ABSTRAK

Latar belakang. Tanaman Pulai mengandung metabolit sekunder seperti fenol, flavonoid, tanin, alkaloid dan steroid. Adapun senyawa flavonoid pada tanaman pulai yang telah diisolasi yaitu *kaempferol, quercetin, isorhamnetin dan lyoniresinol. Quercetin* diketahui memiliki sifat fotoprotektif terhadap sinar UVB. Penelitian ini bertujuan untuk mengetahui kadar fenol total, kadar flavonoid total dan nilai SPF dari ekstrak daun dan kulit batang pulai (*Alstonia scholaris* (L.) R.Br.).

Metode. Metode ekstraksi yang digunakan pada penelitian ini adalah metode maserasi dengan menggunakan pelarut metanol. Penentuan kadar fenol total menggunakan spektrofotometri UV-Vis pada panjang gelombang 725 nm dengan senyawa pembanding asam galat. Prinsip penentuan kadar fenol total yaitu dengan reagen *Folin-Ciocalteau* yang ditandai dengan adanya warna biru pada larutan. Penentuan kadar flavonoid total ditentukan menggunakan spektrofotometri UV-Vis pada panjang gelombang 430 nm dengan senyawa pembanding kuersetin. Prinsip penentuan kadar flavonoid total yaitu dengan terbentuknya senyawa kompleks yang stabil antara kuersetin dengan $AlCl_3$. Penentuan nilai SPF ditentukan menggunakan spektrofotometri UV-Vis pada panjang gelombang rentang 290-320 nm.

Hasil. Dari hasil penelitian kadar fenol total pada ekstrak daun dan kulit batang pulai berturut-turut yaitu 11,47 mg GAE/g ekstrak dan 11,74 mg GAE/g ekstrak. Kadar flavonoid total ekstrak daun dan kulit batang pulai berturut-turut yaitu 4,10 mg QE/g ekstrak dan 1,53 mg QE/g ekstrak. Nilai *Sun Protection Factor* ekstrak daun dan kulit batang pulai dengan konsentrasi tertinggi pada 500 ppm yaitu 9,18(maksimal) dan 7,36(ekstra).

Kesimpulan. Terdapat korelasi positif antara kadar flavonoid total dan nilai SPF ekstrak daun dan kulit batang pulai. Semakin tinggi kadar flavonoid total maka akan semakin tinggi pula nilai SPFnya.

Kata kunci : Tanaman Pulai (*Alstonia scholaris* (L.) R.Br.), Fenol Total, Flavonoid Total, *Sun Protection Factor*

ABSTRACT

Background. Pulai plant contains secondary metabolites such as phenols, flavonoids, tannins, saponins, alkaloids and triterpenoids. The flavonoids found in the isolated Pulai plant are kaempferol, quercetin, isorhamnetin and lyoniresinol. Quercetin is known to have photoprotective properties against UVB rays. This study aims to determine the total phenolic content, total flavonoid content and SPF value of the extracts from the leaves and bark of Pulai (Alstonia scholaris (L.) R.Br.).

Method. The extraction method used in this study is the maceration method using methanol as a solvent. Determination of total phenol content using UV-Vis spectrophotometry at a wavelength of 725 nm with gallic acid as a comparator. The principle for determining total phenolic content is the Folin-Ciocalteau reagent which is indicated by the presence of a blue color in the solution. Determination of total flavonoid content was determined using UV-Vis spectrophotometry at a wavelength of 430 nm with a comparator compound quercetin. The principle of determining total flavonoid content is the formation of a stable complex compound between quercetin and $AlCl_3$. Determination of the SPF value was determined using UV-Vis spectrophotometry at a wavelength in the range of 290-320 nm.

Results. From the research results, the total phenolic content of the leaf extract and bark of Pulai stems were 11.47 mg GAE/g extract and 11.74 mg GAE/g extract. The total flavonoid content of the leaf extract and bark of Pulai stems were 4.10 mg QE/g extract and 1.53 mg QE/g extract, respectively. The Sun Protection Factor value of the extract of the leaves and bark of the Pulai stem with the highest concentration was at 500 ppm, namely 9.18 (maximum) and 7.36 (extra).

Conclusion. There was a positive correlation between total flavonoid content and the SPF value of Pulai leaf and bark extracts. It means that if the total flavonoid content getting higher, so does the SPF value.

Kata kunci : Pulai Plant (*Alstonia scholaris* (L.) R.Br.), Total Phenol, Total Flavonoid, *Sun Protection Factor*