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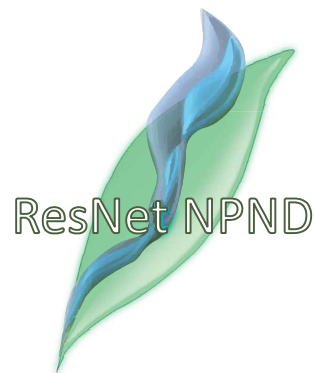
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DRUG DISCOVERY FOR NEGLECTED DISEASES INTERNATIONAL CONGRESS 2018

4th Scientific Meeting of the Research Network
Natural Products against Neglected Diseases



DDNDIC 2018



Book of abstracts

4th – 6th December 2018

Facultad de Farmacia y Bioquímica – Universidad de Buenos Aires
Ciudad Autónoma de Buenos Aires, Argentina

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Antiviral activity of plant species from Tierra del Fuego

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The search for new antivirals is a constant and current need. Numerous viral infections recognized for a long time in the old world begin to be a health problem for America (Chikungunya, Zika, among others), which do not have available antiviral treatments. In addition, the appearance of strains of other resistant viral pathologies, such as herpes simplex type 1 (HSV-I), is added. In the Island Tierra de Fuego, there is a large number of plant species that have not been studied. They are plants that grow in inhospitable environmental conditions and have designed defence mechanisms that allow them to survive in this type of environment. These characteristics could favour that these species possess bioactive compounds with a wide range of pharmacological activities.

In this context, we proposed to evaluate in a preliminary way the cytotoxicity and the in vitro antiviral effect of extracts of native plants of Tierra del Fuego against Chikungunya (CHIKV) and HSV-1 viruses. Specimens of the species *Empetrum rubrum* Vaht ex Willd were selected. (Empetraceae) “uvilla” (Er) and *Plantago barbata* subsp. Austro-Andean Rahn. (Plantaginaceae) “murtilla” (Pb), which were collected in the cordillera area of Ushuaia during the summer season and identified by Dr. Gloria Barboza (IMBIV-CONICET). Subsequently, they were subjected to maceration with ethanol until exhaustion of plant material. The ethanolic extracts (EtOH) obtained from each plant species were concentrated under reduced pressure, resumed with water and partitioned with solvents of increasing polarity (hexane, dichloromethane and ethyl acetate) in liquid-liquid extractors. The extracts obtained from the partitions were evaluated in terms of their antiviral activity against HSV-I (Kos strain) and CHIKV (Asian American genotype), previously studying their cytotoxicity. Both evaluations were carried out using the neutral red uptake method, using the Vero cell line.

Through the cytotoxicity tests, the dose response curves were obtained, from which the concentrations that assured 90% of cell viability in the antiviral tests were chosen.

The ethyl acetate extracts obtained from both plant species were very active only against the HSV-I virus (100% inhibition). The dichloromethane extracts resulted with an average activity on both viruses (between 40-60% inhibition). Of the hexane extracts, only Pb was moderately active for both viruses (45-56% inhibition). The results obtained are promising, since the species evaluated showed a potential antiviral activity on viruses of sanitary importance. As well it is a contribution to the knowledge of the bioactivities of the Flora of Tierra del Fuego.

Keywords: antiviral; Herpes; Chikungunya.