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Molecular Interactions Mediated by Nucleo-base Functionalized Lipids

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Abstract

Nucleo-base functionalized lipids belong to the recently reported group of bio-surfactants. This kind of lipids bear the same common structural features as conventional surfactants, but the presence of nucleic acid constituents leads new features such as structural complementarity and biochemical specificity. The present review is a broad survey of the key results achieved in the issue of molecular interactions mediated by nucleo-base functionalized lipids. In particular, special emphasis is focused on the role played by base-base molecular interactions into the general nature of self-assembly of amphiphilic materials. As is described, nucleo-base functionalized lipids are of highly different nature giving great challenges in the understanding and analyzing the subtle balance between different interactions. Recent works have emphasized the role of charge and molecular moiety of nucleolipids, as well as hydrophobic interactions.

Keywords: Molecular interactions, Nucleolipids, Self-assembly