Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi
Aktivitas Anti-Alzheimer Secara In Silico
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Abubakar, A., R, & Haque, M. 2020. Preparation of medicinal plants: Basic extraction and fractination procedures for experimental purposes. *Journal of Pharmacy and Bioallied Sciences*. 12(1) .p. 1-9.

Agu, P., C., Afiukwa, C., A., Orji, O., U., & Aja, P., M. 2023. Molecular docking as a tool for the discovery of molecular targets of nutraceuticals in diseases management. *Nature Portofolio*. 13(13398). p. 2-4.

Ahmad, A.R., Usman, I.N.R., Syarif, R.A., dan Handayani, V. 2023. The identify of antioxidants constituents of Cemba leaves (*Acacia rugata* (Lam.) Fawc. Rendle). *AIP Conference Proceedings.* 2595(1): 6-4.

Altaf, M.M., Diao, X., Imtiaz, M., Shakoor, A., Altaf, M.A., Younis, H., Fu, P., & Ghani, M.U. 2020. Effect of vanadium on growth, photosynthesis, reactive oxygen species, antioxidant enzymes, and cell death of rice. *J. Soil Sci. Plant Nutr*. 20. p. 2643-2656.

Alzheimer's Disease International. 2015. *World alzheimer's Report 2015*. London: Alzheimer's Disease International.

Amaliah, R., Pusmarani, J., & Nasir, N., H. 2024. Skrining Fitokimia dan Uji Aktivitas Antioksidan Fraksi Air, Etil Asetat dan n-Heksan Kulit Batang Kayu Jawa (*Lannea grandis* (Dennst.) Engl) dengan Metode FRAP (Ferric Reducing Antioxidant Power). *Jurnal Pharmacia Mandala Waluya*. 3(6). p. 371.

Anulika, N., P., Ignatius, E., O., Raymond, E., S., Osasere, O., I., & Abiola, A., H. 2016. The chemistry of natural product: Plant secondary metabolites. *International Journal of Technology Enhancements and Emerging Engineering Research*. 4(8). p. 1-5.

Apriali, K., D., Triana, E., Farhani, M., I., Khoirunnisa, A., Nur'aini, Y., A. 2022. Studi penambatan molekul dan prediksi admet senyawa metabolit sekunder tanaman kelor (*Moringa oleifera* L.) sebagai inhibitor BACE1. *Jurnal Ilmiah Farmasi*. 12(1). p. 59.

Arbor, S., C., LaFontaine, M., & Cumbay, M. 2016. Amyloid-beta alzheimer targets-protein processing, lipid rafts, and amyloid beta pores. *Yale J Biol Med*. 89(1). p. 10.

Aydogan., C. 2020. Recent advances and applications in LC-HRMS for food and natural products: a critical review. *Analytical and Bioanalytical Chemistry.* 2(412). p. 1975.

Berker, K., I., Guclu, K., Tor, I., & Apak, R. 2007. Comparative evaluation of Fe(III) reducing power-based antioxidant capacity assays in the presence of phenanthroline, batho-phenanthroline, tripyridyltriazine (FRAP), and ferricyanide reagents. *Talanta*. 72(5). p. 1158.

Castellucio, C., Pagangan, G., & Rice-Evans, C. 1995. Antioxidant potential of intermediates in phenylpropanoid metabolism in higher plants. *FEBS Letters.* 368. p. 191.

Chahyani, W., I & Hastuti, M., S. 2020. M ixed dementia: tinjauan diagnosis dan tatalaksana. *Muhammadiyah Journal of Geriatric.* 1(2). p. 49.

UNIVERSITAS
GADJAH MADA
**Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi
Aktivitas Anti-Alzheimer Secara In Silico**
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Cortes, N., Casteneda, C., Osorio, E., & Cardona-Gomez, P. 2018. Amaryllidaceae alkaloids as agents with protective effects against oxidative neural cell injury. *Life Sciences*. 203. p. 63.

