

**Supplement for:**

**Inflammatory responses to secondary organic aerosols (SOA) generated from biogenic and anthropogenic precursors**

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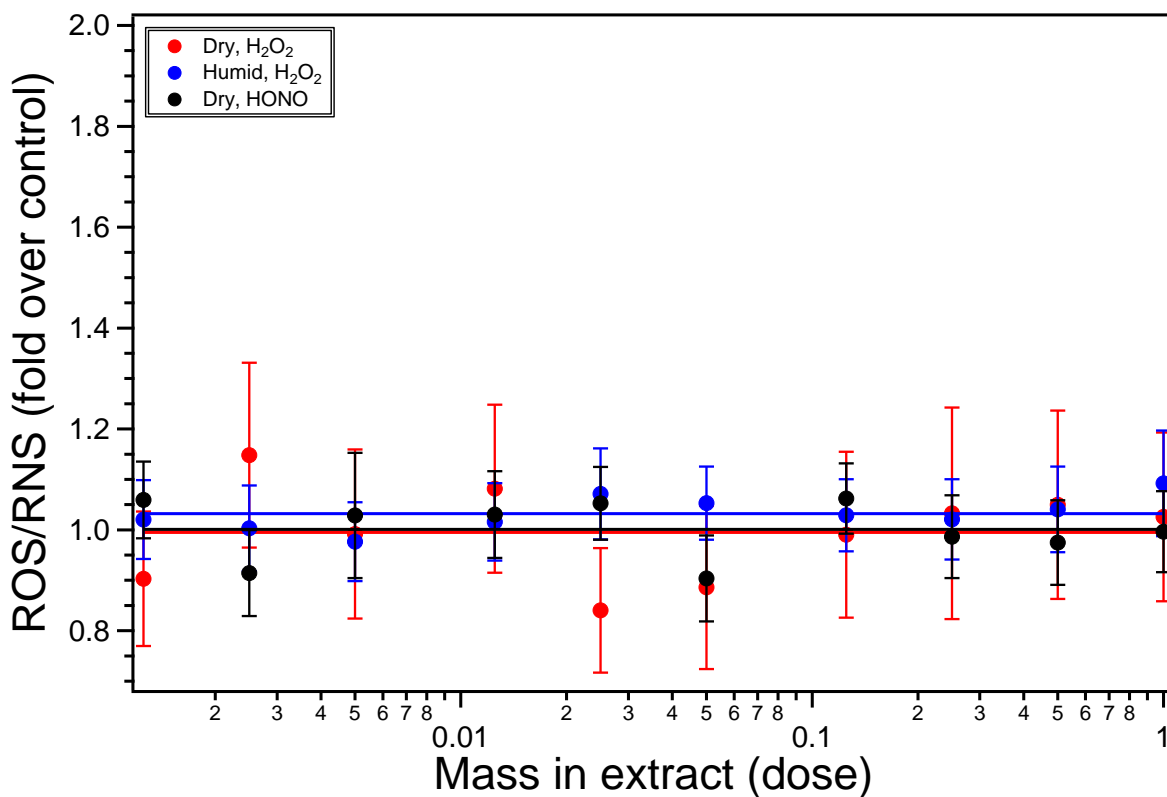
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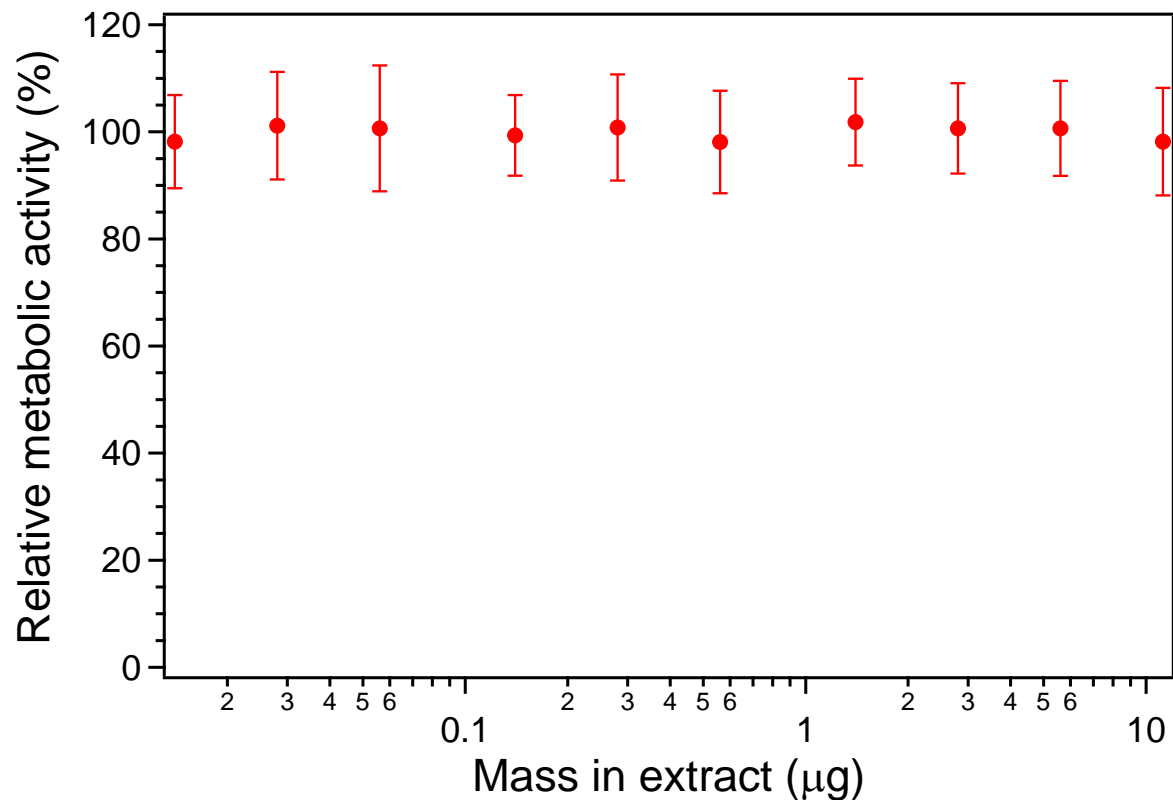
