



Nanocomplexes of Ru(II) and Cu(II) with L-Dopa and Theophylline and their Anticancer Activity

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Abstract:

Nanotechnology is a flourishing area with several interdisciplinary fields, such as medicine, electronics, and biomaterials. The long-term goal of nanomedicine is to revolutionize the health care system by fighting deadly diseases in more efficient ways. The growing interest to use inorganic nanoparticles in medicine is due to the unique size and shape-dependent optoelectronic properties. Cancer nanomedicine is currently under intense development for applications in cancer imaging, molecular diagnosis and target therapy. The complexation of organic compounds with selected metal ions has a wide variety of applications in medicinal chemistry, surface chemistry, and analytical chemistry. Herein, we report the synthesis and characterization of two nanocomplexes of Ru(II) and Cu(II) with L-Dopa and Theophylline and their anticancer activity against MCF-7, A-549, and HT-29 cell lines. Our results suggest that the nanocomplexes can be introduced as an effective metal-based anticancer drug and further experiments in relevance to potential anticancer activity of this complex in vivo can be considered.

Keywords: Nanomedicine, Metal complexes, Anticancer activity