

2<sup>nd</sup> International Conference and Exhibition on

# MARINE DRUGS AND NATURAL PRODUCTS

June 15-17, 2017 London, UK

## Antiviral effects of secondary metabolites from Mexican seaweeds against Measles virus

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The investigation of natural products isolated from marine sources is an interesting approach in the development of new antiviral agents. Sulfated Polysaccharides (SPs) and Polyphenols (PPs) extracted from five Mexican seaweeds (*Macrocystis pyrifera*, *Eisenia arborea*, *Pelvetia compressa*, *Ulva intestinalis* and *Solieria filiformis*) were tested in this study in order to evaluate their effect on the Measles Virus (MeV) infection *in vitro*. The effect of SPs and PPs on cell viability was determined by MTT assay; their antiviral activity on MeV infection was evaluated by syncytia reduction assays and confirmed by qPCR. The tested metabolites showed antiviral activity and no cytotoxicity at inhibitory concentrations, resulting in therapeutic indexes >1500 in all cases. Looking at the mode of action of these metabolites, time of addition experiments and viral penetration assays suggest that SPs tested in this study are acting at different levels within the first stages in viral infection, while Virucidal assays showed that PPs have a direct inactivation effect on the virions. SP2, SP5, PP2 and PP5 showed the highest antiviral activities and were selected to determine their combined effect. The best synergistic effect was observed for combinations of SP2 at IC<sub>50</sub> with SP5 at IC<sub>25</sub>, and SP5 at IC<sub>25</sub> with PP2 at IC<sub>50</sub>. The synergistic effect observed in this study would allow reducing the treatment dose and minimizing or delaying the induction of antiviral resistance. SPs and PPs of the selected seaweed species thus appear as promising candidates for the development of natural antiviral agents.

### Biography

Laura Trejo is a Researcher, Professor and is responsible for the Unit of Virology and Cancer of the Faculty of Biological Sciences, UANL. She has her specialty in Virology, has published more than 35 papers in reputed journals and has been serving as reviewer of papers in several renowned journals. She has been a Trainer of undergraduate and Post-graduate students in her expertise area; her line of research in "antiviral effect of natural products" has given rise to 5 recent publications, presentations in national and international congresses and development of a patent.

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