Cruz-Vicente, P., Passarinha, L., A., Silvestre, S., & Gallardo, E. 2021. Recent developments in new therapeutic agents against Alzheimer and Parkinson diseases: in silico approaches. *Molecules*. 26(8). p. 3.

Das, B. & Yan, R. 2017. Role of BACE1 in Alzheimer's synaptic function. *Translational Neurodegeneration*. 6(1). p. 4-6.

Dasalaku, A., S, Yuslinawari, & Prijono, A. 2024. Identifikasi dan keanekaragaman jenis bambu pada lahan KHT Bambu Lestrari Dusun Bulak Salak Desa Wukirsari Kapanewon Cangkringan, Kabupaten Sleman, Provinsi Daerah Istimewa Yogyakarta. *AGROFORETECH*. 2(2). p. 917-923.

Dhapola, R., Beura, S., K., Sharma, P., Singh, S., & Reddy , D. 2024. Oxidative stress in Alzheimer's disease: current knowledge of signaling pathways and therapeutics. *Molecular Biology*. 51(48).p. 3-4.

Dianasari, D., & Firdiyansari, I. 2019, Potensi ekstrak etanol herba apu apu dan fraksi fraksinya sebagai antioksidan dengan metode DPPH. *Jurnal Farmasi Indonesia*. 16(2). p. 85.

Dias, M., C., Pinto, D., C., G., A., & Silva, A. 2021 .Plant Flavonoids: Chemical Characteristics and Biological Activity. *Molecules.* 26(17). p. 10.

Emamverdian, A., Ding, Y., Alyemeni, M., N., Barker, J., Liu, G., Li, Y., Mokhberdoran, F., & Ahmad, P. 2022. Benzylaminopurine and Abscisic Acid Mitigates Cadmium and Copper Toxicity by Boosting Plant Growth, Antioxidant Capacity, Reducing Metal Accumulation and Translocation in Bamboo [*Pleioblastus pygmaeus* (Miq.) Plants. *Antioxidants*. 11(2328). p. 21.

Fakhri, S., Pesce, M., Patruno, A., Moradi, S., Z., Iranpanah, A., Farzaei, M., H., & Sobarzo-Sanzhez., E. 2020. Attenuation of Nrf2/Keap1/ARE in alzheimer's disease by plant secondary metabolites: A mechanistic review. *Molecules*. 25(4926). p. 3.

Feng, Y., & Wang, X. 2012. Antioxidant therapies for Alzheimer's disease. 2012(2). p. 1-17.

Fraga, C., G., Oteiza, P., I., & Galleano, M. 2013. In vitro measurement and interpretation of total antioxidant capacity. *Biochimica et Biophysica Acta*. 4(2). p. 2-3.

Gameiro, I., Michalska, P., Tenti, G., Lopez, M., Cuadrado, A., & Leon, R. 2017. Discovery of the first dual GSK3B inhibitor/Nrf2 inducer. A new multitarget therapeutic strategy for Alzheimer's disease. *Scientific Reports*. 7(45701) . p. 15.

Georgakopoulos, N., Talapatra, S., Dikovskaya., & Wells, G., 2022. Phenyl Bis-Sulfonamide Keap1-Nrf2 protein-protein interaction inhibitors with an alternative binding mode. *Journal of Medicinal Chemistry*. 65. p. 7380-7398.

Gong, J., Xia, D., Huang, J., Ge, Q., Mao, J., Liu, S., & Zhang, Y. 2015. Functional components of bamboo shavings and bamboo leaf extracts and their antioxidant activities in vitro. *Journal of Medical Food*. 18(4). p. 455.

Gong, Y., Guao, J., Hu, K., Gao, Y., Xie, B., Sun, Z., Yang, E., & Hou, F. 2016. Ameliorative effect of lotus seedpod proanthocyanidins on cognitive

UNIVERSITAS GADJAH MADA
Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi Aktivitas Anti-Alzheimer Secara In Silico
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

impaiment and brain aging induced by D-galactose. *Experimental Gerontology*. 74. p. 21-28.

