

## Supporting Information for

### Oxidative Fragmentation of Hydroxy Octadecadienoates

### Generates Biologically Active $\gamma$ -Hydroxyalkenals

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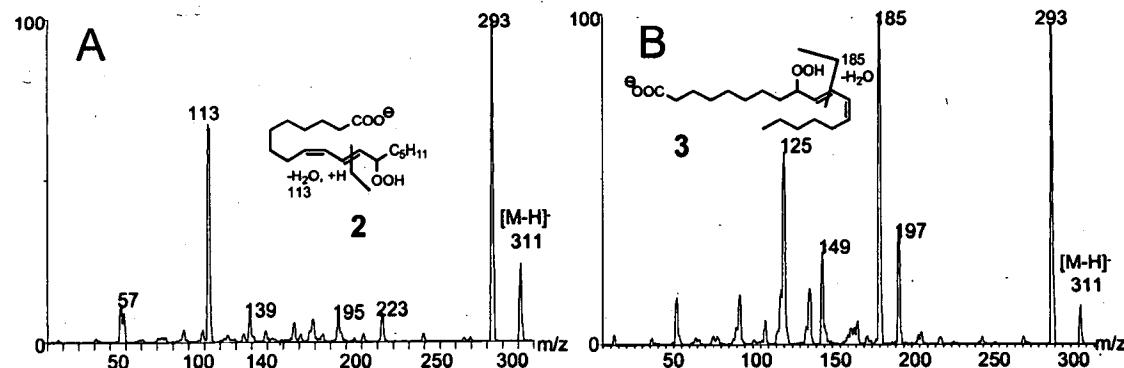


Figure S1. Negative ion ESI-MS/MS spectra of 13-HPODE (2) and 9-HPODE (3)

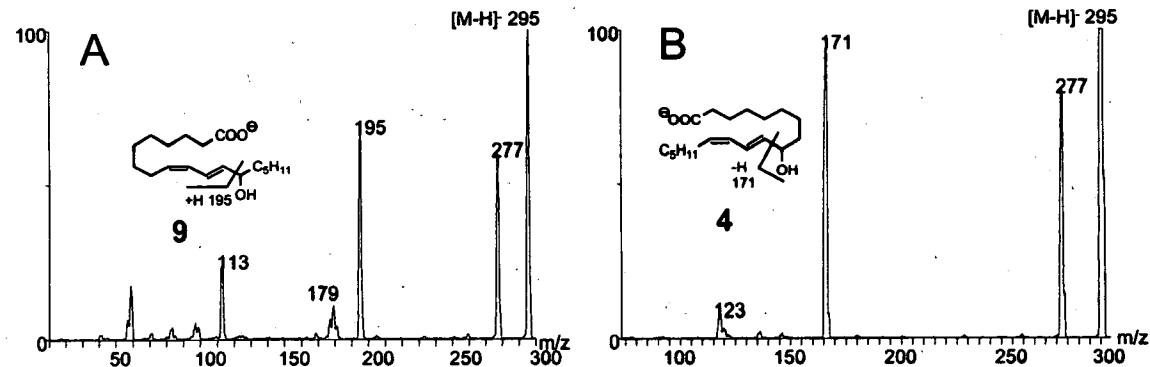


Figure S2. Negative ion ESI-MS/MS spectra of 13-HODE (9) and 9-HODE (4).