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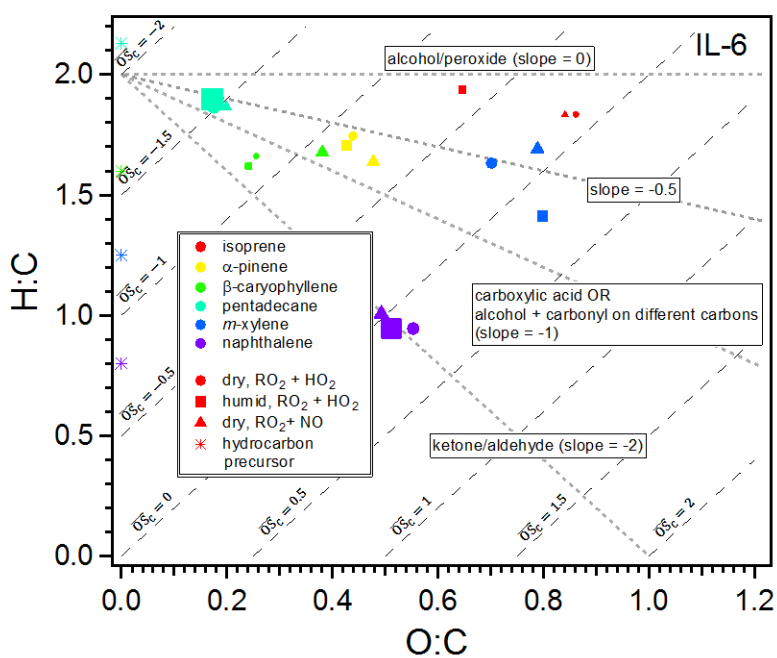
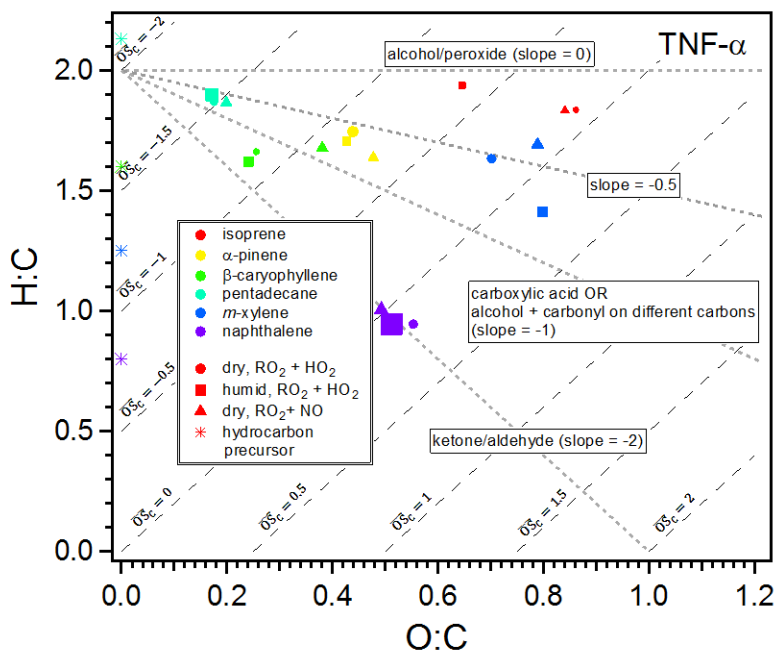
Keywords: reactive oxygen/nitrogen species, inflammatory cytokines, particulate matter, secondary organic aerosol



