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Supporting Information for

Impact of biomass burning on soil microorganisms and plant metabolites: a view from molecular distributions of atmospheric hydroxy fatty acids over Mt. Tai

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Introduction

All the tables and figures have been cited in the main manuscript. For more description, please check the research article.

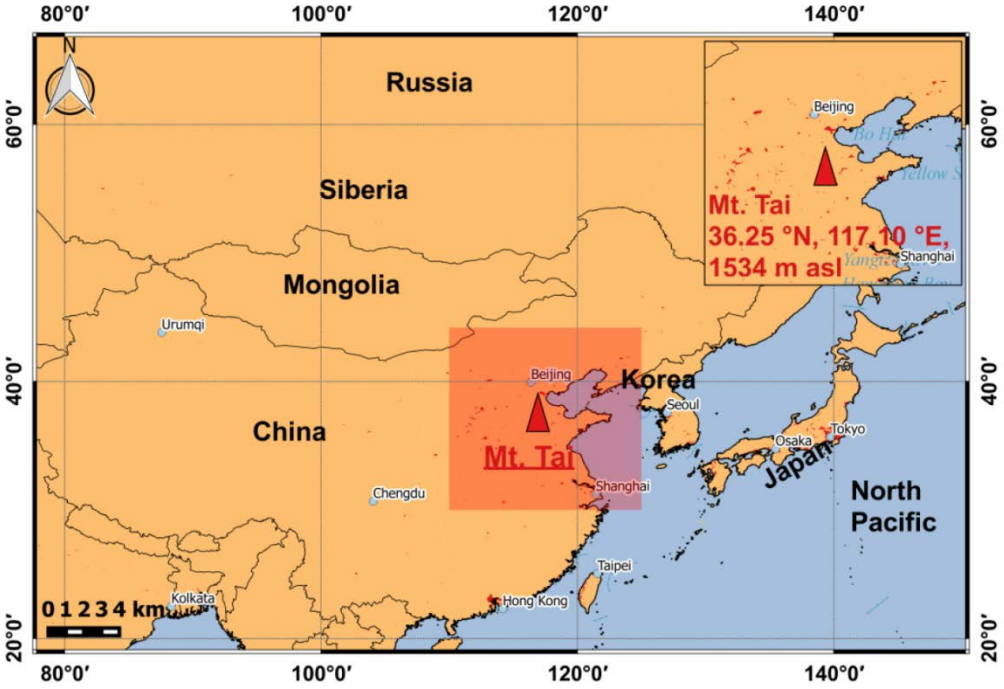

Figure S1. Map showing the geographical location of Mt. Tai.