Guo, Z., Huang, S., Wang, J., & Feng, Y., L. 2020. Recent advances in non-targeted screening analysis using liquid chromatography-high resolution mass spectrometry to explore new biomarkers for human exposure. *Talanta*. 3(219). p. 8

Gulcin, I. 2020. Antioxidants and antioxidant methods: an updated overview. *Archives of Toxicology*. 94(2). p. 651-715.

Gulcin, I., & Alwasel, S., H. 2023. DPPH Radical Scavenging Assay. *Processes*. 11(8). p. 2248.

Guna, I., N., G., A. & Yustiantara, I., P., S. 2023. Potensi pegagan (*Centella astiaca*) sebagai pengobatan Alzheimer. *Prosiding Seminar Nasional Farmasi.* 2(1). p. 3

Integrated Taxonomic Information System. 2010. *Dendrocalamus asper*. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=506663#null. Diakses tanggal 27 Maret 2025.

Ivanovic, V., Rancic, M., Arsic, B., & Pavlovic, A. 2020. Lipinski's rule of five, famous extensions and famous exceptions. *Chemia Naissensis*. 3(1). p. 171-177.

Kabera, J., N., Semana, E., Mussa, A., R., & He, X. 2014. Plant secondary metabolites: biosynthesis, classification, function, and pharmacological properties. *Journal of Pharmacy and Pharmacology*. 2(8). p. 377-392.

Kang, Y., J., Hyeon, S., J., McQuade, A., Lim, J., Baek, S., H., & Cho, H. 2024. Neurotoxic Microglial Activation via IFNγ-Induced Nrf2 Reduction Exacerbating Alzheimer's Disease. *Advanced Science*. 11(20). p. 1-13.

Karolina, A., Wojtunik-Kulesza, Oniszczuk, A., Oniszczuk, T., Waksmundzka-Hajnos, M. 2016. The influence of common free radicals and antioxidants on development of Alzheimer's Disease. *Biomedicine and Pharmacotheraphy*. 78(2). p. 41.

Kedare, S., B., & Singh, R., P. 2011. Genesis and development of DPPH method of antioxidant assay. *Journal of Food Science Technology*. 48(4). p. 413.

Khanh, N.N T., T., Chi, V., T., D., & An, N., T. 2023. Evaluation of antioxidant capacity in *Dendrocalamus asper* extrcats cultivated in agricultural fields of an Giang Province, Vietnam. *Journal of Xi'an Shiyou University Natural Science Edition*. 19(6). p. 5.

La, J., Kim, M., & Lee, J. 2021. Evaluation of solvent effects on the DPPH reactivity for determining the antioxidant activity in oil matrix. *Food Sci Biotechnol*. 30(3). p. 372.

Laksono, A., D., & Agustiningtyas, D., T. 2019. Pengaruh Faktor Geografi Terhadap Karakteristik Bambu Petung. J*ournal of Technology*. 3(1). p. 26.

Laksono, B., A., Rif'at, N., A., & Sari, R. 2023. Evaluation of oral preparation of vitamin E as antioxidant using DPPH. *Jurnal Ilmiah Kimia Farmasi*. 10(1). p. 12-16.

Liljegren, M., Landqvist, W., M., Rydbeck, R., & Englund, E. 2018. Police interactions among neuropathologically confirmed dementia patients prevalence and cause. *Alzheimer's Dis Assoc Discord*. 32(4). p. 346-350.

Luliana, S., Purwanti, N., U., & Manihuruk, K., N. 2016. Pengaruh Cara Pengeringan Simplisia Daun Senggani (*Melastoma malabathricum* L.)

UNIVERSITAS
GADJAH MADA
**Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi
Aktivitas Anti-Alzheimer Secara In Silico**
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Terhadap Aktivitas Antioksidan Menggunakan Metode DPPH (2,2-difenil-1- pikrilhidrazil). *Pharm Sci Res*. 3(3). p. 126-127.

