DAFTAR ISI

Halaman

HALAMAN JUDUL i
HALAMAN SAMPUL DALAM ii
LEMBAR PERSETUJUAN iii
SURAT PERNYATAAN iv
LEMBAR PENGESAHAN v
KATA PENGANTAR vi
RINGKASAN viii
ABSTRACT x
DAFTAR ISI xi
DAFTAR GAMBAR xiv
DAFTAR TABEL xv
DAFTAR LAMPIRAN xvi
DAFTAR SINGKATAN xvii
BAB I. PENDAHULUAN 1
1.1 Latar Belakang 1
1.2 Rumusan Masalah 5
1.3 Tujuan Penelitian 5
1.4 Manfaat Penelitian 6
BAB II. TINJAUAN PUSTAKA 7
2.1 Stroke 7
2.1.1 Stroke Iskemik 7
2.1.1.1 Epidemiologi 7
2.1.1.2 Etiologi 7
2.1.1.3 Patofisiologi 7
2.1.2 Stroke Haemoragik 8

2.1.2.1 Etiologi 8
2.2 Gangguan Kognitif 9
2.3 Eritropoietin 9
2.3.1 Struktur Kimia Eritropoietin 9
2.3.2 Mekanisme Anti Apoptosis Eritropoietin 10
2.3.3 Mekanisme Angiogenesis Eritropoietin..... 12
2.3.4 Eritropoietin pada Hewan Induksi Stroke Iskemik ... 14
2.3.5 Eritropoietin pada Manusia 15
2.4 Metode Pengujian Gangguan Kognitif Stroke Iskemik..... 16
2.4.1 *Morris Water Maze* (MWM)..... 16
2.4.2 *Barnes Maze* (BM) 17
2.4.3 *Radial Arm Water Maze* (RAWM)..... 17
2.4.4 *Novel Object Recognition* (NOR)..... 18
2.4.5 *Fear Conditioning* (FC) 18
2.4.6 *IntelliCage and Touch Screen*..... 19
2.4.7 Uji *Y-maze* (*spontaneous alternation*) 19
2.4.8 Uji Y *maze* (Pengamatan Kecepatan Belajar) 19
BAB III. KERANGKA KONSEPTUAL 21
3.1 Alur Kerangka Konseptual 21
3.2 Uraian Kerangka Konseptual 22
3.3 Hipotesis 23
BAB IV. METODE PENELITIAN..... 24
4.1 Bahan dan Alat 24
4.1.1 Bahan 24
4.1.2 Alat..... 24
4.2 Sampel Penelitian 25
4.3 Metode Penelitian..... 26
4.3.1 Rancangan Penelitian..... 26

4.3.2 Penyiapan Obat 27
4.3.3 Tahapan Percobaan 27
a. Pembuatan Model Stroke Iskemik 27
b. Pemberian *Recombinant Human Erythropoietin* . 29
a. Uji Fungsi Kognitif (*Y Maze apparatus*) 30
4.3.4 Analisis Statistik 33
4.4 Definisi Operasional 33
4.4 Etik Penelitian 33
4.5 Lokasi dan Waktu Penelitian 33
BAB V. HASIL PENELITIAN 34
BAB VI. PEMBAHASAN 37
BAB VII. KESIMPULAN DAN SARAN 47
DAFTAR PUSTAKA 48
Lampiran 60

DAFTAR GAMBAR

Gambar **Halaman**

2.3.1 Urutan Asam Amino dan Struktur Eritropoietin 10
2.3.2 Mekanisme EPO sebagai antiapoptosis 11
2.3.3 Jalur angiogenesis akibat induksi hipoksia 13
4.3.1 Kerangka Operasional Rancangan Penelitian 26
4.3.3 Susunan Pembuluh Arteri Mencit..... 29
4.3.3.1 Gambaran Penggunaan *Y Maze Apparatus* 32
4.3.3.2 *Timeline Operasional*..... 32
5.1 Pengaruh EPO terhadap fungsi kognitif hewan coba 36

DAFTAR TABEL

Tabel **Halaman**

V.1 Nilai rata-rata % *correct choice*……..……...34

DAFTAR LAMPIRAN

Lampiran **Halaman**

1. Sertifikat Kelaikan Etik 58
2. Tabel Hasil Respon % *Correct Choice* Y Maze 59
3. Analisis data masing-masing kelompok 62
4. Rerata berat badan hewan coba 70
5. Persentase perubahan berat badan hewan coba 70
6. Grafik Rerata berat badan hewan coba 71
7. Grafik Persentase perubahan berat badan hewan coba 71

DAFTAR SINGKATAN

AMPA = *Amino - 3 - hydroxy - 5 - metil - 4 – propionate*

ATP = *Adenin Tri Phosphate*

BAX = *Bcl-2 Associated X Protein*

BCL-2 = *B-Cell Lymphoma – 2*

BDNF = *Brain Derived Neurotrophic Factor*

BM = *Barnes Maze*

CSF = Cairan Serebrospinal

EPO = Eritropoietin

EPOR = Eritropoietin Reseptor

FC = *Fear Conditioning*

HIF = *Hypoxia Induced Factor*

JAK-2 = *Janustyrosine kinase – 2*

KTM = *Ketamine*

LUCCAO = *Left Unilateral Common Carotid Artery Occlusion*

MAPK = *Mitogen Activated Protein Kinase*

MWM = *Morris Water Maze*

NIHSS = *National Institutes of Health Stroke Scale*

NMDA = *N-methyl-d-aspartate*

NOR = *Novel Object Recognition*

P13K/AKT = *Phosphatidylinositrol-3-kinase / protein kinase B*

RAWM = *Radial Arm Water Maze*

rH-EPO = *Recombinant Human Erythropoietin*

SSP = Sistem Saraf Pusat

STAT-5 = *Signal Transducer and Activator of Transcription* 5

VEGF = *Vascular Endothelial Growth Factor*

XYLA = *Xylazine*