

Supplemental Material

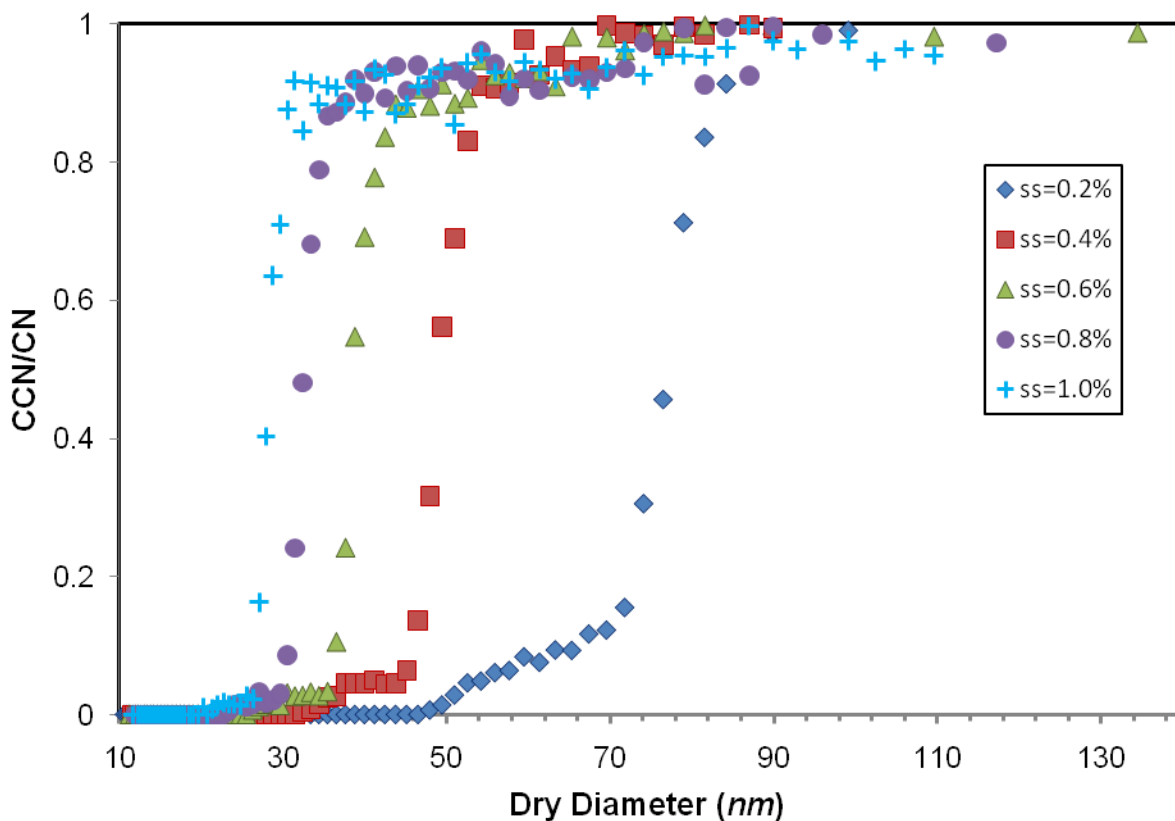


Figure S-1. Calibration curve of ammonium sulfate particles at $ss=0.2\%$, 0.4% , 0.6% , 0.8% and 1.0% . Critical diameter (d_{p50}) for $ss=0.2\%$, 0.4% , 0.6% , 0.8% and 1.0% is 74.48 ± 2.15 , 48.76 ± 0.87 , 37.60 ± 0.85 , 32.51 ± 0.73 and 28.59 ± 0.52 nm. Based on κ -Köhler theory, calculated instrument ss is 0.22% , 0.43% , 0.63% , 0.78% and 0.95% correspondingly. The following $(\text{NH}_4)_2\text{SO}_4$ properties are used in Köhler theory calculations: density = 1.770 g cm^{-3} ; van't hoff factor = 2.609 , 2.504 , 2.437 , 2.387 and 2.348 at $ss=0.2\%$, 0.4% , 0.6% , 0.8% and 1.0% respectively.

