

UNIVERSITI TEKNOLOGI MARA

**IN-VIVO STUDY ON THE ANTICONVULSANT
ACTIVITY OF THE ENDOPHYTIC FUNGI
EXTRACT FROM LOCAL PLANT**

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ABSTRACT

Epilepsy is a chronic and progressive brain disorder which is characterized by occurrence of periodic and unpredictable seizures attack which may be originating from both or only partial hemisphere of the brain. It can affect anyone regardless to age, social, racial, sex or geographical border. As in developing countries where modern drug therapy is hard to be obtained, most of the people still rely on traditional healer for any ailments they faced and even in some countries traditional healers are the person given the authority to treat epilepsy. There are a large variety of synthetic antiepileptic drugs available but since most of the therapy require prolong duration of treatment and the common practice of polypharmacy in prescribing antiepileptic drugs which increases the possibility of toxicity development, there are called to run a research on developing a better and safer medicines from potential medicinal plant. The fungi extract used in this study was isolated from local medicinal plant and recent study revealed its cytotoxicity properties against cancer cells. Upon exposure to acute doses of this fungi extract, the onset of seizure attack, peak time and death time of the mice which injected with picrotoxin were delayed. The picrotoxin was used to induce the convulsion attack and administered intraperitoneally.

CHAPTER 1

INTRODUCTION

1.1 GABA Receptor

GABA is the major inhibitory neurotransmitter in the mammalian CNS. Release of GABA correlated with the frequency of nerve stimulation. It mediates the inhibitory action of local interneurons in the brain. GABA also mediates presynaptic inhibition within the spinal cord as well as inhibition within the cerebral cortex and between the caudate nucleus and the substantia nigra. In general, activation of GABAergic system causes neuronal inhibition and prevents epileptiform activity therefore any alteration on GABA function can cause seizures. As a major inhibitory neurotransmitter in the human CNS, GABA has been a target of intensive scrutiny for its role in human epilepsy.

Some receptors of neurotransmitter form agonist-regulated, ion-selective channels in the plasma membrane, which termed as ligand-gated ion channel. They convey their signals by altering the cell's membrane potential or ionic composition. All of them are multi-subunit proteins which control the form of the channel wall and control the opening and closing of the channel.

The GABA receptors are divided into two subtypes that have the ability to directly modulate membrane excitability. GABA_A receptor is a ligand-gated chloride ion channel, an “ionotropic receptor” that is opened after release of GABA from