Marjoni, M., R. & Zulfisa, A. 2017. Antioxidant activity of methanol extract/fractions of senggani leaves (*Melastoma candidum* D. Don). *Pharmaceutica Analytica Acta*. 8(8). p. 1-6.

Mendrofa, F., A., M., FA, P., & Prayogo, F., A. 2025. Analisis Kadar Beta-Amyloid dalam Plasma sebagai Biomarker Diagnostik Dini Penyakit Alzheimer pada Populasi Lanjut Usia. *Journal of Biomedical Sciences and Health*. 2(1). p. 22.

Mohammadi, Y., Emadi, R., Maddahi, A., Shirdel, S., Morowvat, M., H. 2024. Identifying potential Alzheimer's disease therapeutics through GSK-3β inhibition: A molecular docking and dynamics approach. *Computational Biology and Chemistry*. 111(2). p. 2.

Moore, K., B., E., Hung, T., & Fortin, J. 2023. Hyperphosphorylated tau(p-tau) and drug discovery in the context of Alzheimer's disease and related tauopathies. *Elsevier*. p. 3-4.

Mulyono, N., Lay, B., W., Rahayu, S., & Yaprianti, I. 2012. Antibacterial activity of Petung Bamboo (*Dendrocalamus asper*) leaf against pathogenis *Escherichia coli* and their chemical identification. *International Journal of Pharmaceutical & Biological Archives.* 3(4). p. 771.

Muthia, R., Saputri, R., Verawati, S., A. 2019. Uji aktivitas antioksidan ekstrak etanol kulit buah mundar menggunakan metode DPPH. *Jurnal Pharmascience*. 6(1). p. 74-82.

Naji, E., F., Abdulfatah, H., F., & Hashim, K., S. 2024. Plant secondary metabolites, their classification and biological roles: a review. *JUAPS*. 18(1). p. 106-115.

Nirmala, C., Bisht, M., S., Bajwa, H.,K. & Santosh, O. 2018. Bamboo: a rich source of natural antioxidants and its applications in the food and pharmaceutical industry. *Trends in Food Science & Technology*. 77 . p. 95.

Nugroho, N., Bahtiar, E., T., & Budhijatmiko, A. 2022. Kekuatan bambu betung (*Dendrocalamus asper* Backer ex K.Heyne) menahan gaya normal tekanan dan tarikan. *Jurnal Penelitian Hasil Hutan*. 40(1). p. 38.

Pedisius, V., Stratton, T., Taujenis, L., Jakstas, V., & Tamosiunas, V. 2026. Detecting and Grouping In-Source Fragments with Low-Energy Stepped HCD, Together with MS3 , Increases Identification Confidence in Untargeted LC–Orbitrap Metabolomics of Plantago lanceolata Leaves and P. ovata Husk. *Metabolites*. 16(42). p. 15.

Pezzati, J., Baccard, J., Gagnebin, Y., Joshi, A., Picard, D., Gonzales-Ruiz, V., & Rudaz, S. 2020. Implementation of liquid chromatography-high resolution mass spectrometry methods for untargeted metabolomic analyses of biological samples: A tutorial. *Analytical Chimica Acta*. 2(1105). p. 28-44.

Prasetiawati, R., Suherman, M., Permana, B., & Rahmawati. 2021. Studi molecular docking senyawa antosianidin terhadap Epidermal Growth Factor Receptor (EGFR) sebagai anti kanker paru. *Indonesian Journal of Pharmaceutical Science Technology*. 8(1). p. 9.

