

Publication

Activity of tribendimidine and praziquantel combination therapy against the liver fluke *Opisthorchis viverrini* in vitro and in vivo**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1972490**Author(s)** Keiser, J; Adelfio, R; Vargas, M; Odermatt, P; Tesana, S**Author(s) at UniBasel** [Keiser, Jennifer](#) ; [Odermatt, Peter](#) ;**Year** 2013**Title** Activity of tribendimidine and praziquantel combination therapy against the liver fluke *Opisthorchis viverrini* in vitro and in vivo**Journal** Journal of helminthology**Volume** 87**Number** 2**Pages / Article-Number** 252-6

Opisthorchiasis, caused by the liver fluke *Opisthorchis viverrini*, a food-borne trematode, is an important public health problem; however, only a single drug, praziquantel is available. We investigated tribendimidine-praziquantel combinations against *O. viverrini* in vitro and in vivo. The IC₅₀ values of 0.16 µg/ml and 0.05 µg/ml were determined for praziquantel and tribendimidine, respectively, against adult *O. viverrini* in vitro. When *O. viverrini* was exposed to both drugs simultaneously (using a drug ratio based on the IC₅₀ (1:3.2)) a synergistic effect was calculated (combination index (CI) at the IC₅₀= 0.7). A similar result was observed when drug addition in vitro was spaced by the respective half-lives of the drugs (a CI of 0.78 at the IC₅₀ for tribendimidine followed by praziquantel and a CI of 0.47 at the IC₅₀ for praziquantel followed by tribendimidine). In vivo median-effect dose (ED₅₀) values of 191 mg/kg and 147 mg/kg were calculated for praziquantel and tribendimidine, respectively. Low to moderate worm burden reductions (38-62%) were observed in *O. viverrini* infected hamsters when both drugs were administered simultaneously or on subsequent days, pointing to antagonistic effects in vivo. Further studies are necessary to understand the striking differences between the in vitro and in vivo observations using combinations of praziquantel and tribendimidine on *O. viverrini*.

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