ANTIMYCOBACTERIAL ACTIVITY OF *Zingiber officinale* ESSENTIAL OIL

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Introduction: Non-tuberculous mycobacteria (NTM) form a large group within the genus *Mycobacterium* spp. and shows broad environmental distribution. Some NTMs are responsible for a wide range of human diseases, affecting mainly lung and soft tissue. In the search for new drugs against bacteria, some essential oils (EOs) have shown important activity in NTM. The chemical composition of EOs is a mixture of volatile constituents which may be responsible for the activity against some pathogens. *Zingiber officinale* Roscoe (ginger), is a perennial herbaceous plant native to tropical Asia and its EO exhibited several biological activities. **Objective:** In this sense, we evaluated the *in vitro* activity of *Z. officinale* essential oil (GEO) against some NTM of clinical importance. **Methods:** Rhizomes of *Z. officinale* were subjected to a hydrodestillation process in a Clevenger-type apparatus and GEO was analyzed using a gas chromatograph coupled to a mass spectrum in order to identify the compounds by comparison of their retention index obtained. The activity was carried out against *Mycobacterium abscessus*, *Mycobacterium chelonae*, *Mycobacterium massiliense* and *Mycobacterium smegmatis*, by broth microdilution method using Müeller-Hinton Broth with cations adjusted. **Results:** The analyses of GEO showed a total of 63 compounds characterized by a high amount of sesquiterpenes hydrocarbons (49.04 %) followed by monoterpenes oxygenated (23.16 %), monoterpene hydrocarbons (16.58 %), sesquiterpenes oxygenated (9.65 %), diterpenes oxygenated (0.27 %), phenylpropanoid (0.45 %) and cetone (0.30 %). The main compounds in GEO was α-zingiberene (16.40 %). The minimal inhibitory concentration (MIC) of GEO against NTM ranged from 15.6 to >250 µg/mL, being the lowest MIC values observed against *M. chelonae* and *M. massiliense* (MIC 15.6 µg/mL). **Conclusion:** The results of this study showed that GEO has activity against fast-growing mycobacteria. Nevertheless, further studies are in progress to explain the action mechanism of GEO against these pathogens.

Keywords: ginger, essential oil, non-tuberculous mycobacteria.