INTISARI

Etlingera merupakan salah satu genus tumbuhan dari famili Zingiberaceae yang memiliki jumlah spesies besar dan potensi yang menarik. Salah satunya adalah *E. rubroloba* AD Poulsen. Spesies ini merupakan tanaman endemik ditemukan di Sulawesi Tenggara, dimana potensi genus tanaman ini sangat menarik karena memiliki khasiat yang bervariasi sebagai obat tradisional. Secara empiris masyarakat setempat menggunakan tanaman ini untuk meningkatkan daya tahan tubuh, asam urat dan penghilang nyeri di persendian. Tanaman ini belum pernah dilaporkan sebelumnya. Penelitian ini dilakukan isolasi, identifikasi struktur dan uji aktivitas penangkap radikal bebas DDPH dan penghambat aktivitas enzim *x*antin oksidase secara *in vitro*. Uji aktivitas dilakukan terhadap ekstrak metanol dan senyawa hasil isolasi.

Batang *E. rubroloba* diekstraksi menggunakan metode maserasi dengan menggunakan pelarut metanol, kemudian dilanjutkan dengan proses Kromatografi Kolom Vakum (KKV) untuk pemisahan senyawa lebih sederhana dan memudahkan pemisahan senyawa ketahap selanjutnya. Fraksi yang didapatkan dari hasil KKV dilanjutkan ke proses pemurnian menggunakan metode Kromatografi Radial (KR). Isolat yang didapatkan kemudian dielusidasi struktur menggunakan teknik spektroskopi meliputi NMR (^{1}H-NMR, ^{13}C-NMR, DEPT, HSQC), FTIR dan GC-MS. Aktivitas Biologi ekstrak dan isolat dievaluasi terhadap DPPH sebagai penangkal radikal bebas dan daya hambat enzim xantin oksidase

Hasil Identifikasi struktur senyawa isolat diketahui bahwa BR1 adalah *bis (2-ethylhexyl) phthlate* ($C_{24}H_{38}O4$), BR2 adalah *Sinaphyl alcohol diacetate* ($C_{15}H_{18}O_6$), BR3 adalah Stigmasterol ($C_{29}H_{48}O$) dan BR4 adalah *(E)-4(3-hydroxyprop-1en-1-yl)-2-6-dimethoxyphenyl acetate* ($C_{13}H_{16}O_5$). Hasil uji aktivitas penangkap radikal bebas DPPH (IC_{50}) adalah ekstrak metanol 41,61±0,15 µg/mL, (sangat kuat) *bis (2-ethylhexyl) phthlate* 665,69±2,45 µg/mL (lemah), *Sinaphyl alcohol diacetate* 182,80±1,28 µg/mL (sedang), *Stigmasterol* 402,39±5,16 µg/mL (lemah), *(E)-4(3-hydroxyprop-1en-1-yl)-2-6-dimethoxyphenyl acetate* 257,77±3,16 µg/mL (lemah) dan vitamin C 21,41±0,63 µg/mL (sangat kuat) sebagai kontrol. Hasil uji aktivitas penghambat enzim xantin oksidase (IC_{50}) adalah ekstrak metanol 47,06±1,04 µg/mL (sangat kuat), *bis (2-ethylhexyl) phthlate* 130,83±7,39 µg/mL (sedang), *Sinaphyl alcohol diacetate* 150,00±0,29 µg/mL (sedang), *Stigmasterol* 97,12±2,08 µg/mL (kuat), *(E)-4(3-hydroxyprop-1en-1-yl)-2-6-dimethoxyphenyl acetate* 91,61±0,86 µg/mL (kuat) dan Allopurinol 39,84±0,95 µg/mL (sangat kuat) sebagai kontrol standar.

Kata kunci; *E. rubroloba*, radikal bebas DPPH, xantin oksidase, spektroskopi, senyawa isolat

ABSTRACT

Etlingera is a plant genus from the Zingiberaceae family, which has a large number of species and interesting potential. One of them is *E. rubroloba* AD Poulsen. This species is an endemic plant found in Southeast Sulawesi, where the potential of this plant genus is very interesting because it has various properties as traditional medicine. Empirically, the local community uses this plant to increase endurance, uric acid and reduce pain in a decrease. This plant has never been reported before. This research carried out the isolation, structure identification, and activity test of DDPH free radical scavenger and inhibitor of xanthine oxidase enzyme activity by invitro. The activity test was carried out on the methanol extract and isolated compounds.

Etlingera rubroloba stem was extracted using the maceration method using methanol solvent, followed by the Column Vacuum Chromatography (CVC) process for simpler compound separation to facilitate the separation of the compounds to the next step. The fraction obtained from the CVC results was continued to the separation process of purification using the Radial Chromatography (KR) method. The isolates obtained were then elucidated using spectroscopic techniques including NMR (^{1}H-NMR, ^{13}C-NMR, DEPT, HSQC, HMBC), FTIR and GC-MS. Biological activities of extracts and isolates were evaluated against DPPH as free radical scavengers and inhibition of xanthine oxidase enzymes.

The identification results of the structure of the isolate compounds known that BR1 is bis (2-ethylhexyl) phthlate ($C_{24}H_{38}O_4$), BR2 is Sinaphyl alcohol diacetate ($C_{15}H_{18}O_6$), BR3 is Stigmasterol ($C_{29}H_{48}O$) and BR4 is (E) -4 (3-hydroxyprop-1en- 1-yl) -2-6-dimethoxyphenyl acetate ($C_{13}H_{16}O_5$).The results of the DPPH free radical scavenger activity test (IC_{50}) were methanol extract 41.61±0.15 µg/mL (very strong), bis (2-ethylhexyl) phthlate 665.69±2.45 µg/mL (weak), Sinaphyl alcohol diacetate 182.80 ± 1.28 µg/mL (medium), Stigmasterol 402.39±5.16 µg/mL (weak), (E) -4 (3-hydroxyprop-1en- 1-yl) -2-6-dimethoxyphenyl acetate 257.77±3.16 µg/mL (weak) and vitamin C 21.41±0.63 µg/mL (very strong) as control. The results of the xanthine oxidase (IC_{50}) enzyme inhibitor activity test were methanol extract 47.06 ±1.04 µg/mL (very strong), bis (2-ethylhexyl) phthlate 130.83±7.39 µg/mL (medium), Sinaphyl alcohol diacetate 150.00 ± 0.29 µg / mL (medium), Stigmasterol 97.12±2.08 µg/mL (strong), (E) -4 (3-hydroxyprop-1en- 1-yl) -2-6-dimethoxyphenyl acetate 91.61±0.86 µg/mL (strong) and Allopurinol 39.84±0.95 µg/mL (very strong) as standard control.

Keywords; *E. rubroloba*, DPPH, xanthine oxidase, spectroscopy, isolate compounds.