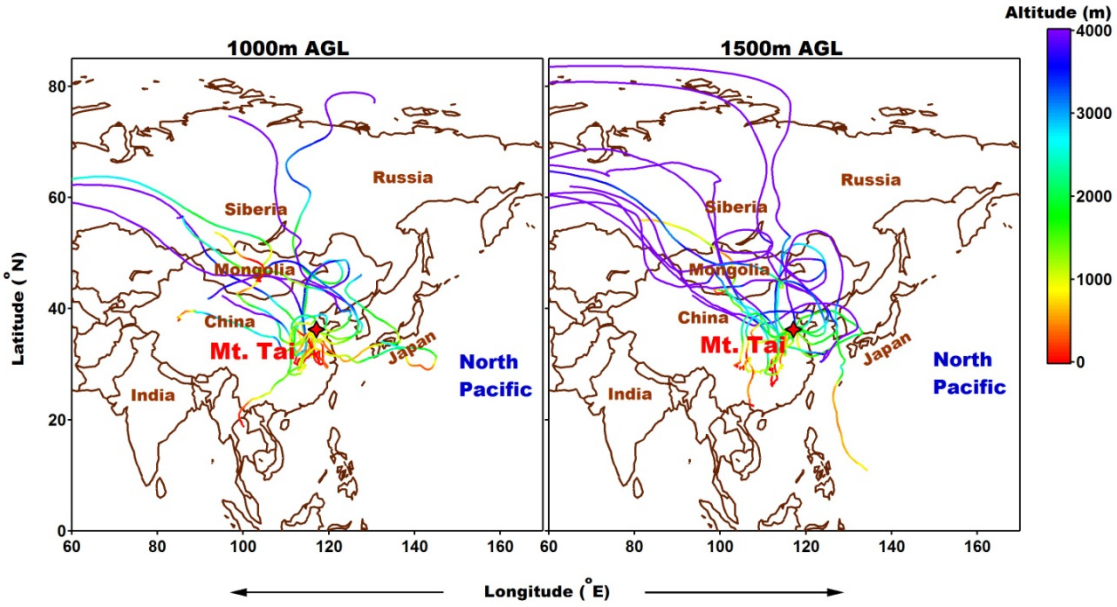

Figure S2. Air mass back-trajectories from 6 to 28 June 2006 at arrival heights of 1000 and 1500 m above ground level are calculated by the HYSPLIT Model.

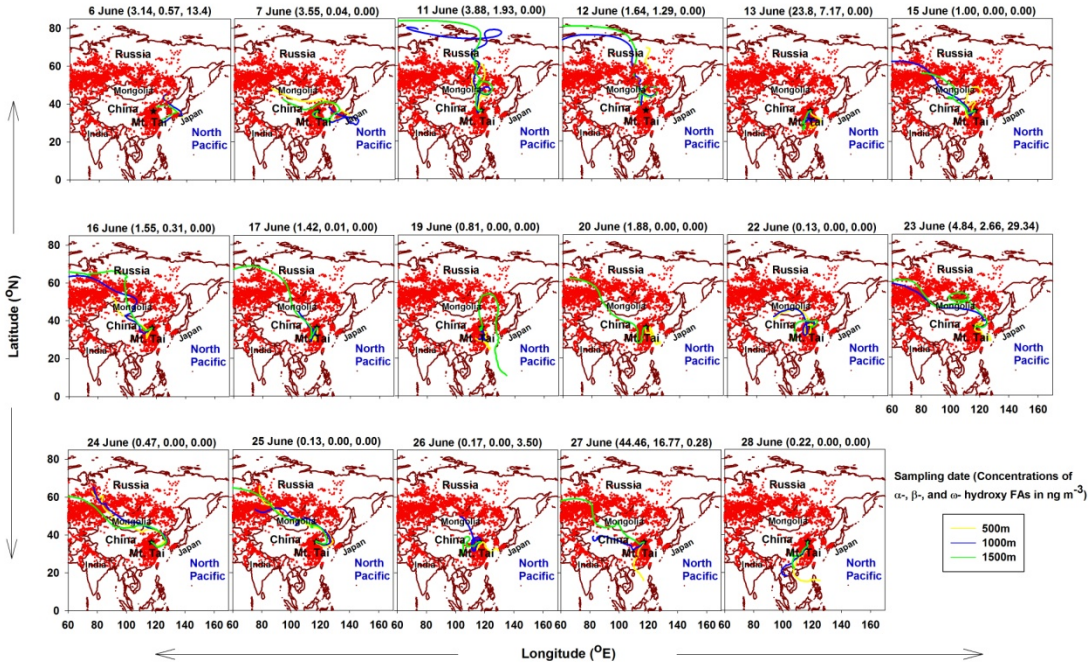

Figure S3. Daily variations in air masses starting (HYSPLIT Model) from 6 to 28 June 2006 at arrival heights of 500, 1000 and 1500 m above ground level combined with daily fire spots (NASA EOSDIS website) and temporal concentrations of each hydroxy fatty acids (FAs). Sampling dates along with concentrations of α-, β- and ω-hydroxy FAs (in ng m^{-3}) in parenthesis are shown above the each panel and different colors indicate the different arrival heights of the air mass back-trajectories.

