Poster

Metallo-organic chemistry of inert d^6-low spin Re^I-tricarbonyl synthon

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Cancer remains one of the leading diseases with very high mortality rate in the world today [1]. Therefore, the staggering statistics prompts the critical importance of increasing the rate of new radiopharmaceutical approvals. Organometallic complexes, in biomedical field, are well-established anticancer agents, with classic cisplatin and its derivatives commonly used in chemotherapy [2]. The interest in organometallic complexes as anticancer drug candidates continues to be pivotal for many researchers to gain more knowledge on the mode of action and the progression of treatment options to accelerate the effectiveness of cancer treatment therapies. The development of potential new radiopharmaceutical drugs will not only advance our understanding but also guide the selection of optimal chemo-therapeutic and diagnostic agents in the fight against cancer [3].

Mn-triad tricarbonyl complexes seems to be mostly explored and on the rise in last decade bearing the *fac*-$[M(CO)_3]^+$ entity as potential diagnostic and therapeutic radiopharmaceuticals [4]. These often d^6-low spin organometallic models give an added advantage of the [2+1] approach which allows a bidentate and a monodentate ligands (neutral or monoanionic) to coordinate to the metal ion while the tricarbonyl brings about stability [5-6]. Herein, rhenium (I) complexes were synthesized by coordinating the inert Re^I tricarbonyl synthon to the newly synthesized Schiff base chromophores as director ligands. All the ligands were newly functionalized with aromatic groups on both ends of the azomethine bridge. The newly synthesized compounds were structurally characterized and those that were successfully isolated were refined according to their composition. All the compounds were analysed accordingly with IR, NMR, UV/Vis and XRD for structure elucidation.

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