

SHORT COMMUNICATION

Phytochemical investigation characterisation and anticonvulsant activity of *Ricinus communis* seeds in mice

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The ethanol extract of the dried, powdered hull portion of *Ricinus communis* seeds indicated the presence of alkaloids, steroids, flavonoids, glycosides and phenolics, amongst others. Ricinine was isolated as an active constituent and characterised by various chemical and spectroscopic techniques. The anticonvulsant activity of the isolated compound was evaluated in mice using the maximal electroshock (MES) model. The isolated compound at a dose of 60 mg kg^{-1} body weight, orally, significantly (p < 0.05) reduced the extensor tonus phase of convulsion by MES-induced seizures in albino mice when compared with the standard drug diazepam (30 mg kg^{-1} body weight, orally). The results of this study support the folkloric use of the plant in epileptic remedies.

Keywords: Ricinus communis; anticonvulsant activity; castor oil plant; ricinine

1. Introduction

Epilepsy is a very common disorder characterised by seizures resulting from episodic neuronal discharges of brain and affects 0.5–1% of the population. The usefulness of traditional medicinal plants against epilepsy is developing as an excellent field of research. *Ricinus communis* (family Euphorbiaceae) is found in almost all tropical and subtropical countries. China, USA, Brazil, Former Soviet Union and Thailand are the main producers of the plant. Plant may group into shrubs and trees producing large seeds and annual herbs producing smaller seeds. Castor seeds consist of 75% kernel and 25% hull (Kokate et al., 2002; Evans, 2002). Kernels mostly contain oils (fatty acids and triglycerides) and hull is rich in phosphorous content, mineral acids, an alkaloid ricinine, resins, pigments, enzymes and other constituents (Wealth of India, 2003).

Almost all parts of the plant *Ricinus communis* are useful. Some important activities are: anti-inflammatory (Banerjee, Mukherjee, Bandopadhyay, Mukharjee, & Sikdar, 1990; Ilavarasan, Mallika, & Venkataraman, 2006), antimicrobial (de la Paz et al., 2006; Khan, Ndaalio, Nkunya, & Wevers, 1978), insecticidal

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