

## DAFTAR PUSTAKA

1. Bustanussalam B, Parwati T, Simanjuntak P. Isolasi, Elusidasi Struktur, dan Uji Bioaktivitas Alkaloid dari Akar Kemuning (*Murraya exotica* L.). J Ilmu Kefarmasian Indones. 2004;2(2).
2. Ghani U. Alpha-Glucosidase Inhibitors Clinically Promising Candidate for Antidiabetic Drug Discovery. United States: Elsevier; 2020.
3. Maisarah M, Chatri M, Advinda L, Violita. Karakteristik dan Fungsi Senyawa Alkaloid sebagai Antifungi pada Tumbuhan. Serambi Biol. 2023;8(2):231–6.
4. Behl T, Gupta A, Albratty M, Najmi A, Meraya M. A, Alhazmi HA, et al. Alkaloidal Phytoconstituents for Diabetes Management: Exploring the Unrevealed Potential. Molecules. 2022;27.
5. Arbain D. Inventory, Constituents and Conservation of Biologically Important Sumatran Plants. Nat Prod Commun. 2012;7(6):799–806.
6. Gu C, Zhang H, Putri CY, Ng K. Evaluation of  $\alpha$ -Amylase and  $\alpha$ -Glucosidase Inhibitory Activity of Flavonoids. Int J Food Nutr Sci. 2016;2(6):1–6.
7. International Diabetes Federation. IDF Diabetes Atlas, 10th ed. Brussels, Belgium: International Diabetes Federation; 2021.
8. I ADUD, Sutadarma WG, Wiryanthini IAD. Hubungan Asupan Jenis Beras terhadap Kadar Glukosa Darah Sewaktu pada Pasien Diabetes Melitus Tipe II. J Med Udayana. 2022;11(5).
9. American Diabetes Association. Diagnosis and Classification of Diabetes Mellitus. Diabetes Care. 2010;33(Supplement 1).
10. Herman, Murniati, S NAS. Inventarisasi Tanaman Obat Tradisional untuk Penderita Diabetes Melitus dan Hipertensi di Desa Minanga Kecamatan Bambang Kabupaten Mamasa. J Farm Sandi Karsa. 2019;5(1).
11. Syafni N, Arifa N, Ismed F, Putra DP. Preliminary Study: Bioautography Screening on Edible Local Plants with  $\alpha$ -Glucosidase Inhibitor. Atl Press. 2021;40.
12. Taher M, Shaari SS, Susanti D, Arbain D, Zakaria ZA. Genus Ophiorrhiza: a Review of Its Distribution, Traditional Uses, Phytochemistry, Biological Activities and Propagation. Molecules. 2018;25(11):2611.
13. Dachriyanus, Arbain D. Isolasi Alkaloida dari Tumbuhan Ophiorrhiza

