INTRODUCTION

The use of plants in popular medicine for treatment of various diseases dates back throughout human history, and this popular knowledge has guided the research and development of drugs. In parallel, pathogens have been acquiring resistance, hindering the diagnosis and treatment of infectious diseases, thereby raising the need for new drugs and thorough research into plants¹. The present study aims the evaluation of Rosmarinus officinalis L., also known as rosemary; in order to identify the compounds with antimicrobial activity.

There has been reported inhibitory activity data of rosemary over several microbial species, such as C. albicans, S. aureus, E. faecalis, P. aeruginosa, Actinomyces spp., Streptococcus spp., E. coli, but there is no data against mollicutes strains². This study aims to evaluate the biological activity by determining the minimum inhibitory concentration (MIC) of the rosemary ethanolic extract (EE) and hidroalcoholic extract (HE) and its partitions over mollicutes strains.

MATERIAL AND METHODS

Rosemary leaves were dried and extracted in Soxhlet apparatus; the exsiccate number 56231 is at the Dr. Roberto Miguel Klein herbarium, FURB. For the EE it were used 77.8g of leaves in ethanol, and for the HE 65.5g were extracted in ethanol 70°. For the liquid-liquid partition the extracts were solubilized in water and filtered to remove the insoluble part, the soluble material (SOL) were partitioned in hexane (HEX), dichloromethane (DCM), ethyl acetate (EA) and butanol (BUT). The filtered insoluble material (INS) was solubilized in DCM, filtered and partitioned in water (AQ), EA and BUT. When dried the partition DCM.INS was resuspended in hexane to obtain the HEX.INS and DCM.INS fractions. The extracts and its partitions were tested by serial dilution against the following strains: Mycoplasma capricolum (ATCC 27343), M. genitalium (ATCC 33530), M. pneumoniae FH (ATCC 15531), M. mycoïdes subsp. capri (MLC) PG3 (NCTC 10137) and M. pneumoniae 129 (ATCC 29342).

RESULTS

The EE resulted in 20.7g of extract (26.7% yield); and the HE resulted in 18.75g (yield 28.64%). The lowest inhibitory values obtained were from the HE extract: 15.62 μg/ml with the HEX.SOL and DCM.SOL against M. capricolum and HEX.SOL on M. pneumoniae FH. The EE lowest values were 31.25 μg/ml on M. capricolum: HEX.INS, DCM.INS and DCM.SOL; and HEX.INS and HEX.SOL on M. pneumoniae FH. MIC values from the HEX and DCM of both extracts ranged from 15.62μg/ml to 250μg/ml against all the strains used.

CONCLUSIONS

Rosemary exhibited promising MIC against the strains tested, instigating further research on the compounds which confers its inhibition activity.

ACKNOWLEDGMENTS

FURB. CAPES.

REFERENCES

² Oliveira, 2016. Doctoral thesis, UEP-SP.