

ABSTRAK

KAJIAN ETNOBOTANI LADA HITAM (*Piper nigrum* L.) DAN POTENSINYA SEBAGAI ANTIKOLESTEROL MELALUI PENDEKATAN *MOLECULAR DOCKING*

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Lada hitam (*Piper nigrum* L.) merupakan rempah yang digunakan dalam berbagai bumbu masakan dan obat karena cita rasa yang pedas dan khasiatnya yang unik. Tanaman ini telah banyak dibudidayakan di Lampung Timur khususnya di Kawasan Cagar Budidaya Lada Hitam dan memiliki nilai budaya serta manfaat medis yang tinggi sebagai pengobatan tradisional termasuk antikolesterol. Penelitian ini bertujuan untuk mendokumentasikan kajian etnobotani lada hitam, mengidentifikasi karakter morfologi, serta potensinya sebagai antikolesterol melalui pendekatan *in silico*. Penelitian dilakukan pada bulan Desember 2024-Februari 2025 di lima desa di sekitar Kawasan Cagar Budidaya Lada Hitam, Lampung Timur yakni Desa Sukadana Baru, Surya Mataram, Catur Swako, Putra Aji 1, dan Putra Aji 2. Penelitian dilakukan dengan metode studi kasus dan teknik pengambilan sampel *snowball sampling*. Tahapan kajian etnobotani melalui wawancara semi-terstruktur dengan masyarakat lokal, tahapan identifikasi dilakukan dengan observasi lada hitam berdasarkan karakter morfologi, sedangkan validasi awal potensi khasiat antikolesterol pada lada hitam dilakukan melalui teknik *molecular docking*. Hasil penelitian etnobotani menunjukkan lada hitam digunakan dalam pengobatan tradisional untuk mengatasi penyakit dan keluhan seperti demam, diabetes, kolesterol tinggi, gangguan pencernaan, radang, infertilitas, nafsu makan, hipertensi, sistem imun, dan nyeri otot. Hasil karakterisasi morfologi menunjukkan sampel dari varietas Natar 1 dan Jambi terpisah dalam klaster berbeda. Hasil *molecular docking* menunjukkan piperin, piperanin, chavicin, dan piperettin menunjukkan potensi sebagai antikolesterol.

Kata kunci: antikolesterol, etnobotani, karakterisasi morfologi, lada hitam (*Piper nigrum* L.), *molecular docking*.

ABSTRACT

ETHNOBOTANICAL STUDY OF BLACK PEPPER (*Piper nigrum* L.) AND ITS POTENTIAL AS AN ANTICHOLESTEROL THROUGH A *MOLECULAR DOCKING APPROACH*

By

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Black pepper (*Piper nigrum* L.) is a spice used in various cooking spices and medicines because of its spicy taste and unique properties. This plant has been widely cultivated in East Lampung, especially in the Black Pepper Cultivation Conservation Area and has high cultural value and medical benefits as a traditional medicine including anticholesterol. This study aims to document the ethnobotanical study of black pepper, identify its morphological character, and its potential as an anticholesterol through *an in silico* approach. The research was conducted in December 2024-February 2025 in five villages around the Black Pepper Cultivation Conservation Area, East Lampung, namely Sukadana Baru, Surya Mataram, Catur Swako, Putra Aji 1, and Putra Aji 2. The research was conducted using case study methods and snowball sampling techniques. The ethnobotanical study was carried out through semi-structured interviews with the local community, the identification of black pepper was carried out by observation of black pepper based on morphological characteristics, while the initial validation of the potential anticholesterol properties of black pepper was carried out through molecular docking techniques. The results of ethnobotanical research show that black pepper is used in traditional medicine to treat diseases and complaints such as fever, diabetes, high cholesterol, indigestion, inflammation, infertility, appetite, hypertension, immune system, and muscle pain. The results of morphological characterization showed that samples from the Natar 1 and Jambi varieties were separated in different clusters. The results of molecular docking showed that piperine, piperanin, chavicin, and piperettin have the potential to be anticholesterol.

Keywords: anticholesterol, black pepper (*Piper nigrum* L.), ethnobotany, *molecular docking*, morphological characterization.