Evaluating the Benefits of Selected Medicinal Herbs on the Regeneration Rate of D. dorotocephala

Cho, Agnes (School: Osbourn Park High School)

This study tested the effects of three medicinal herbs: turmeric (Curcuma longa), sprout barley (Hordeum vulgare), and ginseng (Panax ginseng). A variety of medicinal herbs have been used to treat chronic illnesses and diseases, rather than life-threatening ones, and many have been scientifically proven to heal the body better than modern pharmaceuticals. For this study, twenty D. dorotocephala, a species of self-regenerating flatworms, were split into four groups for each medicinal herb with a sample size of five for each herb. All groups were housed in Petri dishes with 2cm in height of dechlorinated water. After specimens were laterally severed to stimulate the regeneration process, they were fed a mixture of their respective type of medicinal herb and cooked egg yolk every five days for a period of three weeks. Measurements were taken weekly and results were compared to the control and each medicinal herb. The data were then averaged and concluded that turmeric allowed the flatworms to regenerate the fastest. The results of this experiment could be applied to stem cell research with implications for human treatment. Flatworms such as D. dorotocephala are able to regenerate a new set of eyes and a pharynx from scratch in just a few weeks. Applying a combination of the study results and the worm's powerful abilities with the benefits of medicinal herbs to human health could potentially advance medical developments concerning stem cells, such as growing back a limb or treating neurodegenerative diseases.