentenoic acid with the sulfate radical anion in aqueous solution.



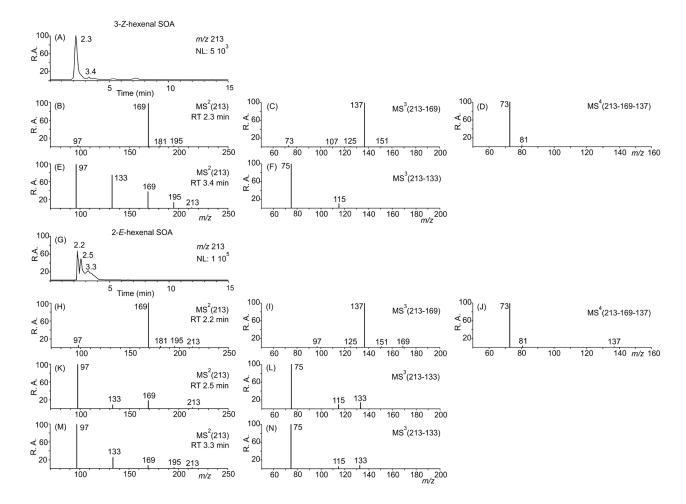
**Figure S1.** Selected LC/MS extracted ion chromatographic data (m/z 229) for the selected filters containing 3-*Z*-hexenal and 2-*E*-hexenal SOA, as well as a MS<sup>2</sup> product ion spectrum for the peak eluting at 2.5 min and 2.4 min, respectively.



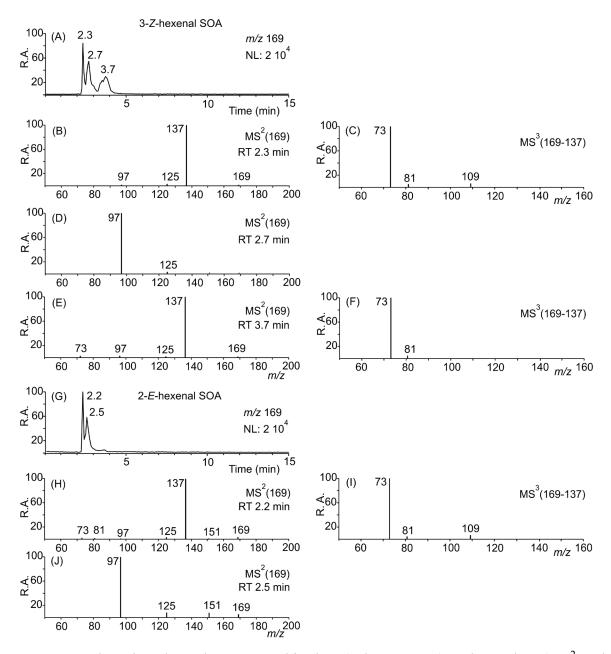
**Figure S2.** Additional  $MS^3$  product ion data for the peak at 2.5 min present in ambient fine aerosol [Fig. 2(A)].



**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. 2(A)].



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



**Figure S5.** Selected LC/MS chromatographic data (m/z 169 EICs) and MS data (MS<sup>2</sup> and MS<sup>3</sup> 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 is minor, but detailed analysis shows that the same m/z 169 compound as in 3-*Z*-hexenal SOA is present. Abbreviation: NL, normalization level.