

THE CHEMICAL COMPOSITION OF THE ESSENTIAL OIL OBTAINED FROM THE FRUITS OF *Morinda citrifolia* (RUBIACEAE) AND EVALUATION OF THE ANTIMICROBIAL ACTIVITY.

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Abstract

The species *Morinda citrifolia* Linn, popularly known as Noni is used in folk medicine for treat a variety of diseases¹. The extracts of the fruit were tested for anthelmintic activity in vitro² and for antioxidant capacity³. This study was performed to analyze the chemical composition of the essential oil obtained from the ripe fruits of the *M. citrifolia*, followed by the evaluation of the antimicrobial activity. The plant material was collected in the city of São Vicente and the hydrodistillation held in Clevenger type apparatus with average yield of the 0.52%. Constituents of the essential oil were identified by GC-MS using model QP5050-A of Shimadzu followed by the calculation of the Kovatz Index (KI), ¹H NMR and ¹³C NMR obtained on a Bruker model DPX-300 spectrometer⁴. Have been identified six compounds oxygenated representing 97.39% of the composition. With 72.42% of the concentration the octanoic acid stood out as majority followed by isoamyl ocatanoate with 13.99%. It was held disk diffusion test with six bacteria according to the recommendations of the NCCLS⁵. The evaluation of the antimicrobial activity of essential oil from the fruit showed activity against some tested bacteria species (see Table 1).

Table 1 - Diameter of the inhibition zones of the disk diffusion test.

Species	Positive Control (cm)	Negative Control DMSO (cm)	Negative C. sterile water (cm)	Average (cm)	
<i>Enterococcus faecalis</i>	2,1	-	-	2,1	Gram-positive
<i>Staphylococcus aureus</i>	2,2	-	-	1,0	Gram-positive
<i>Staphylococcus epidermidis</i>	2,6	-	-	0,9	Gram-positive
<i>Escherichia coli</i>	2,5	-	-	1,1	Gram-negative
<i>Klebsiella pneumoniae</i>	1,8	-	-	0,6	Gram-negative
<i>Pseudomonas aeruginosa</i>	2,9	-	-	0,8	Gram-negative

Source: research data, 2015.

With the exception of *K. pneumoniae* is concluded that the essential oil has antimicrobial activity indicating that new tests with other strains can produce good results. The high concentration of octanoic acid suggests it is responsible for the observed activity.

References

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