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Anti-epileptic evaluation of coumarin extract isolated from *Eclipta alba* in acute zebra fish and rodent models of epilepsy

Suraj Muke

University of Medicine, Albania

Epilepsy is a type of brain disorder characterized by seizures. An epileptic seizure is caused by brief, excessive and abnormal discharge of nerve cells in the brain. The ideal treatment for epilepsy should encompass aspects like minimal seizure occurrence and maximum therapeutic efficacy with least side effects. *Eclipta alba* (EA) has been used in traditional system of medicine as well as by traditional healers to treat epilepsy since ancient times. Coumarin extract was isolated from EA leaves. The aim of the present study was to evaluate coumarin extract in acute zebrafish and rodent models of epilepsy for its anticonvulsant activity. Coumarin extract was initially evaluated in pentylenetetrazole (PTZ)-induced seizures in zebrafish model of epilepsy. The experimental findings obtained from the zebra fish model evinced that coumarins had potent anticonvulsant activity. To further ascertain the anticonvulsant activity of coumarins, the extract was evaluated in rodent models. Pretreatment of coumarin extract at three dose levels exhibited significant delay in hind limb extension (HLE) compared to control group in maximal electroshock (MES) induced convulsions in rats. In PTZ model, treatment with coumarin extract produced significant prolongation of onset of myoclonic jerk, clonic seizure, HLE & exhibited a complete protection against mortality. The results demonstrated the anticonvulsant effect of the coumarin extract in zebrafish as well as rodent model of epilepsy. These studies endorse the antiepileptic effect of coumarin extract and its inclusion as a drug or drug adjuvant along with available drugs in management of epilepsy.

surajmuke1@gmail.com