The 3rd International Online **Conference on Toxins**



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Anti-Toxoplasma gondii mechanisms of a Lys49-PLA2 from Bothrops moojeni snake venom

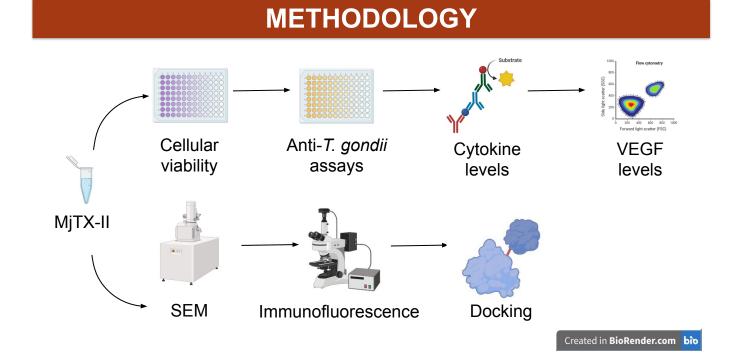
Samuel C. Teixeira¹, Thales A.M. Fernandes², Guilherme Souza¹, Alessandra M. Rosini¹, Aryani F. F. Martínez¹, Angelica O. Gomes³, Rosiane N. Alves⁴, Daiana S. Lopes⁵, Maria V. Silva⁶, Emidio Beraldo-Neto⁶, Partrícia B. Clissa⁷, Bellisa F. Barbosa¹, Veridiana M. R. Ávila⁸, Eloisa A. V. Ferro¹

¹Laboratory of Immunophysiology of Reproduction, Uberlândia Federal University; ²Laboratory of Applied Toxinology, Butantan Institute; ³Institute of Natural and Biological Sciences, Federal University of Triângulo Mineiro; ⁴Department of Agricultural and Natural Science, State University of Minas Gerais; ⁵Institute Multidisciplinary in Health, Federal University of Bahia; ⁶Laboratory of Biochemistry, Butantan Institute; ⁷Laboratory of Biochemistry, Butantan Institute; ⁷Laboratory of Immunopathology, Butantan Institute; ⁷Laboratory of Biochemistry and Animal Toxins, Uberlândia Federal University

INTRODUCTION

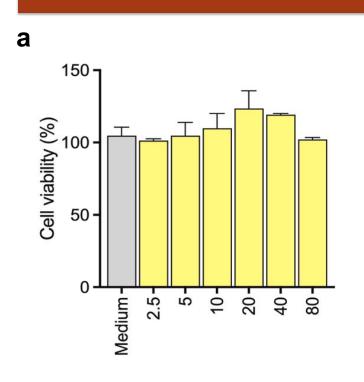
Toxoplasmosis is an alarming public health problem that affects more than one-third of the human population worldwide. T. gondii infection can cause severe symptoms and the vertical transmission can result in miscarriage, fetal abnormalities, epilepsy and encephalitis. The conventional therapy of sulfadiazine and pyrimethamine is associated with severe side effects, including myelotoxicity. In this work, we investigated the anti-T. gondii activity of MjTX-II, a Lys49-PLA2 isolated from B. moojeni. This study contributes to the discovery of therapeutic targets and for the development of antiparasitic molecules against toxoplasmosis.

b

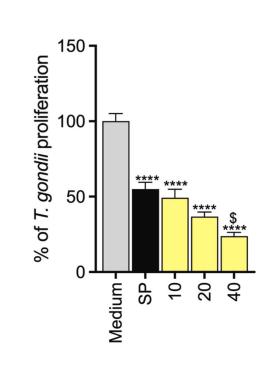


RESULTS

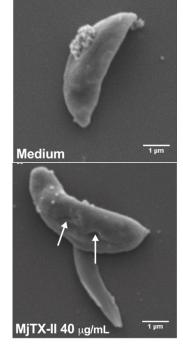
C



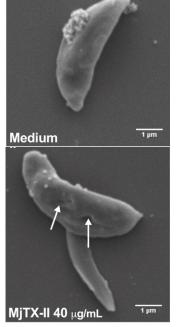
a. MjTX-II did not cause loss of the host cell viability.



MiTX-II gondii impaired Т. intracellular proliferation. SP: Sulfadiazine + Pyrimethamine.

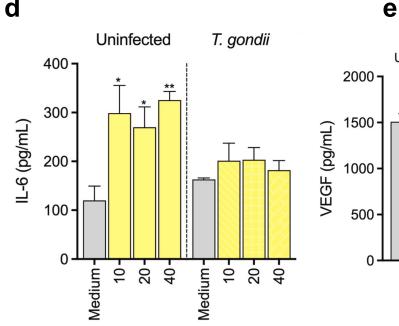


c. MjTX-II affected T. gondii morphology (left) and reduced the number of intracellular parasites after pre-treating the

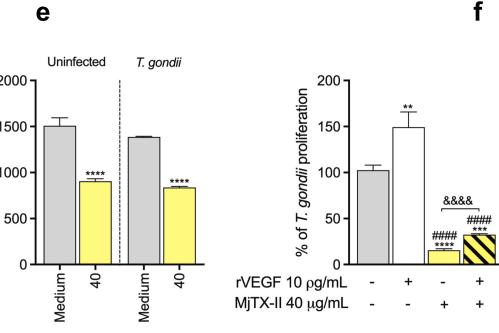


^{5 μ̄m} MjTX-II 40 μg/ml

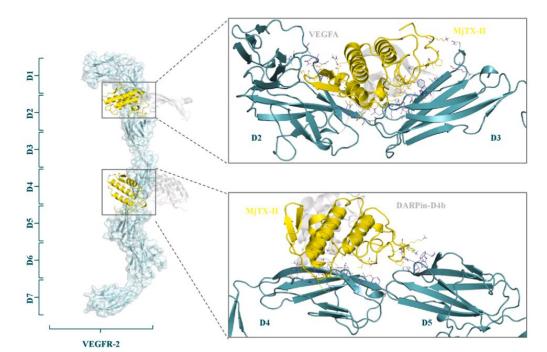
MjTX-II 40 µg/mL



d. MjTX-II induced the production of IL-6 by the host cells.



e. MjTX-II anti-*T. gondii* involves the reduction of VEGF levels.



f. MjTX-II interacts with VEFR2 in the VEGFA (upper panel) and DARPin-D4-inhibitor (lower panel) binding sites.

ACKNOWLEDGEMENTS

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REFERENCE

cells (upper) and parasites (bottom)

Teixeira, SC et al. MjTX-II, a Lys49-PLA2 from Bothrops moojeni snake venom, restricts Toxoplasma gondii infection via ROS and VEGF regulation. Chemico-Biological Interactions, vol. 409, n. 111417, 2025. doi: 10.1016/j.cbi.2025.111417.