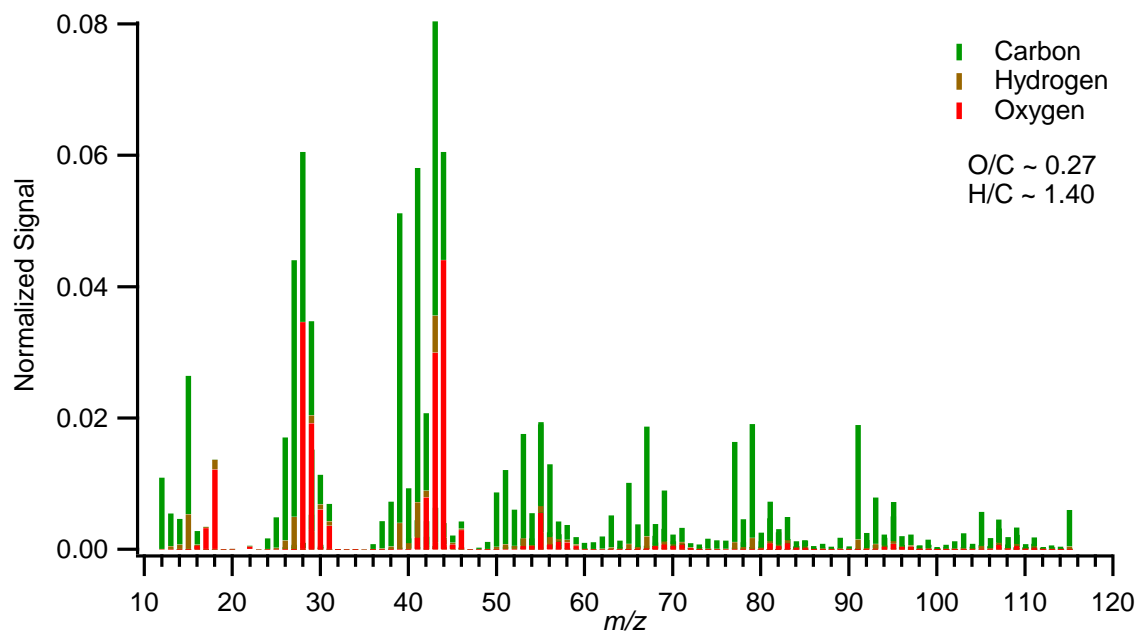


Figure S-2. High resolution mass spectra of SOA formed from ozonolysis of 5 ppb β -caryophyllene.

