Organometallics and Quaternary Ammonium Salts Affect Calcium Ion Desorption from Lecithin Liposome Membranes

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The objective of the present work was to compare the effects of groups of tin and lead organometallic compounds and their mixtures with amphiphilic quaternary ammonium salts (QAS) on the process of calcium ion desorption from lecithin liposome membranes, as dependent on the properties of the hydrophilic and hydrophobic parts of QAS. In the investigations the method of radioactive labels was applied. Synergism and antagonism in the action of both groups of compounds were found. The effectiveness of the cooperation depended more on chain length of QAS compounds than on the size and polarity of their hydrophobic parts. The most effective of all compounds studied was a the mixture of benzyldimethylammonium chloride in a mixture with tripropyltin. Since the rate of calcium desorption proved to be a good measure of efficacy of biologically active surfactants, it seems that the conclusions reached in this paper may be useful for choosing compounds which are able to decontaminate the environment polluted with heavy metals.