



SULPHATED SAPONINS FROM THE STARFISH *LUIDIA SENEGALENSIS* COLLECTED AS BY-CATCH FAUNA

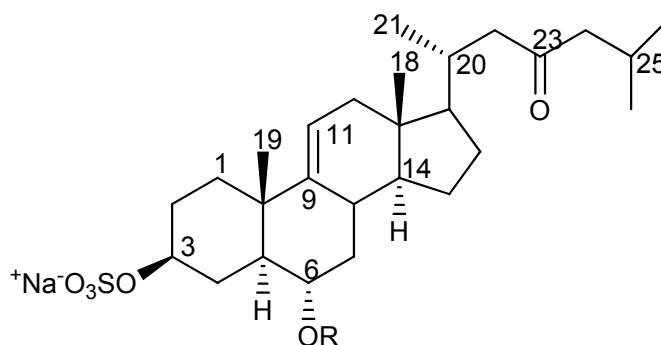
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Abstract: The by-catch fauna of the shrimp fishery includes a number of marine invertebrates that are discarded because they do not have commercial value. In order to try to add some value to these materials, we analyzed the chemical composition of the starfish *Luidia senegalensis* (Luidiidae, Asteroidea: Paxillosoida) collected in the Brazilian coast as a consequence of the trawling fishery method. In order to access their chemical composition, we used a combination of solid phase extraction (SPE) followed by ultra high performance liquid chromatography coupled to electrospray ionization ion trap tandem mass spectrometry (UPLC-ESI-IT-MSⁿ). *Luidia* spp. contains mainly asterosaponins, which are the glycosides derived from the polyhydroxysteroids. Four asterosaponins found in *L. senegalensis* present a $\Delta^{9,11}$ - $3\beta,6\alpha$ -steroidal core, with four rings, a sulphate group at C3, one oxo group at the side chain, and five or six sugar moieties attached to C-6 (Aglycone **1**) [C₆₂H₁₀₁O₃₃SNa MW 1428; C₆₂H₁₀₁O₃₂SNa MW 1412; C₅₆H₉₁O₂₇SNa MW 1250 (two isomers)]; a fifth saponin presented an additional double bond at $\Delta^{24,25}$ (Aglycone **2**) [C₅₅H₈₇O₂₇SNa MW 1262]. Sulphated steroidal saponins present several biological activities, like hemolytic, antineoplastic, cytotoxic, antitumor, antibacterial, antiviral antifungal and anti-inflammatory [1]. Besides, they could be involved in several spheres of living like chemical defense, digestion and reproduction [2]. This study helped us to support the presence of important and potentially bioactive compounds in invertebrates associated to the by-catch fauna of the shrimp fishery, using a fast and efficient method (Fapesp, CNPq).

References:

- [1] Datta, D.; Talapatra, S.N.; Swarnakar, S. 2015. Bioactive compounds from marine invertebrates for potential medicines – An overview. *Int. Lett. Nat. Sci.* 34: 42-61.
- [2] Clark, A.M. and Downey, M.E. 1992. Starfishes of the Atlantic. Chapman & Hall Identification Guides, 3. Chapman & Hall: London, UK.



1

2 $\Delta^{24,25}$