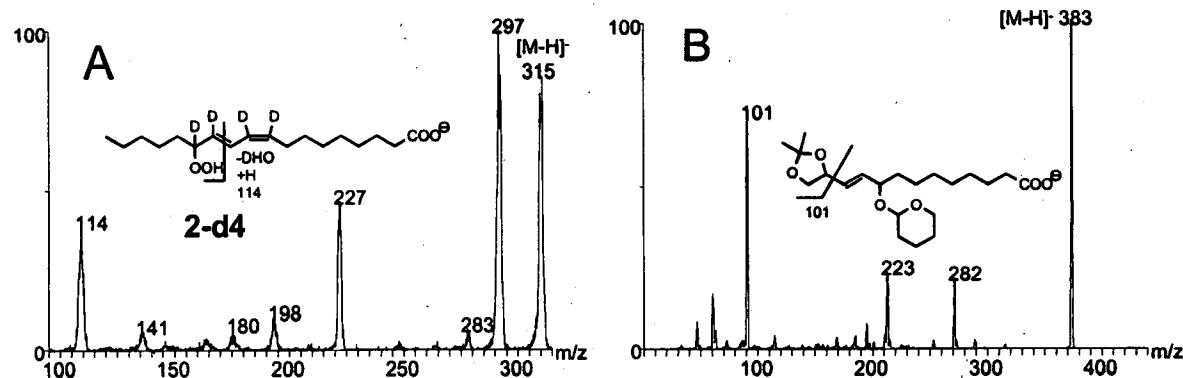
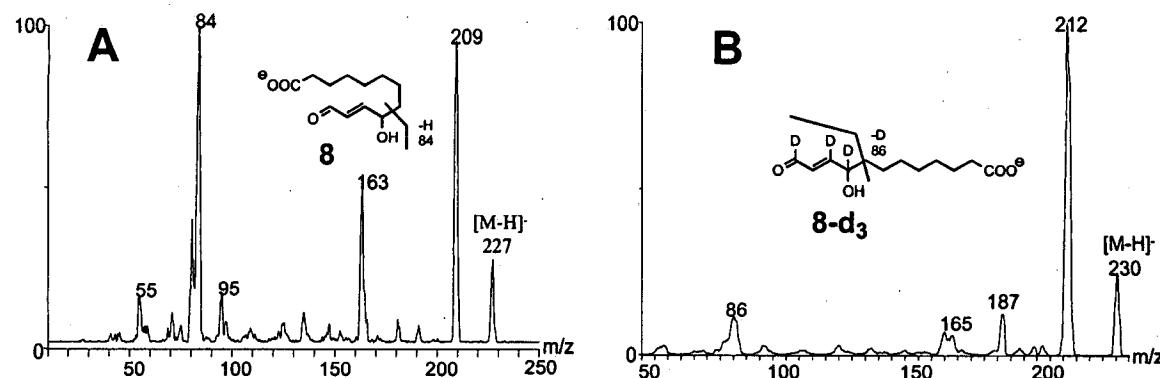
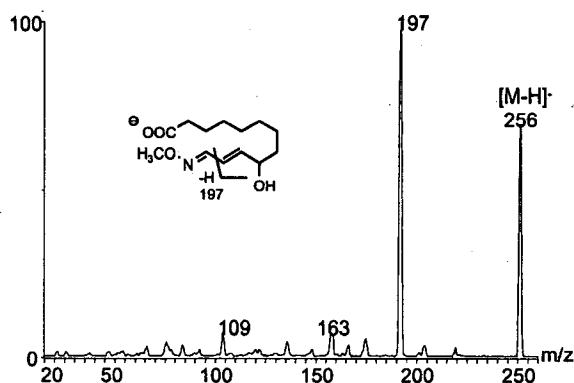


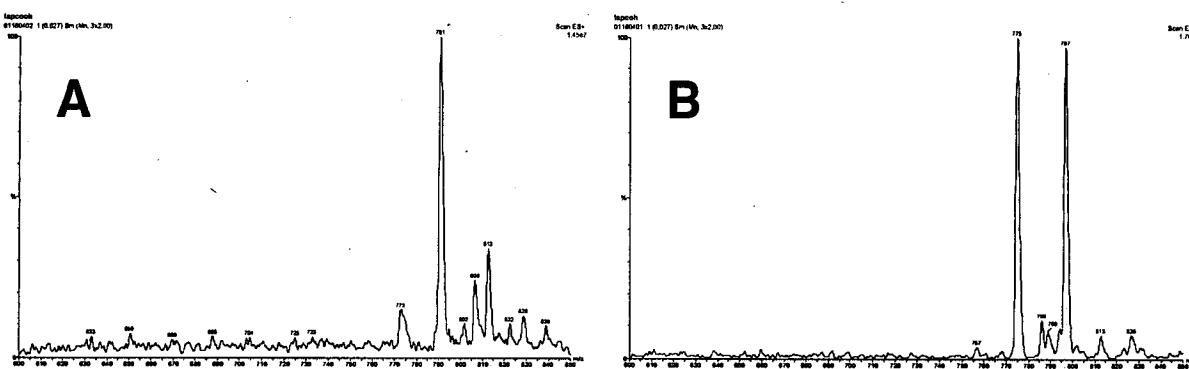
Figure S3. Negative ion ESI-MS/MS spectra of 13-HPODE-d<sub>4</sub> (2-d<sub>4</sub>) and internal standard.



