

Kandungan alkaloida kulit batang *Actinodaphne pruinosa* Nees, *A. sphaerocarpa* (BI) Nees dan daun *Cryptocarya ferrea* BI serta uji bioaktivitas terhadap *Plasmodium falciparum*, *Artemia salina* Leach, dan sel murine p-388

Tiah Rachmatiah, author

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Abstrak

Penelitian ini dilakukan untuk menyelidiki kandungan alkaloida dari kulit batang *Actinodaphne pruinosa* Nees, *A. sphaerocarpa* (BI) Nees dan daun *Cryptocarya ferrea* BI serta uji bioaktivitas terhadap *Plasmodium falciparum*, *Artemia salina* Leach dan sel murine P-388. Alkaloida diekstraksi menggunakan metode asam basa. Isolasi alkaloida dilakukan dengan cara kromatografi kolom menggunakan silika gel sebagai fasa diam dan campuran diklorometana dan metanol sebagai larutan pengelusi. Struktur molekul dari alkaloida yang diisolasi ditentukan dengan menggunakan data spektroskopi UV, FTIR, ¹H NMR, ¹³C NMR dan MS. Lima alkaloida baru; (+)-(R)-N-(2-hidroksipropil)-lindcarpin (pruinosa A), (+)-(S)-N-(2-hidroksipropil)-lindcarpin (pruinosa B), (+)-(R)-N-(2-hidroksipropil)-laurolitsin (pruinosa C), (+)-(S)-N-(2-hidroksipropil)-Iaurolitsin (pruinosa D) dan (-)-N[?]-desmetil-grisabin, berhasil diisolasi dari kulit batang *A. pruinosa* bersama dengan tujuh alkaloida yang sudah dikenal, lindcarpin, N-metillindcarpin, Iaurolitsin, boldin, (+)-thaligrisin, (-)-dauricin, (-)-0,0-dimetil-grisabin. Laurotetanin, N-metillaurotetanin, isoboldin, actinodaphnin, N-metilactinodaphnin, corydin dan norcorydin diisolasi dari kulit batang *A. sphaerocarpa* serta dua alkaloida lainnya nordicentrin dan dicentrinon diisolasi dari daun *Cryptocarya ferrea*. Ekstrak alkaloida dari kulit batang *A. pruinosa* dan *A. sphaerocarpa* aktif terhadap larva udang *Artemia salina* dengan nilai LC₅₀ berturut-turut 106,5 μg/ml. dan 126,7 μg/mL. Ekstrak alkaloida kulit batang *A. pruinosa* dan senyawa hasil isolasinya; pruinosa A, aktif terhadap sel murine P-388 dengan IC₅₀ berturut-turut 5,1 dan 3,9 μg/mL, sedangkan ekstrak alkaloida *A. sphaerocarpa*, pruinosa B, C, D, dan lindcarpin serta (-)-0,0-dimetil-grisabin tidak aktif dengan IC₅₀ berturut-turut 34,2, 24,0, 38,0, 52,0, 18,0, dan 10,0 μg/mL. Aktivitas terhadap *P. falciparum* dijumpai pada ekstrak alkaloida *A. sphaerocarpa* dengan nilai |650 2,5 x 10⁰ |1g/mL. namun ekstrak alkaloida *A. pruinosa* tidak memperlihatkan aktivitas terhadap *P. falciparum*.

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This work was carried out to investigate alkaloid constituents from the stem bark of *Actinodaphne pruinosa* Nees, *A. sphaerocarpa* (BI) Nees, the leaves of *Cryptocarya ferrea* BI, and their bioactivities against *Plasmodium falciparum*, *Artemia salina* Leach and murine cells P-388. The alkaloids were extracted by acid-base methods and isolated by column chromatography on silica gel and eluted with a mixture of CH₂Cl₂-methanol as a solvent system. The structure of alkaloids were established using spectroscopy data: UV, FTIR, ¹H NMR, ¹³C NMR and MS. Five new alkaloids, (+)-(R)-N-(2-hydroxypropyl)-lindcarpine (pruinosa A), (+)-(S)-N-(2-hydroxypropyl)-lindcarpine (pruinosa B), (+)-(R)-N-(2-hydroxypropyl)-laurolitsine (pruinosa C), (+)-(S)-N-(2-hydroxypropyl)-laurolitsine (pruinosa D) and (-)-N[?]-desmethyl-grisabine were isolated from the stem bark of *A. pruinosa* together with seven known alkaloids, lindcarpine, N-methylindcarpine, laurolitsine, boldine, (+)-thaligrisine, (-)-dauricine, and (-)-0,0-dimethyl-grisabine. Seven known alkaloids, laurotetanine, N-metillaurotetanine, isoboldine, actinodaphnine, N-

methylactinodaphnine, corydine and norcorydine, were isolated from the stem bark of *A. sphaenocarpa* (Bl) Nees, and two another known alkaloids, nordicentrine and dicentrinone, were isolated from *Cryptocarya ferrea*. The crude alkaloid extract of *A. pruinosa* and *A. sphaerocarpa* were active against *Artemia salina* with LCM 106.5 and 126.7 pg/mL respectively. The crude alkaloid extract of *A. pruinosa* and pruinisine A were active against murine cells P-388 with IC₅₀ 5.1 and 3.9 pg/mL respectively. The crude alkaloid extract of *A. sphaerocarpa*, pruinisine B, C, D, lindcarpine, and (-)-0,0-dimethyl-grisabine are inactive against murine cells P-388 with IC₅₀ 34.2, 24.0, 38.0, 52.0, 16.0, and 10.0 µg/mL respectively. The activity against *P. faicparum* was showed by the crude alkaloid extract of *A. sphaerocarpa* with IC₅₀ 2.5 x 10⁻⁵ µg/mL, but no effect was showed by crude alkaloid extract of *A. pruinosa*.