Pritam, P., Deka, R., Bhardwaj, A., Srivastava, R., Kumar, D., Jha, A., K., Jha, N., K., Villa, C., & Jha, S., K. 2022. Antioxidants in Alzheimer's disease: current therapeutic significance and future prospects. *Biology*. 11(212). p. 4-6

UNIVERSITAS
GADJAH MADA
**Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi
Aktivitas Anti-Alzheimer Secara In Silico**
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Pujiarti, R., Suryani, S., Sunarta, S., Lukmandaru, G., & Purba, B., A., V. 2020. Extractive contents and DPPH-scavenging activities of bamboo leaf extracts from *Gigantochloa atter*, *Dendrocalamus asper*, and *Gigantochloa verticillata*. *Taiwan J For Sci*. 35(1). p. 3.

Putri, L., E., S., Soyata, A., & Marpaung, M., P. 2024. Aktivitas antioksidan dari fraksi fraksi ekstrak kulit buah duku (*Lancium domesticum* Corr). *Media Farmasi*. 20(1). p. 44-46.

Rena, S., R., Nurhidayah, & Rustan. 2022. Analisis molecular docking senyawa Garcinia mangosstana L. sebagai kandidat anti SARS-CoV-2. *Jurnal Fisika Unan*. 11(1). p. 86.

Reshma, A., Subramanian, A., Kumarasamy, V., Tamilanban, T., Sekar, M., Gan, S., H., Subramaniyan, V., Wong, L.,S ., Rani, N., & Wu, Y., S. 2024. Neurocognitive effects of proanthosyanidin in Alzheimer's disease: a systematic review of preclinical evidence. *Brazilian Journal of Medical and Biological Research*. 57(2). p. 3.

Rodriguez, B., Paghego, L., Bernal,I., & Pina, M. 2023. Mechanism of action of flavonoids: antioxidant, antibacterial, and antifungal properties. *Ciencia*. 6(2). p. 38.

Sadono, A., & Wijaya, N. 2022. Keanekaragaman jenis bambu di Hulu Tampang Dusun Utara Kabupaten Barito Selatan Propinsi Kalimantan Tengah. *Jurnal Hutan Tropika*. 17(2). p. 261.

Salampe, M., Rahimah, S., Mamada, S., S., & Ivone, V. 2025. Uji aktivitas antioksidan ekstrak daun murbei (Morus alba) menggunakan metode BCB, CUPRAC, dan FRAP. *JMPI*. 11(1). p. 155.

Satriawan, B., & Wijaya, A. 2023. Pengaruh perbedaan jenis pelarut terhadap nilai rendeman ekstrak daun pepaya (*Carica papaya*). *Journal of pharmacy UMUS*. 5(1). p. 11.

Scapagnini, G., Butterfield, D., Colombrita, C., Sultana, R., Pascale, A., & Calabrese, V. 2004. Ethyl Ferulate, a Lipophilic Polyphenol, Induces HO-1 and Protects Rat Neurons Against Oxidative Stress. *Sage Journals*. 6(5). p. 812-816.

Setiawan, V., Phangestu, S., Soetikno, A., G., Arianti, A., & Kohar, I. 2021. Rapid screening analysis of antioxidant activitites in green tea product using DPPH dan FRAP. *Pharmaceutical Journal of Indonesia*. 7(1). p. 13.

Shina, M., A., I., Wardani, T.,S., & Artini, K., S. 2024. Uji Aktivitas Antibakteri Ekstrak, Fraksi Air, Fraksi Etil Asetat, Fraksi n-Heksan Daun Petai Cina (*Leucaena leucocephala*) Terhadap Bakteri *Staphylococcus aureus* ATCC 25923. *Jurnal Riset Ilmu Farmasi dan Kesehatan*. 2(6). p. 3-5.

Sianturi, A., G., M. 2021. Stdium, diagnosis, dan tatalaksana penyakit alzheimer.*Majalah Kesehatan Indonesia.* 2(2). p. 39-44.

Suryani, Y., Tauupiqurrohman, O., Rikani, A., & Paujiah, E. 2018. Insilico docking studies of daidzeion compounds s selective estrogen receptor modulator (SERMS) breast cancer. *AASEC*. 197(2). p. 1-5.

