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# Antiviral Activity of Carrageenans from Marine Red Algae

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***SUMMARY*. Three carrageenan representatives of each structural type: λ- and ι –family *(Gigartina acicularis)*, ι-family *(Euchema denticulatum)* and κ –family *(Kappaphycus cottonii)* have been tested for their in vitro antiviral activity. The carrageenans proved to be potent inhibitors of herpes human virus type 1 (HHV-1) and Poliovirus. The best results were obtained with carrageenans from *Gigartina acicularis* and *Euchema denticulatum,* which are more sulfated than those from *Kappaphycus cottonii.* The selective index values ($CC_{50}/ID_{50}$) ranged from more than 22 to more than 545 for HHV-1 and more than 6.6 to more than 32 for Poliovirus. No citotoxic effects were observed. At 0.75 mg/ml, none of the carrageenans tested showed a virucidal activity against HHV-1 or Poliovirus. Carrageenans from *Euchema denticulatum* (ι-family) and *Gigartina acicularis* (λ- and ι –family) exerted their antiviral effect via, in part, by a lower inhibition of the virus attachment and by the interference in a subsequent stage of the virus replicative cycle. The κ-carrageenan from *Kappaphycus cottonii* exerted its antiviral effect mainly by a lower inhibition of the virus attachment. In cultures treated with carrageenans from *Euchema denticulatum* (ι-family) and *Gigartina acicularis* (λ- and ι –family), the HHV-1 viral DNA synthesis had a reduction of threefold and twofold with 0.75 mg/ml, respectively.**

*KEY WORDS:* Antiviral, *Carrageenan,* Herpes Simplex viruses, Poliovirus, Polysaccharide, Red algae.

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