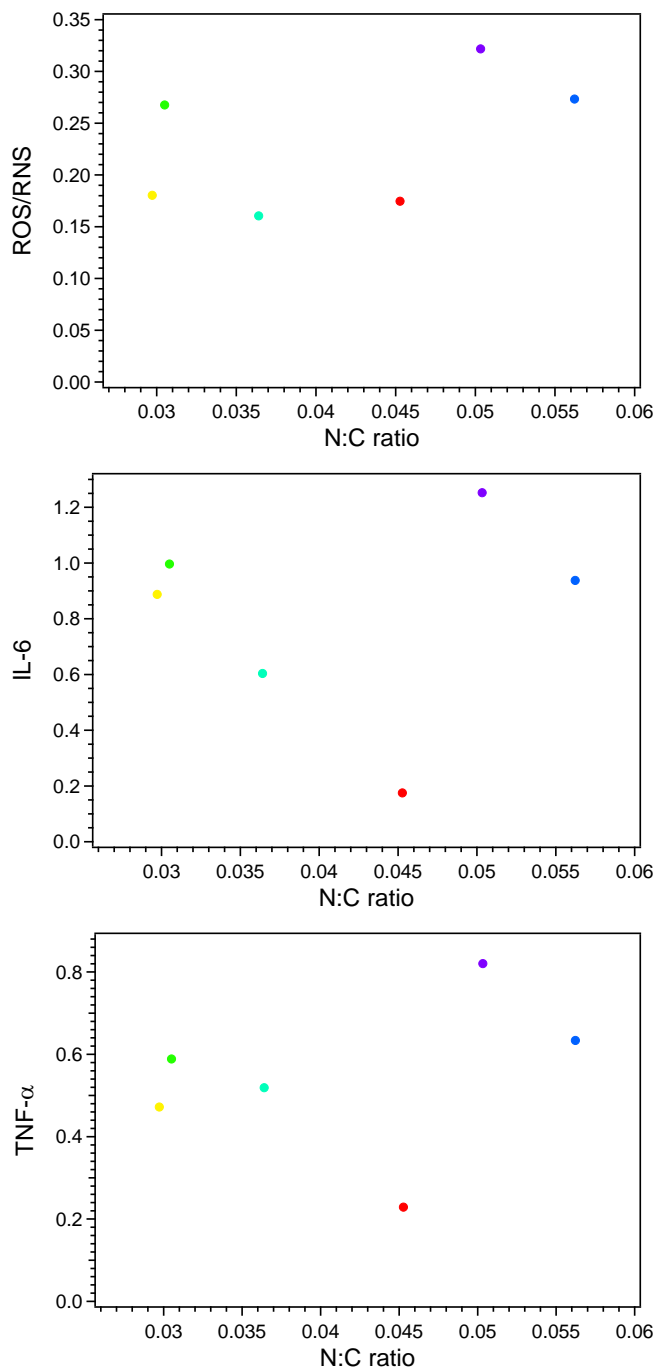
**Figure S1.** ROS/RNS produced as a result of exposure to background filters (OH precursor and seed only). ROS/RNS is expressed as a fold increase over probe-treated control cells incubated with stimulant-free media. Data shown are means  $\pm$  standard error of triplicate exposure experiments.