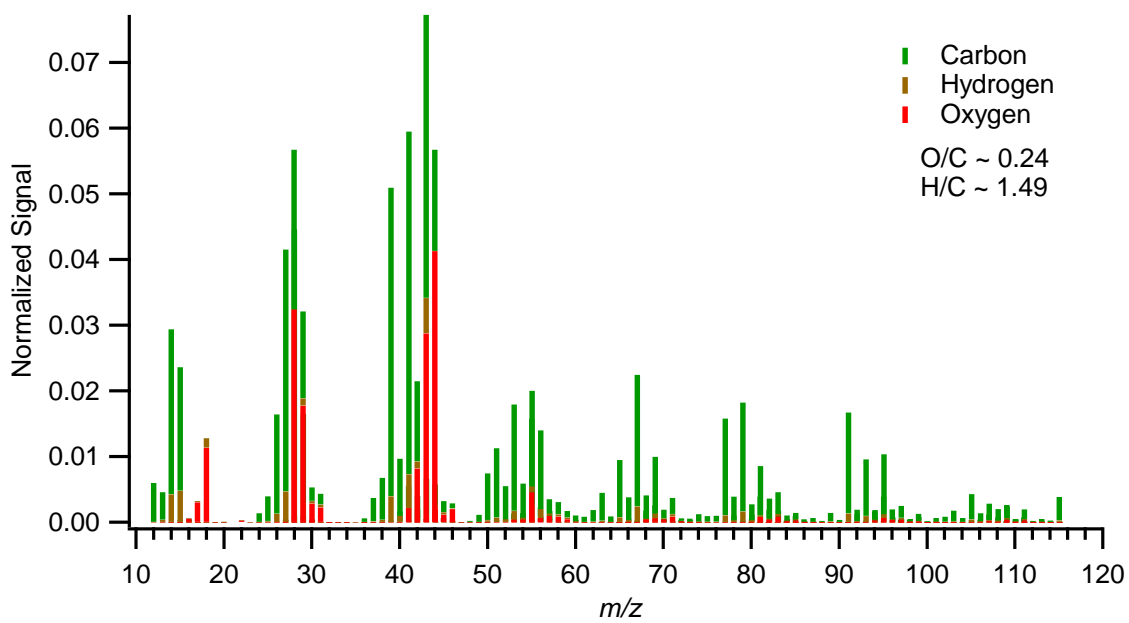


Figure S-3. Mass spectra of SOA formed from ozonolysis of 20 ppb β -caryophyllene with the presence of high concentration of OH scavenger.

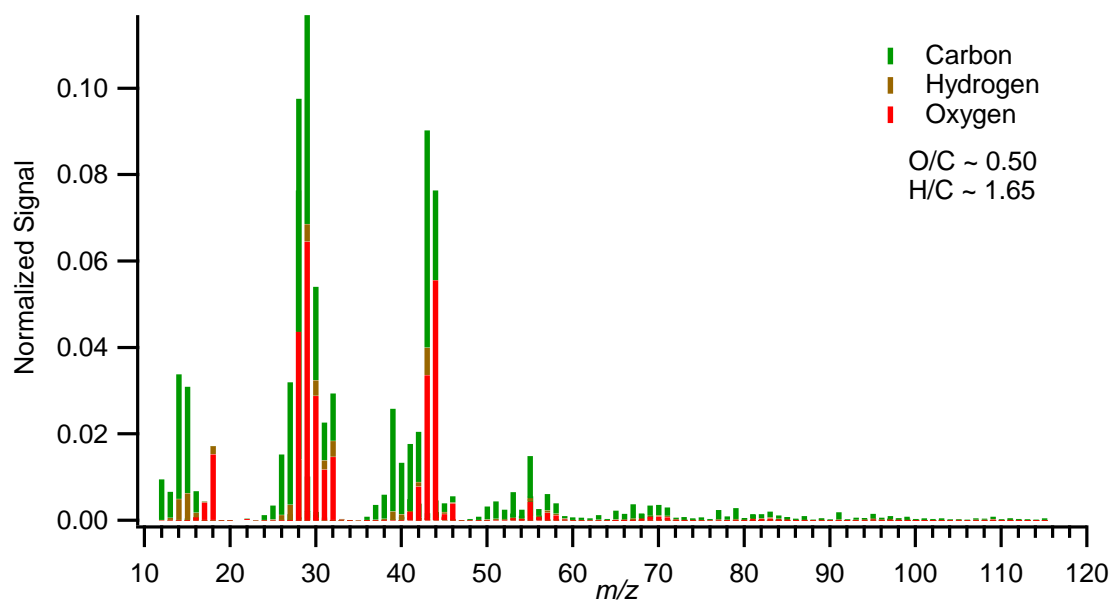


Figure S-4. Mass spectra of SOA formed from ozonolysis of 0.25 ppm isoprene without the presence of OH scavenger.

