

Regeneration is a physiological process through which damaged or lost tissues can be continuously replenished and maintained. Unlike humans, organisms of the phylum Echinodermata present amazing regenerative capacities of different body parts. Among these organisms, the sea cucumber *Holothuria glaberrima* regenerates its digestive tract and nervous system. We aim to understand and characterize the cellular and molecular events associated, specifically, with the intestinal regeneration of *H. glaberrima*. Previous studies have shown that electroporation, the application of electrical pulses to permeabilize cellular membranes, promotes dedifferentiation which is a hallmark of regeneration. In order to fulfill our aim, we will implement electroporation to evaluate its effect during intestinal regeneration. Through characterization of intestinal regeneration-associated processes we hope to create a basis for the development of new therapeutic strategies that could potentially enhance the limited regenerative capacity in humans.