

PRELIMINARY SCREENING TO DETERMINE POTENTIAL ANTIMICROBIAL ACTIVITIES IN LEAF EXTRACTS OF *Myrtaceae* FAMILY PLANTS: *Psidium guajava* L. AND *Eugenia uniflora* L. AGAINST *Streptococcus agalactiae*

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Psidium guajava L. and *Eugenia uniflora* L. are native vegetal species from subtropical America, specially Argentina, Brazil, Paraguay and Uruguay. They are used in folk medicine for various purposes such as antihypertensive, antidiarrheal, diuretic, antioxidant and antimicrobial. *Streptococcus agalactiae* group B, commonly known as GBS, is an infective agent that affects humans and animals, particularly fish called Tilapia and livestock. GBS is classified by capsular phenotype in ten identified serotypes: Ia, Ib, and II-IX. Of these, Ia is more frequently associated to infections in humans. However, Ib and II are usually responsible in fish infections. Penicillin, macrolides, lincosamides and streptogramins are used for treating infections caused by this microorganism. In recent years, an increased resistance to these drugs has been reported. The emergence of resistance against classical pharmacological treatments generates interest in the development of new alternatives. The aim of this work was to search for antimicrobial activity of leaf extracts of *Psidium guajava* L. and *Eugenia uniflora* L. against GBS. Fifteen wild strains of GBS, serotypes Ia, Ib and II, were assayed with aqueous and ethanolic extracts of both plants. Vegetal samples were collected in Oberá, Misiones Province (*E. uniflora* 27°54'05.14 S; 55°16'83.81 W and *P. guajava* 27°54'51.46 S; 55°16'42.09 W). The extracts were obtained by controlled digestion at 37°C for 24 h and 48 h using water and ethanol, respectively. Streak plate disc diffusion test was performed inoculating a 0.5 McFarland turbidity bacterial suspension on Müller-Hinton agar supplemented with blood. 2 mg of extract were loaded on the discs. Minimal Inhibitory Concentration (MIC) test was performed by plate macrodilution test according to recommendations of *Clinical and Laboratory Standards Institute* (CLSI, 2015) and modifications by Su *et al*, 2015. Dimethyl Sulfoxide (DMSO) was used as negative control. The range of extracts concentration tested was 0.0625 mg.mL⁻¹ to 30 mg mL⁻¹. The ethanolic extracts of both species showed low inhibitory activity by the disc diffusion test (*P. guajava* L. \varnothing = 7.1mm SD= 0.57 *E. uniflora* L. \varnothing = 7.6mm SD=0.60) whereas the aqueous extracts did not show inhibitory activity at all (\varnothing = 6mm SD=0 in both cases). For the case of *P.guajava* L. we were able to verify that the ethanolic extract shows lower MIC than the aqueous one (ethanolic \varnothing =20.7 mg mL⁻¹ SD=2.67, aqueous \geq 30 mg mL⁻¹). Although it was impossible to do the MIC assay with *E. uniflora* L. aqueous extract at concentrations over 5 mg mL⁻¹, because it spoils the growing media (ethanolic \varnothing =23.57 mg mL⁻¹ SD=4,97). We conclude that ethanolic extracts of both plants have potential antimicrobial activity against GBS. The results indicate the need to continue with the studies and to advance in the identification and characterization of responsible metabolites. It represents the potential to develop a product with application in human medicine, livestock and / or pisciculture, with impact not only on human health but economic to avoid or reduce the possibility of infections by GBS in livestock and fish.

Keywords: *Psidium guajava* L., *Eugenia uniflora* L., Plant extracts, *Streptococcus agalactiae*

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