

Perbaikan neuron hipokampus pascahipoksia serebri dengan penggunaan ekstrak air akar tanaman akar kucing = The improvement of hippocampus neuron post serebral hypoxia with aqueous extract of *Acalypha indica* Linn Root.

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Abstrak

[ABSTRAK

Latar belakang : *Acalypha indica* Linn. merupakan tanaman yang mudah didapat., tumbuh sepanjang tahun dan bisa ditemukan di kebun, halaman rumah maupun tempat-tempat pembuangan sampah. Semua bagian dari tanaman ini bisa digunakan dalam pengobatan tradisional untuk menangani berbagai masalah kesehatan. Pada penelitian sebelumnya didapatkan data bahwa ekstrak *Acalypha indica* Linn. terbukti memiliki efek sebagai neuroproteksi dan neuroterapi pada neuromuscular junction jaringan katak dan mampu menghambat efek neurotoksik pada jaringan katak. Oleh karena itu, ekstrak air akar *Acalypha indica* Linn. bisa mempengaruhi perbaikan neuron hipokampus pascahipoksia serebri.

Tujuan : untuk menganalisa kerusakan sel neuron hipokampus pascahipoksia serebri setelah pemberian ekstrak air akar *Acalypha indica* Linn.

Metode penelitian : 30 ekor tikus Sprague Dawley terbagi secara acak dalam enam kelompok. Kelompok hipoksia, tikus dimasukkan ke dalam sungkup hipoksia yang mengandung gas campuran (O₂ 10 % dan nitrogen 90 %) selama tujuh hari, untuk kelompok reoksigenasi tikus dibiarkan menghirup udara bebas setelah perlakuan hipoksia. Tiga kelompok terapi lainnya setelah perlakuan hipoksia tikus kemudian dilanjutkan dengan pemberian ekstrak air akar *Acalypha indica* Linn pada dosis 300, 400 dan 500 mg/kg BB selama tujuh hari. Kriteria penilaian yang digunakan dalam studi ini adalah jumlah sel rusak neuron hipokampus dengan mengamati : bentuk sel, ada tidaknya kondensasi kromatin, piknotik dan rasio sitoplasma dengan inti setelah pewarnaan hemaktosilin eosin.

Hasil : ekstrak air akar *Acalypha indica* Linn. pada dosis 400 dan 500 mg/kg BB secara signifikan mampu memperbaiki kerusakan sel neuron (efek neuroterapi) hipokampus pascahipoksia serebral (p = 0,01).

Kesimpulan : ekstrak air akar *Acalypha indica* Linn memiliki efek neuroterapi pada dosis 400 dan 500 mg/kg BB.

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ABSTRACT

Background : *Acalypha indica* Linn is a common herb which can easily be found elsewhere in Indonesia, All the parts of plants are used in various traditional therapy for some diseases. Previous studies showed that *Acalypha indica* Linn extracts have neuro-protective and neuro-therapy effects on neuromuscular junction and inhibit neurotoxin on isolated frog tissues. Thus, administration of aqueous extracts of *Acalypha*.

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Objective : To investigate the effects of aqueous extracts of *Acalypha indica* Linn root on hippocampus neuron injury after cerebral hypoxia in the rat.

Methods : Thirty male Sprague Dawley with 200-250 gr Body weight of rats were divided into six groups randomly. The rats were housed in hypoxic chamber containing gas mixture of 10 % O₂ and 90 % N₂ for seven days, followed by administration of 300, 400 and 500 mg/kg BW aqueous extracts of *A. indica* Linn root for seven days.. The other group was exposed to room air after hypoxia. The parameters measured were hippocampal cell damage ie : the quantity and type of hippocampal cell, chromatin condensation, pycnotic and cytoplasm nucleus ratio using hematoxyline eosin staining.

Result : The aqueous extracts of *A. indica* Linn root of 400 and 500 mg/kg BW improve hippocampus neuron injury (neurotherapy effect) alter cerebral hypoxia significantly ($p = 0,01$).

Conclusion : The aqueous extracts of *A. indica* Linn roots have neurotherapy effects on hippocampal neuron after cerebral hypoxia of 400 and 500 mg/kg BB.

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