Title: Synthesis and coordination behaviour of diphenylphosphinoferrocifen

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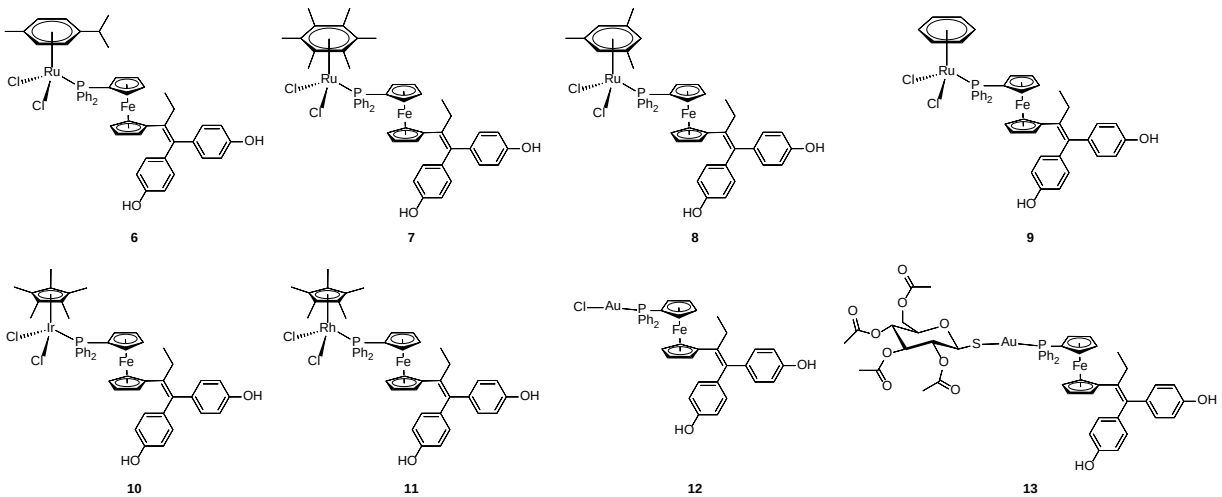
Abstract: Ferrocifen, as a ferrocene analog of a commonly used drug – tamoxifen, showed promising activity against breast cancer cells – both the hormone-dependent type and the hormone-independent one. The treatment of the latter is a struggle for today´s medicine and a new effective treatment is urgently needed. One of the goals of this thesis was to optimize the synthesis of 1-{1-[bis(4-hydroxyphenyl)methylene]propyl}-1´-(diphenylphosphino) ferrocene (compound **4**), which will provide a way of conjugating the ferrocifenol moiety to metal complexes, that are also studied as anticancer agents. The combination of those effects could provide some interesting results against cancer cells. In this thesis, 8 complexes of compound **4** as a ligand were prepared. All of these compounds were subsequently tested on cancerous (MDA-MB-231, and A549) as well as non-cancerous (MCF10A) cell lines to assess their biological activity and potential selectivity towards cancerous cells.



Key words: ferrocifen, phosphine, ruthenium complexes, gold complexes, iridium complexes, rhodium complexes, synthesis, coordination chemistry, structure elucidation