Significance of planarians essay sample

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Planarians are non-parasitic flatworms of the phylum Platyhelmintes found in fresh water like ponds or lakes. In my research paper I focused on Schmidtea mediterranea planarians found in Tusinia and southern Europe which are extensively used as a model organism to study development and regeneration process (Newmark 2012). Schmidtea mediterranea are chosen by researcher in molecular biology and genetics field because these planarians have diploid chromosomes and are hermaphrodite i. e. having both asexual and sexual component (Sànchez 2005). Planarians have unique ability to regenerate complete individual from a tiny body part i. e. small part of the planarian is able to regenerate the whole new body. The ability of regeneration is due to the presence of the somatic stem cells present neoblasts spread throughout the body of planarian (Rossi 2003).

Planarians can survive starvation by selective destruction and de-differentiation of body organs with reduction degradation in their shape. Researcher and scientist Alejandro Sánchez Alvarado at the University of Utah School of Medicine in Salt Lake City believes that uncovering the basic theory behind the regeneration in planarian can help in better understanding of human stem cells, although there will be some differences in genomics and morphology (Ledford 2007). Researchers believe that studying lower organisms like planarian give clues about human stem cells, applying various techniques like blocking and manipulating the gap junctions that permit the flow of small molecules and ions between the cells. These studies are done to observe their effect on the regenerative abilities and reservoir of stem cells in the neoblasts.

Reference:

Ledford, Heidi. (2007, August 2), Flatworms’ starring role in stem-cell research. Nature 448, 522.