



## IF WE COULD ENTRAP ALGAE TO PRESERVE OUR ANTIVIRALS?

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The HSV-1 and HSV-2 are human infections responsible for several different clinical manifestations, varying from oral and genital sores to serious encephalitis associated with immune depression like stress or other pathological condition. Otherwise, the continuous use of acyclovir has been associated with an increase of resistant strains, resulting in use of antiherpetic drugs with higher toxicity. In this sense, the Brazilian coast, full of marine terpenes - secondary metabolites produced from algae of the genus *Dictyota*, *Canistrocarpus*, and *Caulerpa* have shown a promising alternative. Our previous studies showed that these compounds have an efficient inhibitory effect against HSV and HIV, reaching up 97% of viral inhibition. However all steps involved in pre clinical assays needs a reasonable amount of biomass, mainly because the complete elucidation of the synthesis route of some important compounds is not already done. The innovation of using liposomes as a cargo showed a significant reduction of the antiviral concentration up to almost 1,2 M, in special with dollabelladienotriol, isolated from *Dictyota menstrualis* and the most efficient anti-HIV drug. All the compounds were able to inhibit

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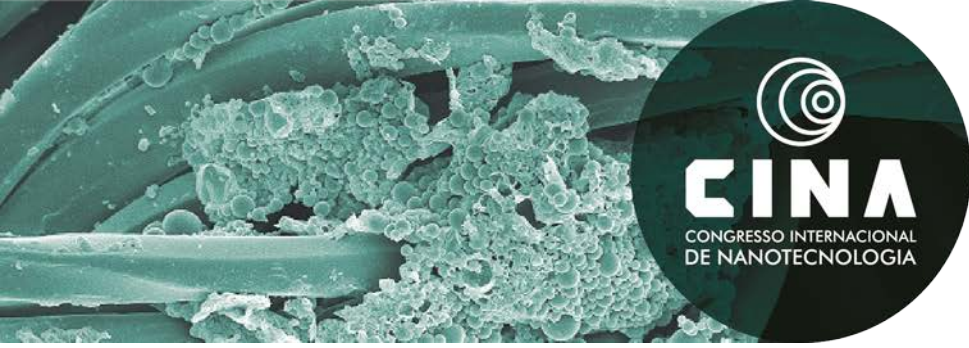
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NANOBIOTECNOLOGIA  
E SUAS APLICAÇÕES**

the precoce and late phases of HSV replication. Regarding the viability of Vero cells in the presence of these terpenes, we showed cytotoxic concentration (CC50) varying from 9 M (caulerpine; *Caulerpa racemosa*) to 26 M (dollarabelanodienotriol), almost 100 times below the values in the absence of liposomes. In conclusion, the use of liposomes, which also could be coupled to peptide of fusion of HSV reduce the cytotoxicity profile while enhance the antiviral effect. For this, we support the utilization of liposomes to efficiently reduce the optimal biological concentration of marine terpenes while we are elucidating the final steps of the terpene production. Supported by CAPES.

