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4. A comperative Analysis of In Vitro and In Vivo Efficacies of the Enantiomers of Thioridazine and Its Racemate

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Abstract

A long list of chemotherapeutical drugs used in the treatment of the peripheral and the central nervous systems possess anti-microbial activity. Some of these neurotropic compounds are chiral, with the one stereo isomeric form exaggerating reduced neurotropism. This is the case for the levorotatory form of thioridazine. The phenothiazine thioridazine is an interesting compound, characterized by exhibiting a significant growth inhibiting activity on a wide array of micro-organisms. Thioridazine is characterized by another challenging feature, because the compound is concentrated in certain human tissue cells. The present study describes a comparative study of the two enantiomers as well as the racemic form of thioridazine. The study exploits the stereochemical aspect and the *in vivo* potential of these compounds, with a focus on the effects on Gram negative organism *Salmonella enteric* serover Typhimurium. In summary, the results of this study yielded a significant antibacterial activity of all forms of thioridazine, indicating the levorotatory (-)- form to be superior in terms of both its *in vitro* and *in vivo* efficacies.