RUTHENIUM PYRAZOLE COMPLEX: POTENT ANTI-CANCER AGENT WITH ANTIANGIOGENIC PROPERTIES

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Ruthenium-based compounds are recently receiving considerable interest as novel anti-cancer drug candidates due to the versatile oxidation states and diverse coordination chemistry of ruthenium. $[Ru(C_3N_2H_4)_4Cl_2]Cl$, a ruthenium-based compound with pyrazole as ligand was newly synthesized. It was shown to be cytotoxic toward a series of carcinoma cell lines (HeLa, HepG2, Hep3B, QGY-TR50, MCF-7 and HCT-8) with IC_{50} at micromolar concentration based on MTT assay. Its mode of anti-cancer action was further investigated and its anti-angiogenic ability was tested through *in vitro* studies of our ruthenium-based compound on endothelial cell functions, which is necessary for angiogenesis to develop. Pretreatment of human umbilical vascular endothelial cells (HUVEC) with our ruthenium-based compound can inhibit *in vitro* capillary-like tube formation in a three-dimension matrix gel in a dose-dependent manner.