

## Anesthetic-dependent changes in the chain-melting phase transition of DPPG liposomes studied using near-infrared spectroscopy supported by PCA.

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The effect of inhalation anesthetics (enflurane, isoflurane, sevoflurane or halothane) on the lipid chain-melting phase transition of negatively charged phospholipid membranes was studied using near-infrared (NIR) spectroscopy supported by Principal Component Analysis (PCA). NIR spectra of anesthetics-mixed dipalmitoylphosphatidylglycerol (DPPG) membranes were recorded in a range of the first overtone of the symmetric and antisymmetric stretching vibrations of CH<sub>2</sub> groups of lipid aliphatic chains as a function of increasing temperature. Anesthetic-dependent changes in the *trans* to *gauche* conformers ratio of CH<sub>2</sub> groups in the hydrocarbon lipid chains were characterized in detail and compared with the zwitterionic lipid membranes, which were built of dipalmitoylphosphatidylcholine (DPPC) molecules.

### Słowa kluczowe

Charged lipid membranes, *trans* to *gauche* isomerization, Near-infrared spectroscopy (NIR), principal component analysis (PCA), mechanism of anesthesia

### Adres publiczny

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