Taki-Nakano, N., Kotera, J., & Ohta, H. 2016. 12- -oxo-phytodienoic acid, a plant-derived oxylipin, attenuates lipopolysaccharide-induced inflammation in microglia. *Biochemical and Biophysical Researvh Communication*. 473. p. 1288-1294.

UNIVERSITAS
GADJAH MADA
**Potensi Antioksidan Ekstrak Daun Bambu Petung (Dendrocalamus asper) Secara In Vitro dan Prediksi
Aktivitas Anti-Alzheimer Secara In Silico**
Puspita Nur Rahmawati, Dr. Tri Rini Nuringtyas, S. Si., M. Sc.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Tarif, E., Rahaman, P., Roymahapatra, G., & Bag, A. 2025. In silico evaluation of novel donepizil analogues for Alzheimer's disease: Molecular docking and ADME profiling for potent human Acetylcholinesterase inhibition. *ES General*. 9(1748) .p. 3.

Thawabteh, A., M., Ghanem, A., W., AbuMadi, S., Thaher, D., Jaghmana, W., Karaman, D., & Karaman, R. 2024. Recent advances in therapeutics for the treatment of Alzheimer's disease. *Molecules*. 29(21). p. 2-5.

Theafelicia, Z., & Wulan, S., N. 2023. Perbandingan berbagai metode pengujian akivitas antioksidan (DPPH, ABTS, dan FRAP) pada teh hitam. *Jurnal Teknologi Pertanian*. 24(1). p. 39-40.

Todorov, L., Saso, L., & Kostova, I. 2023. Antioxidant activity of coumarins and their metal complexes. *Pharmaceuticals*. 16(651). p. 1-26.

Tristantini, D., Ismawati, A., Pradana, B. & Jonathan, J. 2016. Pengujian aktivitas antioksidan menggunakan metode DPPH pada Daun Tanjung (*Mimusops elengi* L.), *Pengembangan Teknologi Kimia untuk Pengolahan Sumber Daya Alam Indonesia*.

Triyanti, S., B., Lestari, F., P., Fitriana, P.,A ., N., & Saputra, I., S. 2025. Pengaruh metode maserasi, sonikasi, dan sokletasi terhadap nilai rendeman sampel kulit buah naga. *Jurnal Sains dan Edukasi Sains*. 8(1). p. 71-78.

Vellur, S., Pavadai, P., Babkiewicz, E., Pandian, S., R., K., Maszcyk, P., & Kunjiappan, S. 2023. An in silico molecular modelling-based prediction of potential Keap1 inhibitors from *Hemidesmus indicus* (L.) R. Br. Against oxidative stress-induced diseases. *Molecules.* 28(4). p. 5.

Vitadella, V., Bulan, C., P., Sinurat, J., A., N., Latief, M., Yusnaidar, & Tarigan, I., L. 2024. Studi in silico senyawa bioaktif daun miana (*Coleus scutellariodes* (L). Benth) sebagai inhibitor enzim acethylcholinesterase (Ache) pada alzheimer. *Jurnal Sains dan Kesehatan*. 6(2). p. 284.

Wardani, I., G., A., A., K., Adrianta, K., A., Udayani, N., W., & Suena, D., S. 2025. Aktivitas antioksidan ekstrak etanol kulit biji dan buah bakau (Xylocarpus granatum J. Koenig) dengan metode DPPH dan FRAP. *Jurnal Ilmiah Medicamento*. 11(1). p. 93.

Yu, L., Yue, J., Dai, Y., Zhang, L., Wang, Q., & Yuan, J. 2023. Characterization of color variation in bamboo sheath of *Chimonobambusa hejiangensis* by UPLC-ESI-MS/MS and RNA sequencing. *BMC Plant Biology*. 23(466). p. 5.

Zulkarnaen, R., N. & Andila, P., S. 2015. *Dendrocalamus* spp.: Bambu raksasa koleksi Kebun Raya Bogor. *Pros Sem Nas Masy Biodiv Indonesia*. 1(3). p. 53