

ABSTRAK

Fitria, Erna Nur. 2017. ***Terapi Pasca-Stroke Iskemik Melalui Peningkatan CXCR-4 (Chemokine Co-Receptor-4) Menggunakan Ekstrak Fucoidan dari Sargassum sp. pada Hewan Coba Model Stroke Iskemik***. Tugas Akhir, Program Studi Kedokteran, Fakultas Kedokteran, Universitas Brawijaya. Pembimbing: (1) Prof. Dr. dr. Yuyun Yueniwati P. W., M. Kes., Sp. Rad(K) (2) dr. Badrul Munir Sp.S

Stroke iskemik merupakan penyakit terganggunya aliran darah otak sehingga terjadi kerusakan jaringan otak yang menyebabkan cacat fisik, mental, bahkan kematian. Terapi stroke saat ini hanya bersifat simptomatis, bukan rehabilitatif terhadap kecacatan yang timbul pasca stroke iskemik. *Sargassum sp.* merupakan jenis alga cokelat yang banyak mengandung fucoidan sehingga berpotensi menjadi agen terapi pasca stroke iskemik. Fucoidan dapat meningkatkan ekspresi *Chemokine Co-Receptor-4* (CXCR-4) pada permukaan *Mesenchymal stem cell* (MSC) secara *in vitro* sehingga dapat memicu terjadinya mobilisasi MSC menuju area kerusakan otak. Penelitian ini didesain menggunakan metode *Randomized Post Test Only Controlled Group Design* dengan model tikus wistar yang diinduksi stroke iskemik. Hasil uji FTIR menunjukkan ekstrak *Sargassum sp.* mengandung fucoidan. Pengamatan pada imunohistokimia menunjukkan peningkatan hasil ekspresi CXCR-4 secara signifikan ($P < 0,05$) dengan rerata P1 270%/10LP, P2 300%/10LP, dan P3 320%/10LP. Kesimpulan penelitian ini adalah pemberian terapi fucoidan dapat meningkatkan ekspresi CXCR-4 pada jaringan otak tikus wistar model stroke iskemik.

Kata kunci : stroke iskemik, fucoidan, Mesenchymal Stem Cell (MSC), Chemokine Co-Receptor-4 (CXCR-4)

ABSTRACT

Fitria, Erna Nur. 2017. ***Post Ischemic Stroke Therapy by Increasing CXCR-4 (Chemokine Co-Receptor-4) using Fucoidan Extract from Sargassum sp. in Ischemic-stroke-induced Mice.*** Final Assignment, Medical Program, Faculty of Medicine, Universitas Brawijaya. Pembimbing: (1) Prof. Dr. dr. YuyunYueniwati P. W., M. Kes., Sp. Rad(K) (2) dr. BadrulMunirSp.S

Ischemic stroke is a disease of brain vascular, which affects brain tissue and can lead to physical and mental morbidities, and also death. Nowadays, stroke is only treated symptomatically, while morbidities of the disease remains unrehabilitated. Sargassum sp. is one kind of brown algae, which contains fucoidan--a potential therapy agent for post ischemic stroke. Fucoidan increases Chemokine Co-Receptor-4 (CXCR-4) expression in Mesenchymal stem cells (MSC) surfaces in vitro, which induces MSC to brain damage area. This experimental study was designed using Randomized Post Test Only Controlled Group Design and was conducted in ischemic-stroke-induced mice. The FTIR test shows that Sargassum sp. extract used in this study contains fucoidan. Immunohistochemistry test shows an increased CXCR-4 expression significantly ($p < 0.05$), with the means of the result being P1 270%/10LP, P2 300%/10LP, and P3 320%/10LP. The conclusion of this study is that fucoidan can increase CXCR-4 expression in the brain cells of ischemic-stroke-induced mice.

Keyword : ischemic stroke, fucoidan, Mesenchymal Stem Cell (MSC), Chemokine Co-Receptor-4 (CXCR-4)