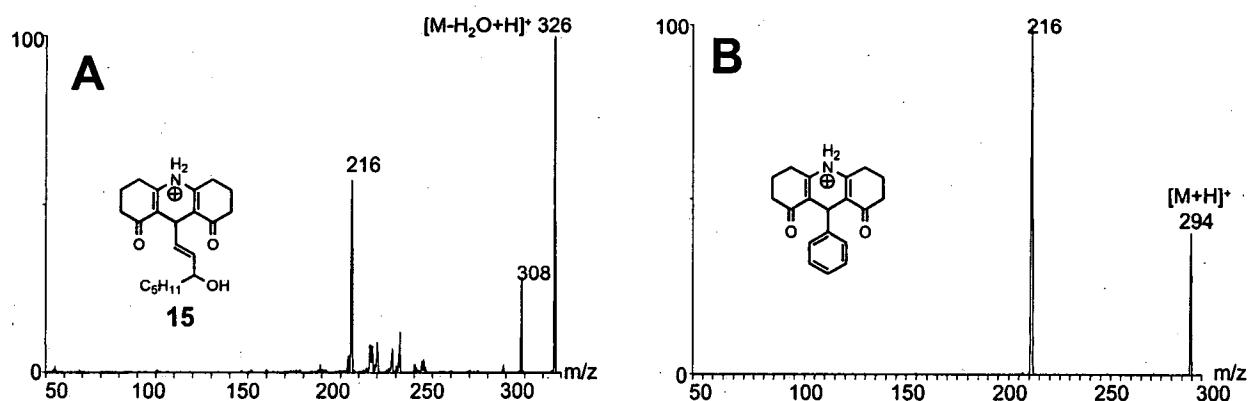
**Figure S4.** Negative ion ESI-MS/MS of HODA-d<sub>0</sub> (**8**) and HODA-d<sub>3</sub> (**8-d<sub>3</sub>**).



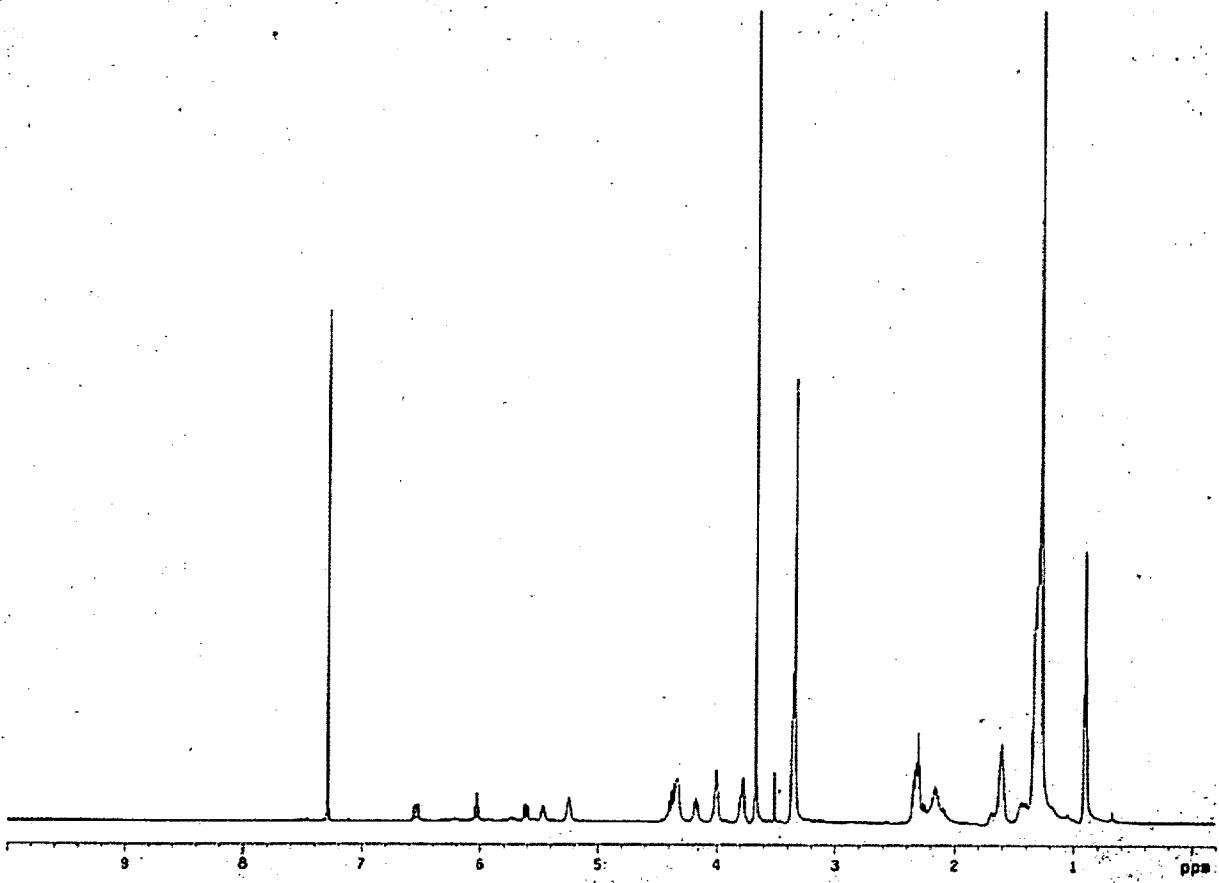
**Figure S5.** Negative ion ESI-MS/MS spectrum of HODA methoxime derivative.



