Different conditions of extraction of sulfated polysaccharides from *H. musciformis* leads to variable patterns of pharmacological activities

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**Introduction:** Marine seaweeds are one of major sources of biologic compounds like as sulfated polysaccharides (SP). **Materials and Methods:** To aim better conditions of extraction of SP from *H. musciformis*, the seaweed was submitted to proteolysis for 8h, 12h, 18h and 24h. In addition, the proteolysis was also carried out using variable volumes of 0.25M NaCl (4v, 6v, 8v and 10v) for 18h. Then polysaccharides were precipitated and obtained FT4v, FT6v, FT8v, FT10v crude extracts (CE) which were evaluated for chemical composition, electrophoresis profile, anticoagulant, antioxidant, immunomodulatory activity and action under cell viability (HeLa, RAW, 786). **Results and Discussion:** CE displayed high sugar and sulfate content, with variable sulfate/sugar relation (FT4v: 0.47; FT6v: 0.36; FT8v: 0.39; FT10v: 0.39) and low protein and phenolic contamination. Electrophoresis showed caracteristic metachromasia of sulfate polymers. CE exhibited similar total antioxidant capacity (6,0 equivalents of ascorbic acid) and FT4v showed greater anticoagulant activity by activated parcial thromboplastin time (124±3.3 seconds). CE estimulated NO release with and without LPS, and IL-6, TNF-α release from RAW cells without LPS. Stimulatory action in some amounts was largest than positive control (cells stimulated with LPS). CE with minor sulfate/sugar relations (FT6v, FT8v, FT10v) showed largest immunomodulatory action while CE (FT4v) with larger sulfate/sugar relation displayed largest anticoagulant activity. FT6v and FT8v showed greater cytotoxic potencial under RAW cells treated for 24h. In addition, all CE reduces the HeLa and 786 cells viability in the rate. **Conclusions:** It is possible to extract sulfated polysaccharides from *H. musciformis* with different biological activities altering extraction conditions as using different volumes of 0.25M NaCl.

**Key-words:** Carrageenans; Rhodophyta; anticoagulant; immunomodulatory activity.

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