

## Publication

Antitrypanosomal activity of sesquiterpene lactones from *Helianthus tuberosus* L. including a new furanoheliangolide with an unusual structure**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4500390**Author(s)** Galkina, Anna; Krause, Nico; Lenz, Mairin; Daniliuc, Constantin G.; Kaiser, Marcel; Schmidt, Thomas J.**Author(s) at UniBasel** [Kaiser, Marcel](#) ;**Year** 2019**Title** Antitrypanosomal activity of sesquiterpene lactones from *Helianthus tuberosus* L. including a new furanoheliangolide with an unusual structure**Journal** Molecules**Volume** 24**Number** 6**Pages / Article-Number** 1068

As part of our efforts to exploit the antitrypanosomal potential of sesquiterpene lactones (STL) from; *Helianthus tuberosus*; L. (Asteraceae), besides the known 4,15-; iso; -atriplicolide tiglate, -methacrylate and -isobutyrate, a hitherto unknown STL was isolated. Its structure was solved by extensive NMR measurements and confirmed by single crystal X-ray crystallography. This novel compound is a structural analog 4,15-; iso; -atriplicolide tiglate that possesses the same basic furanoheliangolide skeleton but differs in the position of the oxo function which is at C-2 instead of C-1, as well as in the fact that the oxygen atom of the furanoid ring is part of a hemiketal structure at C-3 and a double bond between C-5 and C-6. For this new STL we propose the name heliantuberolide-8-; O; -tiglate. Its activity against; *Trypanosoma brucei rhodesiense*; (causative agent of East African Human Trypanosomiasis; *Trypanosoma cruzi*; (Chagas Disease); *Leishmania donovani*; (Visceral Leishmaniasis) and; *Plasmodium falciparum*; (Tropical Malaria) as well as cytotoxicity against rat skeletal myoblasts (L6 cell line) was determined along with those of the hitherto untested 4,15-iso-atriplicolide methacrylate and isobutyrate. In comparison with the iso-atriplicolide esters, the new compound showed a much lower level of bioactivity.

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