STUDENT/FACULTY SCIENTIFIC RESEARCH GROWS IN MIAMI

Miami, Fl, December 14, 2013 -- Miami's St. Thomas University is steadily positioning itself as an undergraduate leadership developer in the sciences. Students are using advanced technology and individualized hands-on scientific training, working with doctoral level faculty who lead them in joint research projects under a strong mentor relationship.

This fall, STU professors published a second paper from the United States Department of Defense’s (DOD) funded spinal cord injury project. Dr. Jeffery Plunkett and Dr. Alexis Tapanes-Castillo from the School of Science, Technology and Engineering Management recently published the second of four articles entitled “Characterization of a novel primary culture system of adult zebrafish brainstem cells”. The work appears in the December edition of the Journal of Neuroscience Methods. This article highlights the work of approximately 20 undergraduates over the past three years that have called the “Plunkett Laboratory and STU” home. For additional information on STU School of Science and other academic programs please contact Chief Marketing Officer Marivi Prado at mprado@stu.edu, 305.474.6880.
Basic Neuroscience

Characterization of a novel primary culture system of adult zebrafish brainstem cells

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ABSTRACT

Adult zebrafish (Danio rerio) have a remarkable ability to recover function after an injury to the brainstem spinal cord. The molecular and cellular mechanisms underlying this phenomenon are not fully understood. To enable investigation of these mechanisms we have developed an in vitro neural system from the adult zebrafish brainstem, which can be maintained under serum-containing and serum-free conditions. The cultures are predominantly neuronal in phenotype and contain glial and stem progenitor cells. Various stages of neuronal differentiation are observed among both neuronal and non-neuronal populations. Quantitative morphological results revealed typical neural growth over a two-week period. We argue that our novel brainstem culture model offers a powerful tool for the study of neural repair, regeneration, and repair in the adult zebrafish brainstem system.

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