

ANTITUMOR ACTIVITY OF COPPER(II) COMPLEXES WITH SOME S-ISOALKYL DERIVATIVES OF THIOSALICYLIC ACID

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The new free copper(II)-complexes with some S-isoalkyl derivatives of thiosalicylic acid (isoalkyl = isopropyl-(C1), isobutyl-(C2) and isoamyl-(C3)) were obtained by direct reaction of $\text{Cu}(\text{NO}_3)_2$ and corresponding derivatives of thiosalicylic acid (molar ratio 1:2) in water solution with satisfactory yields.¹

All the tested copper(II) complexes showed dose dependent antitumor activity against human, SW480 and HCT116, and murine, CT26, colon carcinoma cell lines determined by MTT assay. Cytotoxic activity against tumor cell lines was lower in comparison with cisplatin. However all copper(II) complexes showed lower cytotoxic activity against fibroblasts than cisplatin. Copper(II)-complex with

S-isoamyl derivatives of thiosalicylic acid (C3) induced apoptosis of HCT 116 cells determined by flow cytometric analysis of Annexin V, propidium iodide stained treated cells. Copper(II)-complex with S-isopropyl derivatives of thiosalicylic acid (C1) showed antiproliferative activity: it reduced percentage of Ki67 expressing HCT116 cells compared to untreated cells. The treatment with all tested copper(II) complexes increased percentage of HCT116 and CT26 cells in G2 phase of cell cycle. Copper(II) complexes show proapoptotic, antiproliferative and selective antitumor effects.

References

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