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## Nature's own remedies: Allium cepa - does it offer new options for the treatment of epilepsy?

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number of processes are thought to contribute to the Adevelopment of epilepsy including increased excitatory synaptic transmission, neuronal cell death and development of aberrant innervations pattern in part arising from axonal growth. Recent findings indicate that adhesion molecules and their receptors play an important role in these processes and contribute significantly in epileptogenesis. Among the adhesion molecules, cell surface glycoproteins CD44 and CD90 are reported to be up-regulated after neuronal injury or epilepsy. Focus of this study was to evaluate the effect of classical anticonvulsants i.e., diazepam and phenytoin and an essential oil of Allium cepa AC-31B on the expression of these markers in the PTZ-induced model of epilepsy. Here we tested the hypothesis that anticonvulsant therapy that can reduce the level of CD44/CD90 expression in vivo model of epileptogenesis can be used to control the underlying

process of epileptogenesis. Targeting CD44/CD90 might be a novel therapeutic target in neurological disorders. Mice weighing 20-25 gm were subjected to PTZ-induced kindling and their seizure-related behaviors were monitored. Once stage 4 seizures were prominent, animals were sacrificed and the brain samples were collected for the determination of CD44/CD90 expression. The results revealed that AC-31B not only halts the development of epileptogenesis in PTZ-kindled mice but also significantly reduced the expression of CD44/ CD90. Based on these observations, we suggest that AC-31B can be effectively used to control the underlying pathology of epileptogenesis. This finding uncovers a potential effect of AC-31B in epileptogenesis and may provide a new therapeutic target that can be harnessed for the prevention of epilepsy development or progression.

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