**Figure S2.** Post filter exposure cellular metabolic activity as measured by the MTT assay (filter: naphthalene SOA formed under dry, RO<sub>2</sub> + NO dominant conditions). Cellular metabolic activity is normalized to cells exposed to stimulant-free media. Data shown are means  $\pm$  standard error of triplicate exposure experiments. All filter exposures produced similar results.

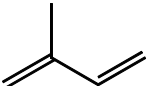
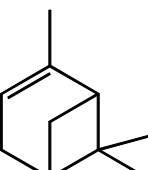
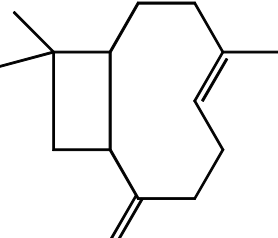

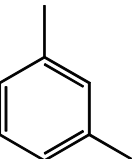
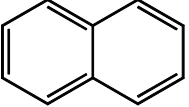


**Figure S3.** van Krevelen plot for various SOA systems. Data points are colored by SOA system (red: isoprene, yellow:  $\alpha$ -pinene, green:  $\beta$ -caryophyllene, light blue: pentadecane, blue: *m*-xylene, and purple: naphthalene), shaped according to formation conditions (circle: dry, RO<sub>2</sub> + HO<sub>2</sub>; square: humid, RO<sub>2</sub> + HO<sub>2</sub>; and triangle: dry, RO<sub>2</sub> + NO), and sized by TNF- $\alpha$  and IL-6 levels. SOA precursors are shown as stars, colored by SOA system.



**Figure S4.** ROS/RNS, TNF- $\alpha$ , and IL-6 (represented as AUC per  $\mu\text{g}$ ) for various SOA systems spanning a wide range of N:C ratios. Data points are colored by SOA system (red: isoprene, yellow:  $\alpha$ -pinene, green:  $\beta$ -caryophyllene, light blue: pentadecane, blue: *m*-xylene, and purple: naphthalene).

**Table S1.** SOA precursor structures.

Compound	Structure
Isoprene	 The structure of Isoprene is shown as a skeletal formula of a branched diene, specifically 2-methyl-1,3-butadiene.
$\alpha$ -pinene	 The structure of $\alpha$ -pinene is shown as a bicyclic diene, specifically 1,2,3,4,4a,8-hexahydronaphthalene.
$\beta$ -caryophyllene	 The structure of $\beta$ -caryophyllene is shown as a complex bicyclic diene with a large ring system and several methyl substituents.
Pentadecane	 The structure of Pentadecane is shown as a zigzag line representing a long, straight-chain alkane with 15 carbon atoms.
m-xylene	 The structure of m-xylene is shown as a benzene ring with two methyl groups attached at the meta position.
Naphthalene	 The structure of Naphthalene is shown as two fused benzene rings sharing a common side.