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Antiprotozoal Activity Against Trypanosoma cruzi (Chagas Disease) of Constituents of Lippia graveolens **Kunth (Mexican Oregano)**

Ramiro Quintanilla Licea1*, Isvar Kavim Ángeles Hernández1, Zinnia Judith Molina-Garza2 and Lucio Galaviz-Silva2

¹Laboratorio de Fotoquímica, Universidad Autónoma de Nuevo León, México

²Laboratorio de Patología Molecular, Universidad Autónoma de Nuevo León, México

Thagas disease is caused by the protozoan parasite *Trypanosoma cruzi*. This disease is also known as American trypanosomiasis and approximately 6-7 million people are currently infected (WHO, http://www.who.int/mediacentre/factsheets/fs340/en/). Due to the side-effects and the resistance that pathogenic protozoa show against common antiparasitic drugs (e.g., Nifurtimox), growing attention has been paid to plants used in traditional medicine around the world to find new antiprotozoal agents. We reported shortly about the antiprotozoal activity in vitro against T. cruzi of the methanolic extract of Lippia graveolens Kunth (Molina-Garza et al., 2014, Acta Tropica, 136, 14-18). In this study, we are reporting the structure elucidation of three compounds isolated from this plant with significant antiprotozoal activity in vitro against T. cruzi.

The following work-up of the methanol extract of L. graveolens afforded (1)carvacrol, (2)sakuranetin and (3)naringenin using several chromatographic techniques. Structural elucidation of the isolated compounds was based on spectroscopic/spectrometric analyses (IR; ¹H- and ¹³C-NMR; MS) and comparison with literature data. Cultured *T. cruzi* epimastigotes were incubated for 96 h with different concentrations of the compounds. The inhibitory concentration (ICs,) was determined for each compound via a colorimetric method.

The compounds showed significant antiprotozoal activity against T cruzi epimastigotes: carvacrol (100 % inhibition, IC₅₀ 24.91 $\mu g/mL$), sakuranetin (96 % inhibition, IC₅₀ 39.56 $\mu g/mL$) and naringenin (98 % inhibition, IC₅₀ 50.34 $\mu g/mL$).

The IC₅₀ values of the compounds are less effective than Nifurtimox (IC₅₀ 10 µg/mL), but they may represent new bioactive compounds for the treatment of trypanosomiasis.

Biography:

Dr. Ramiro Quintanilla Licea was born in Cerralvo, Nuevo León, Mexico. He has got a degree in Industrial Chemistry (1977) and a master's degree in organic chemistry (1979), both degrees from the Universidad Autónoma de Nuevo León (Mexico). He made his Ph.D. in organic chemistry at the University of Frankfurt am Main, in the German Federal Republic (1988). He is currently involved in research projects regarding Mexican plants with anticancer, antiprotozoal and antidiabetic activity.