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Abstract book

Cytotoxic activity of Sn (IV) complexes with fragments of polycyclic acids

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The interest in organotin compounds in the last decade is associated with their high biological activity. It is known that organotin derivatives of bile exhibit cytotoxic activity [1-2]. A series of Sn (IV) carboxylates with fragments of bile acids of the general formula $R_3SnOOCL$ (where R = Me, Ph; LCOOH is cholic (L^1), deoxycholic (L^2), lithocholic acid (L^3) were synthesized. The cytotoxic activity of the compounds was studied in MTT-test and IC_{50} values in MCF-7, A549, SW480 cancer cell lines and WI38 (fibroblasts from lung tissue) were determined. It was shown that high cytotoxicity is characteristic of all studied Sn complexes, however, the triphenyltin derivatives at the MCF7 and SW480 cell lines were the most active one in the MTT-test (IC_{50} = 0.18-0.25 μM). The analysis of apoptosis with annexin V protein and cell cycle were performed using flow cytometry (Fig. 1).

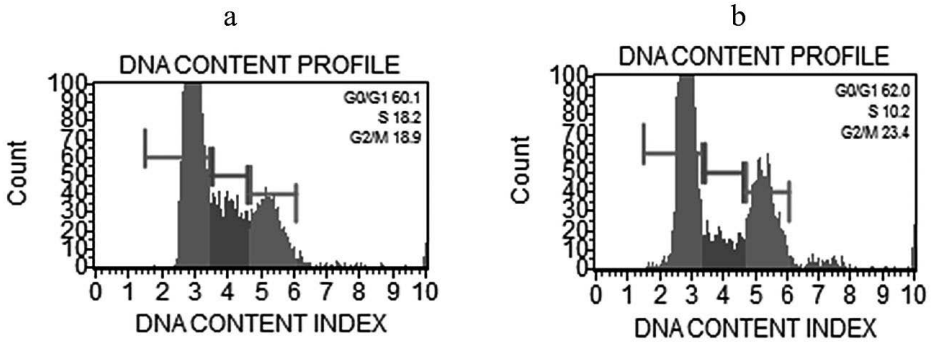

Fig. 1. *Cell cycle analysis in MCF7 breast cancer after treatment with Ph_3SnL^2 by flow cytometry. Cell were treated with 0.5 μM of compound for 24 h. (a - control, b - Ph_3SnL^2).*

It was demonstrated that blockade of the cell cycle occurs in the presence of $Ph_3SnOOCL$ in the G2/M phase (DNA replication / mitosis).

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