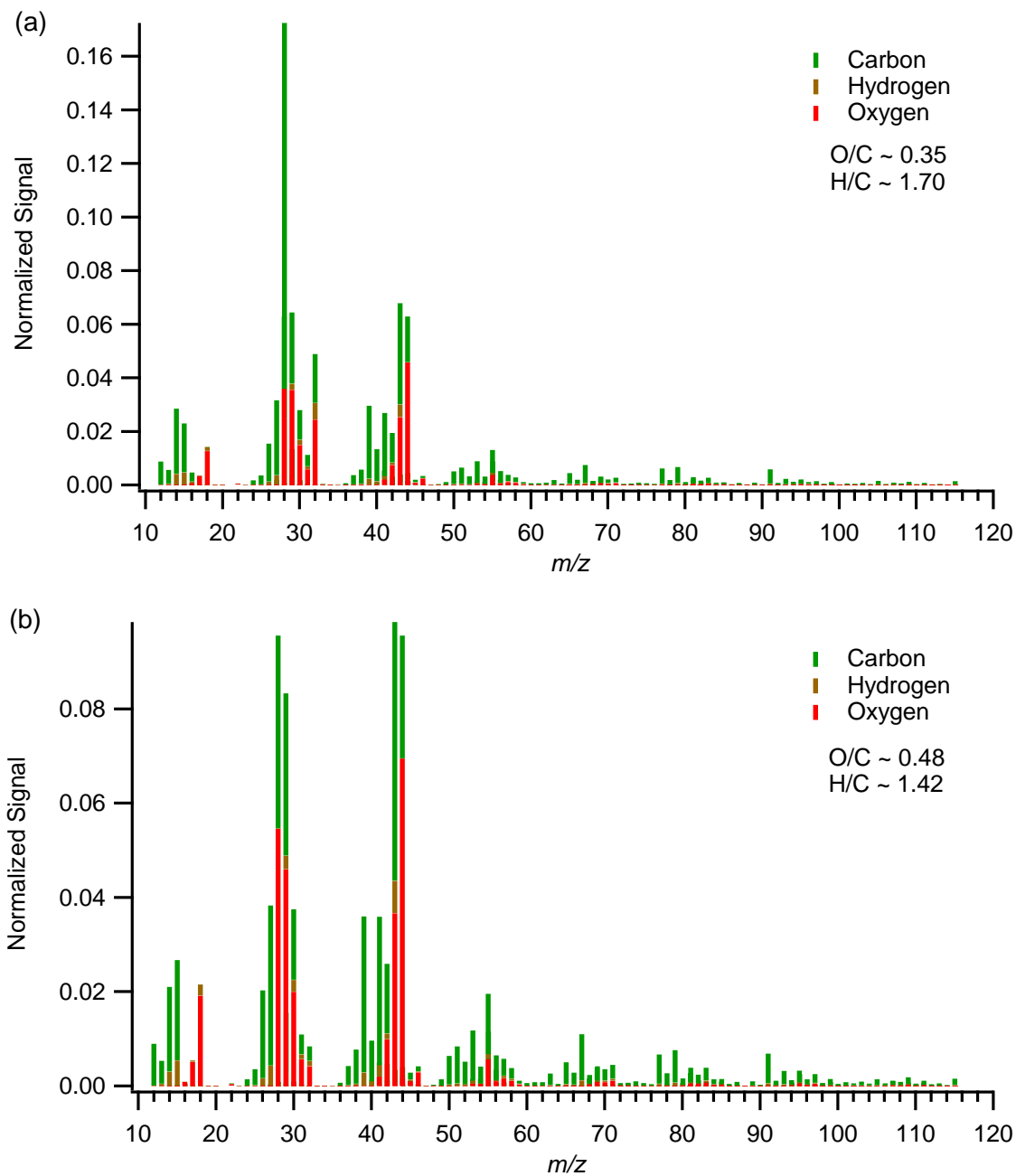


Figure S-5. Mass spectra of SOA formed from reactions between (a) O_3 and 5 ppb β -caryophyllene/ 0.25 ppm isoprene, (b) O_3 and 5 ppb β -caryophyllene/ 0.7 ppm isoprene.