Supplemental text for article

A pilot study to quantify volatile organic compounds and their sources inside and outside homes in urban India in summer and winter during normal daily activities

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Quality assurance/quality control and laboratory analyses of samples

To examine the repeatability of our measurements, we collected duplicate samples indoors and outdoors for Tenax and DNPH cartridges during five sampling events in each season. The mean of duplicate pairs was calculated and used in analysis. Prior to calculating the mean, non-detects were set to the limit of quantitation (LOQ, 2 μgm^{-3}); for compounds that were detected but at concentrations below the LOQ (i.e., 0< concentrations <2 μgm^{-3}), this concentration was used in the calculation of the mean, as others have done previously [1]. After making these adjustments for duplicate samples, all values below the LOQ were replaced with ½ the LOQ, or 1 μgm^{-3}.

To evaluate contamination due to sample transport and sampling procedures we collected travel and loading blanks in both seasons (for each travel and loading blanks, May: n=3 Tenax and n=4 DNPH; January: n=3 each Tenax and DNPH). Travel blanks were transported to the homes alongside the other cartridges but were never uncapped and loading blanks were prepared using the same procedures as sample cartridges but without pulling any air through them. Laboratory methods of sample analysis have been described in detail previously [2].

Of the ~700 compounds assessed in May and the ~950 detected in January, the vast majority were never detected in the blank samples. For the remainder (n=26 in May, n=119 in January), only a small subset (n=8 in May, n=21 in January) was detected at least once above the limit of quantitation (LOQ) of 2 μgm^{-3}. Of these, most compounds were only detected a few times in blank samples.

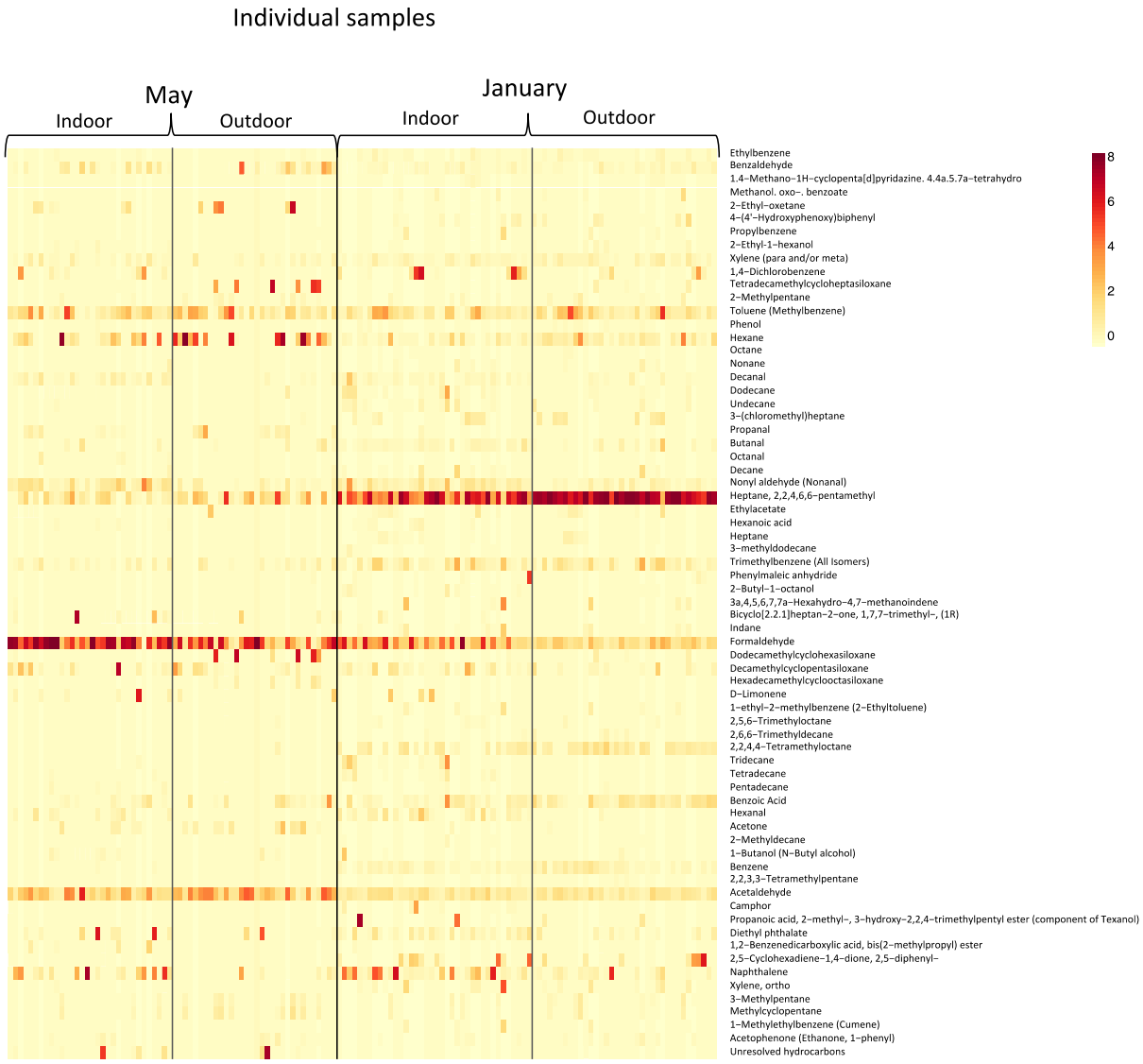

Figure S1. Concentrations of compounds detected five times or more (n=69) across all samples (n=138), with concentrations scaled by centering and standardizing each column separately to column Z-scores. Samples have been grouped by season (May, January) and sampling location (indoor, outdoor) to best illustrate trends.

Table S1. Summary of all compounds detected 5 times or more above the LOQ of 2 μgm-3 in May or in January; ordered by frequency of detection indoors in January. Where a minimum or median value of 1 is presented, this is because the minimum or median value was below the LOQ.

References

1. Udesky, J.O.; Dodson, R.E.; Perovich, L.J.; Rudel, R.A. Wrangling environmental exposure data: guidance for getting the best information from your laboratory measurements. *Environmental health : a global access science source* **2019**, *18*, 99-99, doi:10.1186/s12940-019-0537-8.
2. Norris, C.; Fang, L.; Barkjohn, K.K.; Carlson, D.; Zhang, Y.; Mo, J.; Li, Z.; Zhang, J.; Cui, X.; Schauer, J.J.; et al. Sources of volatile organic compounds in suburban homes in Shanghai, China, and the impact of air filtration on compound concentrations. *Chemosphere* **2019**, *231*, 256-268, doi:https://doi.org/10.1016/j.chemosphere.2019.05.059.