

Peptides conformational changes of the erythrocyte membrane induced by organometallic tin compounds

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The paper presents the results of a study on the effect of selected organic chlorides of tin on peptide conformations of erythrocyte ghosts from pig blood. The following compounds were used: dibutyltin dichloride (DBT), tributyltin chloride (TBT), diphenyltin dichloride (DPhT) and triphenyltin chloride (TPhT). Peptide conformation changes were determined on the basis of measurements done with the ATR FTIR technique. This method made it possible to measure the percent share of a peptide with specified conformation in the whole amount of the peptides in the membranes studied. The investigation showed that all the tin organic compounds studied cause a several-percent decrease in the quantities of both the peptides with the α -helix and turn conformation, and about a 20% increase in ghost peptides with β -sheet conformation. It seems that the changes observed can cause disturbances in the function of proteins and, consequently, the activity of the membrane; and this may be one of the aspects of the toxic properties of organotins.