

Supporting information

First GC/MS identification of aqueous ammonia: utilization of ethenesulfonyl fluoride as a selective and rapid derivatization reagent of ammonia in aqueous media

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Table S1 Effects of pH on ammonia derivatization.

| pH | Buffer solutions | Mean \pm SD | Precision (% RSD) ^a |
|------|---|-----------------|--------------------------------|
| 6.0 | 0.1 mol/L C ₈ H ₅ KO ₄ /NaOH | 2.64 \pm 0.33 | 12.5 |
| 7.0 | 0.1 mol/L KH ₂ PO ₄ /NaOH | 6.62 \pm 0.77 | 11.6 |
| 8.0 | 0.1 mol/L H ₃ BO ₃ /KCl/NaOH | 0.65 \pm 0.01 | 0.4 |
| 9.0 | 0.1 mol/L H ₃ BO ₃ /KCl/NaOH | 1.43 \pm 0.03 | 2.4 |
| 10.0 | 0.1 mol/L H ₃ BO ₃ /KCl/NaOH | 1.43 \pm 0.12 | 8.7 |
| 11.0 | 0.05 mol/L Na ₂ HPO ₄ /NaOH | 5.45 \pm 0.57 | 10.5 |
| 12.0 | 0.05 mol/L Na ₂ HPO ₄ /NaOH | 5.12 \pm 0.47 | 9.2 |
| 13.0 | 0.2 mol/L KCl/NaOH | 4.66 \pm 0.39 | 8.5 |

^a Precision (% relative standard deviation) was defined as (standard deviation/mean peak area ratio to the IS) \times 100.

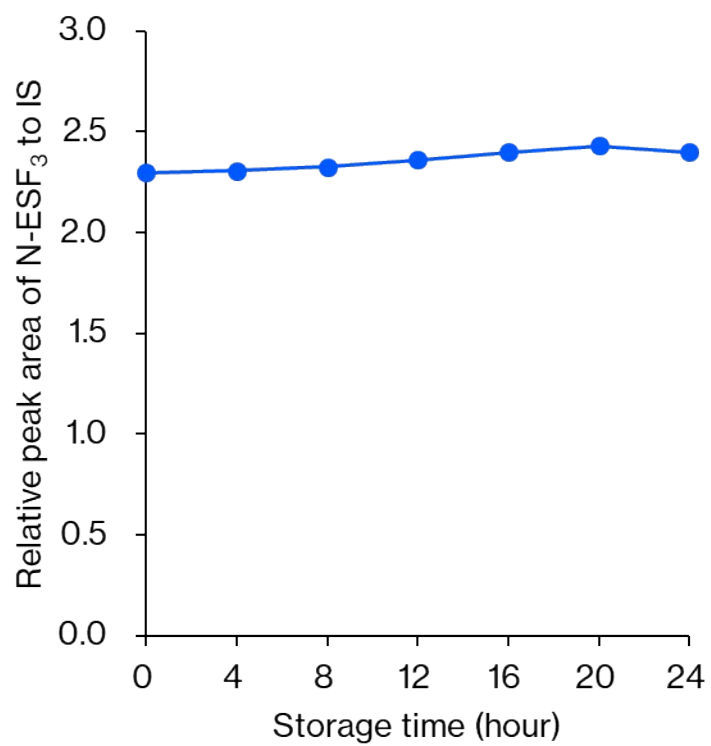


Fig. S1. Effect of storage time of the ethyl acetate extract of the derivatized reaction solution on the GC/MS analysis. The extract was stored at room temperature before the analysis.

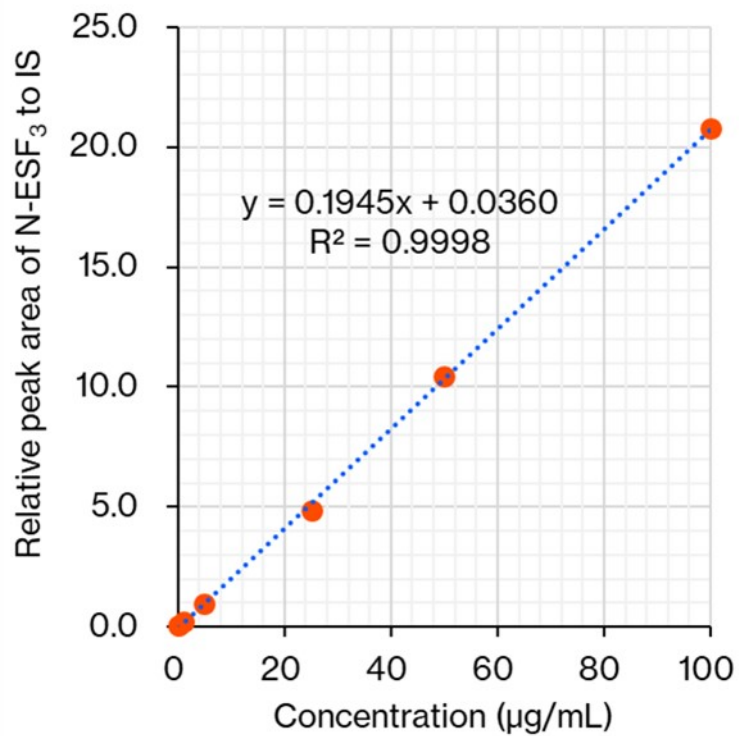


Fig. S2. Calibration curve showing the peak areas for N-ESF₃ generated from ammonia concentrations ranging from 0.10 to 100.0 µg/mL.