

Immune Response of Lion's paw Scallop *Nodipecten subnodosus* (Sowerby, 1835) Challenged with *Vibrio alginolyticus*

Erick Ramses Ramírez–Castillo, Marcial Arellano-Martínez, Bertha Patricia Ceballos-Vázquez, Héctor Abelardo González-Ocampo, Gabriel Aguirre-Guzmán, Antonio Luna-González

Immune response of Lion's paw scallop *Nodipecten subnodosus* to the challenge of *Vibrio alginolyticus* strain APSA2 was studied through the characterization of the activity of lysosomal enzymes and hemocyte size and number. Samples were obtained as hemocyte lysate supernatant (HLS) and plasma, after 6 and 24 hours, and 3, 6, and 10 days after challenge. The enzymatic activity was tested by colorimetric and lysoplate assay techniques. Between sampling times, significant differences in enzymatic activity determined by the colorimetric technique were found. The enzymatic activity was significantly higher in HLS than in plasma; in addition more enzymes were detected in HLS as compared with plasma. The enzymes with higher activity were leucyl arylamidase and esterase in both, HLS and plasma. Lysozyme-like activity did not show significant differences between the sampling times. However, in plasma the lysozyme-like activity was significantly higher than in HLS, suggesting that lysozyme was released from hemocytes into plasma as a first response to the challenge. A significantly negative correlation was found between protein concentration in plasma and in HLS. Based on the findings reported here, we can affirm that hemocytes and lysosomal enzymes are two of the mechanisms that this species has to fight bacterial attacks.