

ABSTRAK

EVIT DESTIYANTI, 2023, *NETWORK PHARMACOLOGY* DAUN TEH HIJAU (*Camellia sinensis* L.) dan SELEDRI (*Apium graveolens* L.) SEBAGAI ANTIDISLIPIDEMIA, SKRIPSI, PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh Dr. apt. Rina Herowati, M.Si. dan apt. Ismi Puspitasari, M. Farm.

Dislipidemia merupakan gangguan endotel dan hilangnya fungsi vasomotor dan bermanifestasi sebagai peningkatan tekanan darah sistemik. Daun teh hijau dan tanaman seledri dapat diprediksi dalam menurunkan kadar kolesterol. Tujuan penelitian ini untuk melihat protein yang dapat terlibat dalam patofisiologi dislipidemia, mengetahui protein molekuler yang dapat diprediksi sebagai target kerja dari dislipidemia oleh senyawa-senyawa daun teh hijau dan seledri, dan untuk mengetahui profil *network pharmacology* kandungan senyawa kimia daun teh hijau dan seledri terhadap protein target dislipidemia.

Penelitian ini menggunakan metode *network pharmacology*. Pengumpulan senyawa kimia daun teh hijau dan tanaman seledri menggunakan KNApSACk, IJAH Analytics, *Dr. Duke's Phytochemical and Ethnobotanical Database*, dan jurnal-jurnal penelitian. Skrining zat aktif terhadap protein target didapatkan dari PubChem. Protein target yang dapat terlibat pada target kerja patofisiologi dislipidemia didapatkan dari KEGG Pathway, dengan memvalidasi nama gen menggunakan String. Identifikasi protein dan gen menggunakan Swiss Target Prediction. Visualisasi *network pharmacology* dari interaksi senyawa protein dan protein-protein menggunakan Cytoscape.

Visualisasi *network pharmacology* membuktikan bahwa protein target APOE dan ABCA1 diprediksi menjadi target kerja dari senyawa-senyawa daun teh hijau dan seledri sebagai antidislipidemia. Senyawa *quercetin*, *kaempferol*, *myricetin*, *cyanidin*, *theophylline*, *apigenin*, *luteolin*, *gallic acid*, *caffeic acid*, dan *hesperetin* membentuk interaksi profil *network pharmacology* dengan protein target prediksi yang terlibat pada jalur patofisiologi dislipidemia.

Kata kunci: dislipidemia, daun teh hijau, seledri, *network pharmacology*, *cytoscape*

ABSTRACT

EVIT DESTIYANTI, 2023, NETWORK PHARMACOLOGY OF GREEN TEA LEAVES (*Camellia sinensis* L.) and CELERY (*Apium graveolens* L.) AS ANTI-DISLIPIDEMIA, THESIS, STUDY PROGRAM S1 PHARMACY, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Guided by Dr. apt. Rina Herowati, M.Sc. and apt. Ismi Puspitasari, M. Farm.

Dyslipidemia is an endotel disorder and loss of vasomotor function and manifests as an increase in systemic blood pressure. Green tea leaves and celery plants can be predicted in lowering cholesterol levels. The purpose of this research is to look at proteins that can be involved in pathophysiology dyslipidemia, knowing molecular proteins predicted as a work target of dyslipidemia by green tea leaves and celery, and to find out the profile of the network pharmacology of the chemical compounds green tea leaves and celery to the target proteins dyslipidemia.

This research uses the method of network pharmacology. Collecting chemical compounds leaves green tea and celery plants using KNApSACk, IJAH Analytics, Dr. Duke's Phytochemical and Ethnobotanical Database, and research journals. Active substance screening of target proteins obtained from PubChem. Target proteins that can be involved in pathophysiology target dyslipidemia is obtained from the KEGG Pathway, by validated gene names using Strings. Proteins and gene identification uses Swiss Target Prediction. Visualization of network pharmacology of proteins compound and proteins-proteins interaction using Cytoscape.

Network pharmacology visualization proved that APOE and ABCA1 target proteins were predicted to be the target of action of green tea and celery leaf compounds as antidyslipidemia. The compounds quercetin, kaempferol, myricetin, cyanidin, theophylline, apigenin, luteolin, gallic acid, caffeic acid, and hesperetin formed network pharmacology profile interactions with predicted target proteins involved in the pathophysiological pathways of dyslipidemia.

Keywords: dyslipidemia, green tea, celery, network pharmacology, cytoscape