HIGHLY SELECTIVE THIAZOLE DERIVATIVES AS PROMISING ANTI-*TOXOPLASMA GONDII* AGENTS

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Toxoplasmosis, caused by the protozoan *Toxoplasma gondii,* is a major global health concern, affecting nearly one-third of the population. While often asymptomatic, the infection can be severe or even fatal in immunocompromised individuals. Current treatment relies on pyrimethamine and sulfadiazine, which present limitations such as potential toxicity, restricted efficacy, and the emergence of resistant parasite strains. To address the urgent need for new therapeutic options, this study investigated the antiparasitic potential of compounds with privileged structures, specifically thiazole derivatives. These compounds offer key advantages over existing treatments, including chemical versatility, distinct mechanisms of action, and the potential for targeted structural modifications, making them promising candidates for drug development. In this work, six 2-pyridyl 2,3-thiazole derivatives previously recognized for their potent antitumor activity were evaluated. Importantly, their anti-*T. gondii* activity had not been reported before. *In vitro* assays were conducted against intracellular *T. gondii* tachyzoites (RH strain) and human foreskin fibroblasts to assess compound selectivity. The half-maximal effective concentration (EC_{50}) ranged from 212 to 490 nM, while the half-maximal cytotoxic concentration (CC_{50}) ranged from 1.5 to 48 µM. Notably, one compound presented a selectivity index (SI) of 183, underscoring their potential as promising candidates for further investigation in the development of novel toxoplasmosis therapies. Future studies will focus on elucidating the mechanism of action of these compounds, optimizing their pharmacokinetic properties, and validating their efficacy in *in vivo* models.

Supported by: The São Paulo Research Foundation (FAPESP 2018/18954-4 and 2023/18327-8).

Keywords: Toxoplasmosis, treatment, drug