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**Investigating the role of two major dietary flavonoids in zebrafish model of pentylenetetrazol-induced convulsions****Pallavi Sharma<sup>1,2</sup>, Savita Kumari<sup>1</sup> and Damanpreet Singh<sup>1,2</sup>**<sup>1</sup>Institute of Himalayan Bioresource Technology – CSIR, India<sup>2</sup>Academy of Scientific and Innovative Research, India

Epilepsy is a common neurological disorder having complex underlying causes and affecting a considerable population worldwide. In the last few decades zebrafish (*Danio rerio*) a small fresh water fish has been proven to be an attractive and convenient research model species. Flavonoids, also known as vitamin P are the polyphenolic secondary metabolites present in the majority of plants. They have shown neuroprotective activity in several animal models of epilepsy and other neurological disorders. Apart from their antioxidant potential, phytoflavonoids act on a number of targets viz. GABAergic system, opioid receptors, NMDA (N- methyl-D-aspartate) receptors, show a modulatory effect on voltage-gated sodium channels, calcium channels and potassium channels. Hence, in the present study two pharmacologically active dietary flavonoids hesperidin and naringenin were tested against PTZ (Pentylenetetrazole) induced seizures in 7dpf (days post fertilization) zebrafish larvae. Larvae were preincubated with the respective flavonoid for two hours and then exposed to a chemoconvulsant, PTZ. Pre-treatment with naringenin and hesperidin was found out to effective in increasing the seizure latency and caused a marked reduction in hyperactive responses as shown by decrease in total distance travelled and mean speed. It was also observed that both the flavonoids were able to modulate the expression of genes involved in pathogenesis of epilepsy.

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