POTAMOTRYGON MOTORO MUCUS PEPTIDOME

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The fire stingray (Potamotrygon motoro) is a freshwater stingray of medical interest widely distributed in Brazilian river basins. Stingrays are animals capable of secreting mucus, rich in organic compounds, over their entire body surface as a form of passive defense, serving as an anatomical and physiological barrier against the external environment. Recent studies have shown that it has similar activities to its venom, and can also intensify some of them, which highlights the importance of mucus in the poisoning process and in the animal\'s biology. Little is known about its functions and even less about the biochemical composition of stingray mucus. In this context, this work aims to investigate and biochemically characterize low-mass compounds from Potamotrygon motoro, by means of a peptidome. Aiming to assess the it’s composition, the mucus dispersed throughout the animal\'s body was collected by scraping the skin, then processed to be purified by C18 solid phase extraction. After purification, the sample was injected in a Q-TOF Shimadzu LC-MS/MS-9030 sistem, with no previous digestion. As a result, we obtain a total of 23 peptides by de novo sequencing, of wich 13 peptides had no correlations with proteins or peptides in the database according to the analyses made by the PEAKS software and 10 showed correlation with fragments of structural proteins. Our study shows the presence of new pepetides derived from classical structural proteins, wich do not exclude alternative roles in the mucus, since additional functions of many proteins are already known, such as Hipposin, a histone H2A-derived peptide with antimicrobial activity, isolated from Atlantic halibut skin mucus. In this way, our new pepetides’s discovery is an indication that P. motoro’s constitutive proteins fragments may be acting as cryptids and playing important biological roles in their mucus.

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