



In Vitro Trypanocidal Activity of Nitroimidazole Derivatives

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SUMMARY. Chagas' disease, caused by the protozoan parasite *Trypanosoma cruzi*, affects 9-12 million of people in Latin America and it is an important cause of heart disease. Although transmission has been reduced, an effective therapy for the infected population is lacking. New isomers nitroimidazole derivatives [4(5)-bromo-1-phenacyl-5(4)-nitroimidazoles] were developed and their antichagasic properties were studied. Five compounds (with different substituents in their aromatic ring) displayed remarkable *in vitro* activities against *T. cruzi*. The results demonstrated that 4(5)-bromo-1-(4-methoxyphenacyl)-2-methyl-5(4)-nitroimidazole, 4(5)-bromo-1-(4-chlorophenacyl)-2-methyl-5(4)-nitroimidazole, and 4(5)-bromo-1-(4-cyanophenacyl)-2-methyl-5(4)-nitroimidazole have IC₅₀ values of 3.95, 2.3, and 1.15 µg/mL, respectively, and show acceptable values of cytotoxicity, at concentrations below 5 µg/mL. Our results indicate that mixtures of isomers are a potent inhibitor of *T. cruzi* growth. The present evidence shows very promising results of new isomers, which emerge as strong candidates for further tests as anti-*T. cruzi* agents.

KEY WORDS: Chagas disease, Nitroimidazole, *Trypanosoma cruzi*.

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