" Synthesis Characterization and Evaluation of Biological Activity of Some Hetrocyclic Compounds"

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Nitro imidazole antibiotics such as metronidazole, is the drug, most widely used in the treatment of anaerobic protozoan parasitic infections caused by *E. histolytica*. However, it is mutagenic and has been associated with serious side effects. Therefore it is desirable to search for new amoebicidal. Hundred-one compounds of various classes of heterocyclic compounds such as pyrazolines, quinoxalines, oxime-ethers and metronidazole thiosemicarbazones derivatives were synthesized and screened for their antiamoebic activity against *HM1:IMSS* strain of *E. histolytica.* Out of 101 compounds synthesized, 33 compounds were found more active than metronidazole. Some of the pyrazolines derivatives were also screened for in vitro antimalarial activity against Chloroquinine resistant *Plasmodium* strain. The compounds showed no cytoxicity at the highest concentration against normal Human kidney cells. The biological behavior of the compounds revealed that 3-chloro or 3-bromo substitution on the phenyl ring at position 3 of the pyrazoline ring increases the antiamoebic activity. Due to the biological importance of thiosemicarbazones, modification of metronidazole (currently available Antiamoebic drug), was done. Eleven metronidazole thiosemicarbazones analogues were synthesized and also screened for amoebiasis in vitro. On the basis of the results of in vitro studies, it was concluded that the incorporation of thiosemicarbazides into the metronidazole moiety results in promising antiamoebic activity. The compounds found more active than the reference drug, their in vivo and cytotoxity may lead to the development of new and urgently needed drugs for the treatment of amoebiasis.