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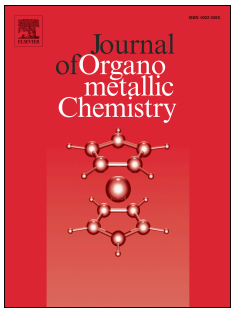

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Highly cytotoxic trithiolato-bridged dinuclear Rh(III) and Ir(III) complexes

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ABSTRACT

Water soluble trithiolato-bridged cationic complexes of the type $[(\eta^5\text{-}C_5Me_5)_2M_2(\mu\text{-}SC_6H_4\text{-}p\text{-}X)_3]^+$ (M = Rh, X = H, **1**; CH_3, **3**; OCH_3, **5**; Pr^i, **7**; Bu^t, **9**; M = Ir, X = H, **2**; CH_3, **4**; OCH_3, **6**; Pr^i, **8**; Bu^t, **10**) were synthesized and isolated as their chloride salts by reacting pentamethylcyclopentadienyl rhodium and iridium dimers $[(\eta^5\text{-}C_5Me_5)_2M_2(\mu\text{-}Cl)_2Cl_2]$ in ethanol with the corresponding thiophenol. All complexes were isolated in good yields and were fully characterized including single-crystal X-ray structure analysis on representative complexes. The complexes were found to have IC_{50} values in the nanomolar range in human ovarian A2780 cancer cells, but did not display selectivity with respect to noncancerous human HEK293 embryonic kidney cells.

Keywords: Half-sandwich complexes; Dinuclear complexes; Thiolato-bridging ligands; Lipophilicity; Anticancer activity.

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