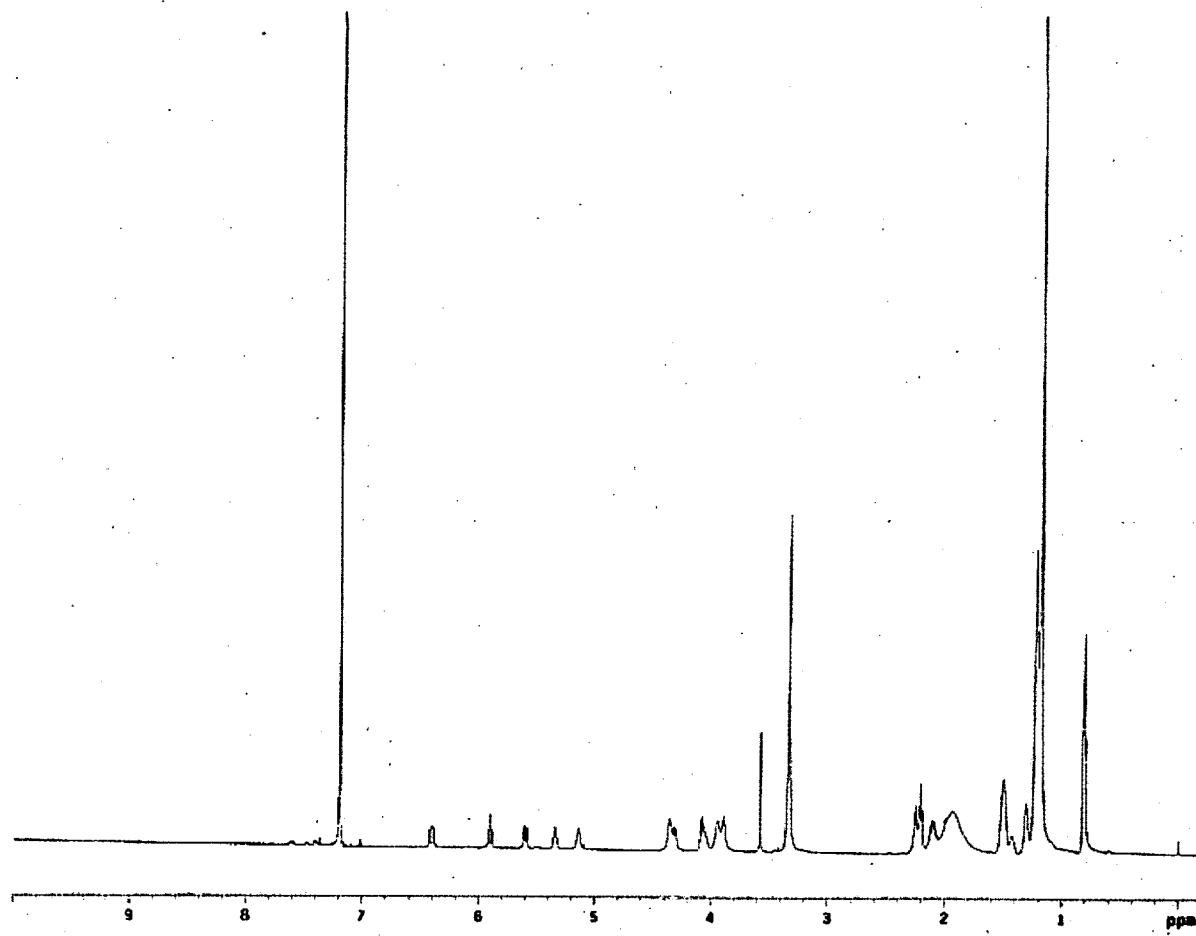
**Figure S6.** Positive ion ESI-MS/MS spectra of HPODE-PC and HODE-PC: (A) HPODE-PC, m/z 791 is M+H<sup>+</sup>, and m/z 813 is M+Na<sup>+</sup>, (B) HODE-PC, m/z 775 is M+H<sup>+</sup>, and m/z 797 is M+Na<sup>+</sup>.



**Figure S7.** Positive ion ESI-MS/MS spectra of CHD derivatives of HNE and benzaldehyde.



**Figure S8.** <sup>1</sup>H NMR (CDCl<sub>3</sub>, 600 MHz) 13-HPODE-PC (81%) and 9-HPODE-PC (19%) regioisomers.



**Figure S9.** <sup>1</sup>H NMR ( $\text{CDCl}_3$ , 600 MHz) 13-HODE-PC (81%) and 9-HODE-PC (19%) regioisomers.