Adsorption of fluorinated anesthetics within the pores of a molecular crystal

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Supporting Information

Materials

Enflurane, isoflurane, sevoflurane, methoxyflurane, and halothane were obtained from SynQuest Labs and used without further purification. Ultrahigh purity nitrogen (99.999%) was purchased from Matheson Tri-Gas.

Thermogravimetric Analysis of Anesthetics’ Vapor Adsorption

The setup for studying the adsorption of anesthetic vapors is shown in Figure S1. Colorless rod crystals of compound 6 were first heated on a thermobalance of the TA Instruments TGA 2050 thermogravimetric analyzer under N\textsubscript{2} flow to 120 °C at 2 °C/min. This temperature was held for 60 min to ensure complete activation of the material. The temperature was reduced to 25 °C at 5 °C/min and held at 25 °C. The N\textsubscript{2} flow was then switched (red line) to a second N\textsubscript{2} gas stream that was saturated with the vapor of adsorbate at 25 °C (saturation was achieved by passing the N\textsubscript{2} gas stream through a bubbler containing the liquid adsorbate). After the weight reached a plateau, the adsorbate vapor/N\textsubscript{2} flow was switched back to pure N\textsubscript{2} flow at the same temperature (25 °C).
Figure S1. A schematic diagram of the apparatus for TGA of anesthetic vapor adsorption.

Adsorption Results

Figure S2. TGA trace for adsorption of enflurane (1) within the pores of 6. Red trace shows the flow of anesthetic-enriched nitrogen, black trace the flow of pure nitrogen.
Figure S3. TGA trace for adsorption of isoflurane (2) within the pores of 6. Red trace shows the flow of anesthetic-enriched nitrogen, black trace the flow of pure nitrogen.

Figure S4. TGA trace for adsorption of sevoflurane (3) within the pores of 6. Red trace shows the flow of anesthetic-enriched nitrogen, black trace the flow of pure nitrogen.
Figure S5. TGA trace for adsorption of methoxyflurane (4) within the pores of 6. Red trace shows the flow of anesthetic-enriched nitrogen, black trace the flow of pure nitrogen.

Figure S6. TGA trace for adsorption of halothane (5) within the pores of 6. Red trace shows the flow of anesthetic-enriched nitrogen, black trace the flow of pure nitrogen.
Reference