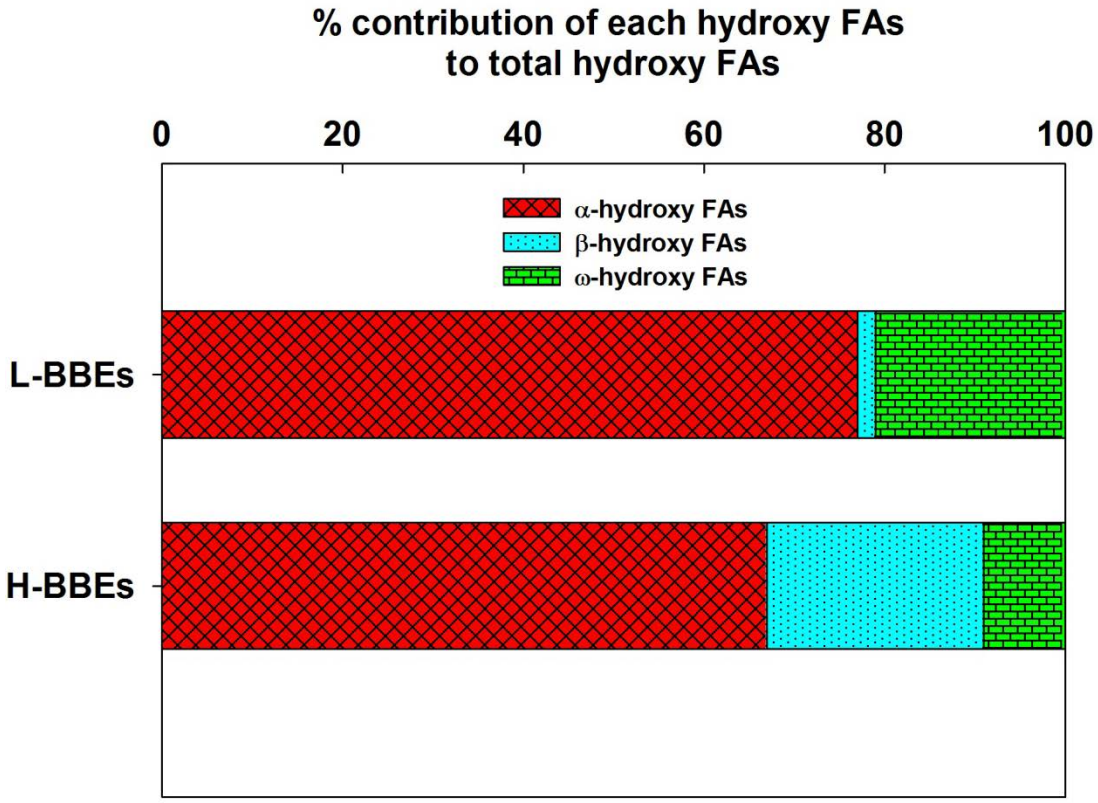

Figure S4. Relative contributions (in %) of α-, β- and ω-hydroxy FAs in total hydroxy FAs measured in ambient aerosols collected over Mt. Tai during high (H-BBEs: 6-14 June and 27 June) and low (L-BBEs: 15-26 June and 28 June) biomass burning events in the summer of 2006.

Parameter	H-BBEs (ng m^{-3}) Min.-Max. (Mean±SE)	L-BBEs (ng m^{-3}) Min.-Max. (Mean±SE)	*t* score, df, P-value
Σα-hydroxy FAs	2-44 (11±6.1)	0.1-4.8 (1.3±0.4)	2.4, 18, < 0.05
Σβ-hydroxy FAs	0.04-16.7 (4.0±2.3)	0.01-2.7 (1.0±0.8)	0.8, 8, > 0.05
Σω-hydroxy FAs	13.3	0.3-29.3 (15.9±9.2)	not applicable
HMW/LMW- α-hydroxy FAs	0.2-2.5 (0.98±0.28)	0.24-1.14 (0.64±0.08)	1.5, 17, > 0.05
HMW/LMW- β-hydroxy FAs	0.25-0.76 (0.46±0.11)	1.15	not applicable
HMW/LMW- ω-hydroxy FAs	1.59	0.79-1.53	not applicable
*Levoglucosan	918-3432 (1580±332)	0.4-111 (55±11)	6.4, 18, < 0.05
*Trehalose	0.6-93.1 (37.9±13.3)	0.4-38.6 (12.6±3.9)	2.3, 18, < 0.05
*Mannitol	45-179 (112±22)	3-95 (30±8)	4.3, 18, < 0.05

Table S1. Unpaired two-tailed *t* test results for the measured hydroxy fatty acids along with other biomass burning tracer compounds [*Fu et al.*, 2008] in TSP samples collected over Mt. Tai during high (H-BBEs; 6-14 June and 27 June, 2006) and low biomass burning events (L-BBEs; 15-26 June and 28 June, 2006) occurred in the NCP.

*Data obtained from [*Fu et al.*, 2008].