

Platinum-based complexes of bioactive 3-(5-nitrofuryl)acroleine thiosemicarbazones showing anti-Trypanosoma cruzi activity

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Eight new platinum(II) complexes with 3-(5-nitrofuryl)acroleine thiosemicarbazones showing anti-trypanosomal activity were synthesized, characterized and in vitro evaluated. Most of the complexes showed IC₅₀ values in the micromolar range against two different strains of *Trypanosoma cruzi*, causative agent of Chagas disease (American Trypanosomiasis). In addition, most of the newly developed complexes, together with the analogous platinum 5-nitrofuraldehyde containing thiosemicarbazones previously reported, resulted more active than the reference trypanocidal drug nifurtimox on the infective trypomastigote form of the parasite. Their capacity to produce free radicals that could lead to parasite death was evaluated by ESR experiments in the parasite and by respiration measurements. Compounds were tested for their DNA interaction ability. Results showed that some of the compounds could act as dual inhibitors in the parasite, through production of toxic free radicals and interaction with D