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Synthesis of 1,3,4-thiadiazoles containing isochroman moiety by cross-dehydrogenative coupling method and in vitro investigation of their anti-leishmanial effects.

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Background and Aims: Parasitic diseases such as leishmaniasis have significant impacts on the world. The treatment options for leishmaniasis involve the administration of five atomicity of Antimovans such as Glucantime and Pentostam, but they have limited to use for some reasons such as side effect, high price, long treatment and more important than others, development of drug resistance to their action.for this reason it s an emergant need to access to new anti-leishmaniasis medicins. In this study, effects of new antiparasitic derivations 5-nitrofuran-1,3,4-thiadiazol agains leishmania major parasit effect on promastigotes in medium and compare to Glucantime, has been studied.
Methods: In this study, new compounds were synthesized by cross-dehydrogenative coupling method (a navol strategy that has been used to construct a variety of new carbon-sulfur bonds through CDC reaction without using any metal catalyst), then leishmanicidal effects of compounds werestudied in vitro.
Results: calculated IC50 for 1a, 1b respectively are equal to 23.95 µg/ml, 17/06 µg/ml. calculated IC50 for Glucantime are equal to 3 104 mg/ml.
Conclusions: Found results of research show thay 2synthesis derivations affected considerably on leishmania major and have stronger effects respect to control drug. It seems that we can use them as propen sub-stitues compounds in future studies.

Keywords: Leishmaniasis; 1,3,4-thiadiazol; Cross coupling