

INHIBITORY EFFECT ON GROWTH OF *Moraxella catarrhalis*. USING ACETONE EXTRACT OF *Salvia pachyphylla*.

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Abstract.

Due to the high resistance of *Moraxella catarrhalis* introduces β -lactam antibiotics such as penicillin, ampicillin and amoxicillin and susceptible to chloramphenicol and erythromycin, both causes of severe adverse effects in infants, being under 36 months most affected by *M. catarrhalis*, was decided to evaluate the antimicrobial activity of acetone extract of *Salvia pachyphylla*. Using 40mg/ml gentamicin sulfate as antibiotic control. The results are expressed in cm of inhibition zone by the disc diffusion method and $\mu\text{g/ml}$ for MIC. Both crude acetone extract as primary fractions obtained from *S. pachyphylla* exhibit good antimicrobial activity and are promising, as antimicrobial agents.

Keywords: Antibiotics, antimicrobial activity, gram-negative fractions

Introduction .In Mexico a study in the open population affected by acute respiratory infection caused by *M. catarrhalis*, which reported that 35% had an infection in the upper respiratory tract at the time of sampling, of which 22 % reported a history taking antibiotics within 15 days prior to sampling. Children who had previously received antimicrobials, only six had positive culture for *M. catarrhalis*¹. Whereas the percentage of respiratory tract colonization by *M. catarrhalis*, similar to that reported with *S. pneumoniae* and *H. influenzae* is likely that, as in other countries, this germ respiratory infections occur as frequently as other respiratory pathogens. Strains of *M. catarrhalis* are generally producing various β -lactamases and participation should be suspected when there *M. catarrhalis* therapeutic failure to treatment with β -lactams antibiotics. The frequency of infections by *M. catarrhalis* has increased dramatically in recent decades. This has been attributed to the emergence of strains resistant to multiple antibiotics and a growing population of people with weakened immune systems. It is not uncommon to isolate *M. catarrhalis* strains that are resistant to some or all standard antibiotics. This phenomenon has created an unmet medical need and demand for new antimicrobial agents, vaccines, drug screening procedures and diagnostic tests for this organism, where plants use either popular medicinal use or use as a food preservative models are studied to search for new medicinal agents, as in the case of *Salvia* genus that includes about 900 species in the family Lamiaceae, some cultivated and used worldwide as flavoring and as medicine tradicional². This genus has been the subject of numerous chemical studies describing the isolation of diterpenoids, tanshinonos and polyphenols from different parts of the planta³. Fever, colds, bronchitis, and tuberculosis infection, in ancient *Salvia* species are used to cure them⁴. In Baja California, Mexico, the community of the Kumiai⁵ used to cure other ills. **Objective.** Assess the antimicrobial effect of root of *Salvia pachyphylla* on *Moraxella catarrhalis*. **Material and methods.** The ability of a substance to prevent bacterial growth and other germs is quantified through the agar diffusion method used to determine the fractions showed inhibition zones greater than 6 mm considered active and then determine Minimum Inhibitory Concentration, MIC expresses the minimum amount of the substance required to prevent and inhibit the growth of a microorganism under laboratory conditions. As the MIC value the effectiveness of the substance is greater to prevent bacteria proliferation. microdilution method using polystyrene boxes of 96 wells. In each well is placed 75 μL of culture broth and plant extract. The dilutions were made in triplicate. **Results.** The results of the antimicrobial activity of the extract of *Salvia pachyphylla* on *M. catarrhalis* are summarized in Table 1. Where the crude AE, showed no inhibitory activity, but to purify the crude extract, as chloroform fraction, CF, showed inhibiting the growth of *M. catarrhalis*, 1.3 cm zone of inhibition with a MIC of 2 $\mu\text{g/mL}$, the pure compound, criptotanshinona, CT, showed a similar inhibitory activity with 1.6 cm zone of inhibition and MIC of 2 $\mu\text{g/mL}$. **Conclusions.** The activity of acetone extract of the root of *S. pachyphylla* on, turns out to be promising as an antimicrobial agent. Although the results are preliminary, support its popular use as a medicinal plant for the treatment of infections, so the study will continue at the molecular level. **References.**1. Blanca Leañós-Miranda, María Guadalupe Miranda-Novales, Fortino Solórzano-Santos, MC Laura Ortiz-Ocampo, Hector Guiscafre-Gallardo (2001). Prevalence of *Moraxella catarrhalis* colonization in asymptomatic carriers under six years. Public Health in Mexico. No.1, vol.43 . 27-31.
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