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Pyrvinium Pamoate's Effect on Models Lipid Membranes.

Pyrvinium is a fluorescent red cyanine dye, whose salts - pyrvinium chloride salt and pyrvinium pamoate (PP) - have been extensively researched in a wide range of conditions. It has been approved by the FDA as a treatment for pinworm infestations. The substance's anti-cancer potential has garnered increasing attention in recent years and first clinical trial on the use of PP to treat pancreatic cancer has recently been launched.

We present the first results on the effect of PP on a model membrane using neutron scattering. As a model system, simple 1-palmitoyl-2-oleoyl-glycero-3-phosphocholine (POPC) lipid bilayer was used with varying concentration of cholesterol, and we performed small angle neutron scattering (SANS) and neutron spin echo (NSE) experiments. Our results indicate that while PP does not significantly change the structure of a lipid bilayer, it changes the mechanical properties of a membrane, and the effect varies with PP concentration. These results provide molecular level insights of the interaction of PP with lipid membranes.

Topical Area

Biology and life sciences

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