

TITLE: *IN VITRO* ACTIVITY OF EUPOMATENOID-5 AGAINST NONTUBERCULOUS MYCOBACTERIA

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ABSTRACT:

Nontuberculous mycobacteria (NTM) are a group that includes all *Mycobacterium* species, excluding the ones from *Mycobacterium tuberculosis* complex and *Mycobacterium leprae*. These mycobacteria are spread in nature, present variable pathogenicity, and were considered typically environmental organisms for a long time. However, the increasing prevalence as causative of variety of diseases, that include pulmonary and nonpulmonary disease worldwide, has attracted more attention and concern on them. The big concern involving NTM is about the treatment, once they are naturally resistant to a high variety of antibacterial drugs, which results in clinical failure to the available treatment scheme. Hence, the need for greater availability, less toxic, as well as more potent drugs that can reduce the treatment time of the patients is imminent. The aim of this work was to assess the *in vitro* activity of eupomatenoid-5 (EUP-5), a neolignan obtained from *Piper* genus, against NTM. The EUP-5 activity was tested in *Mycobacterium chelonae*, *Mycobacterium massiliense*, *Mycobacterium avium*, *Mycobacterium intracellulare* and *Mycobacterium kansasii* according to the Clinical and Laboratory Standards Institute (CLSI) guidelines and resazurin was added for visual reading of the EUP-5 minimum inhibitory concentration (MIC). The already approved drug linezolid was also included in all assays. The MICs of EUP-5 for the NTM tested ranged from 1 µg/mL to 4 µg/mL, and the MIC values of linezolid ranged from 2 µg/mL to 8 µg/mL. The MIC values obtained with EUP-5 were very similar to the ones that it presented against susceptible and resistant *M. tuberculosis* clinical isolates. The results showed that EUP-5 presents great activity against the NTM tested with MIC values similar or lower than the ones obtained with linezolid, an already approved drug for the treatment of diseases caused by NTM.

Keywords: Eupomatenoid-5, Minimum Inhibitory Concentration, Nontuberculous Mycobacteria.

Development Agency: CAPES, Fundação Araucária.