- bracteata Korth. Pusat Penelitian Universitas Andalas. Padang; 1997.
14. Zhao M xue, Cai J, Yang Y, Xu J, Liu W yuan, Akihisa T, et al. Traditional Uses, Chemical Composition and Pharmacological Activities of *Alstonia R. Br.* (Apocynaceae): a Review. *Arab J Chem.* 2023;16(8):104857.
  15. Aliero AA, Grierson DS, Afolayan AJ. Chemical and Nutrient Characterization of *Solanum pseudocapsicum* Berries. *African J Biotechnol.* 2005;4(11):1300–3.
  16. Muhammad I, Rahman N, Gul-E-Nayab, Nishan U, Shah M. Antidiabetic Activities of Alkaloids Isolated from Medicinal Plants. *Brazilian J Pharm Sci.* 2021;57.
  17. Brihi N. Pharmacological Activity of Alkaloids: a Review. *Asian J Bot.* 2018;1.
  18. Amin S, Nugraha AC, Maulidya SAI. Skrining Virtual Senyawa Alkaloid Sebagai Inhibitor Main Protease Untuk Kandidat Anti-Sars-Cov-2. Jakarta: Deepublish; 2021.
  19. Wink M. *Alkaloids: Properties and Determination.* Elsevier. 2016;
  20. Martins D, Nunez CV. Secondary Metabolites from Rubiaceae Species. *Molecules.* 2015;20.
  21. Chidambaram K, Alqahtani T, Alghazwani Y, Aldahish A, Annadurai S, Venkatesan K, et al. Medicinal Plants of *Solanum* Species: the Promising Sources of Phyto-Insecticidal Compounds. *J Trop Med.* 2022;
  22. Dey A, Mukherjeex A, Chaudhury M. Alkaloids From Apocynaceae: Origin, Pharmacotherapeutic Properties, and Structure Activity Studies. *Stud Nat Prod Chem.* 2017;52.
  23. Darsana IGO, Besung INK, Mahatmi H. Potensi Daun Binahong (*Anredera cordifolia* (Tenore) Steenis) dalam Menghambat Pertumbuhan Bakteri *Escherichia coli* secara In Vitro. *Indones Med Veterinus.* 2012;
  24. Karou D, Savadogo A, Canini A, Yameogo S, Montesano C, Simpoire J, et al. Antibacterial Activity of Alkaloids from *Sida Acuta*. *African J Biotechnol.* 2005;4(12).
  25. Nord C, Levenfors JJ, Bjerketorp J, Sahlberg C, Guss B, Öberg B, et al. Antibacterial Isoquinoline Alkaloids from the Fungus *Penicillium spathulatum* Em19. *Molecules.* 2019;24(24):4616.
  26. Handayani V, Ahmad AR, Sudir M. Uji Aktivitas Antioksidan Ekstrak Metanol Bunga dan Daun Patikala (*Etilingera elatior* (Jack) R.M.Sm)

- Menggunakan Metode DPPH. Pharm Sci Res. 2014;1(2).
27. Li LS, Chiroma SM, Hashim T, Adam SK, Moklas MAM, Yusuf Z, et al. Antioxidant and Anti-Inflammatory Properties of *Erythroxylum cuneatum* Alkaloid Leaf Extract. Heliyon. 2020;6(6).
  28. Tamimi AA., Queljoe E de, Siampa JP. Uji Efek Analgesik Ekstrak Etanol Daun Kelor (*Moringa oleifera* Lam.) pada Tikus Putih Jantan Galur Wistar (*Rattus norvegicus*). Pharmacon. 2020;9(3).
  29. Farouk L, Laroubi A, Aboufatima R, Benharref A, Chait A. Evaluation of the Analgesic Effect of Alkaloid Extract of *Peganum harmala* L.: Possible Mechanisms Involved. J Ethnopharmacol. 2008;
  30. A TH. Systemic Review On Black Pepper (*Piper nigrum* L). J Crit Rev Food Sci Nutr. 2019;2:1–34.
  31. Diogo C V, Machado NG, Barbosa IA, Serafim TL, Burgeiro A, Oliveira PJ. Berberine as a Promising Safe Anti-Cancer Agent. Curr Drug Targets. 2011;12(6):850–9.
  32. Tan W, Lu J, Huang M, Li Y, Chen M, Wu G, et al. Anti-Cancer Natural Products Isolated from Chinese Medicinal Herbs. Chin Med. 2011;6(1):27.
  33. Sun Y, Xun K, Wang Y, Chen X. A Systematic Review of the Anticancer Properties of Berberine, a Natural Product from Chinese Herbs. Anti-Cancer Drugs. 2009;20(9):757–69.
  34. Lu JJ, Bao JL, Chen XP, Huang M, Wang YT. Alkaloids Isolated from Natural Herbs as the Anticancer Agents. Evid Baser Complement Altern Med. 2012;
  35. Ajebli M, Khan H, Eddouks M. Natural Alkaloids and Diabetes Mellitus: A Review. Endocr Metab Immune Disord Drug Targets. 2021;21(1):111–30.
  36. Bai R, Yao C, Zhong Z, Ge J, Bai Z, Ye X, et al. Discovery of Natural Anti-Inflammatory Alkaloids: Potential Leads for the Drug Discovery for The Treatment of Inflammation. Eur J Med Chem. 2021;
  37. Fatma M, Chatri M, Fifendy M, Handayani D. Effect of Papaya Leaf Extract (*Carica papaya* L.) on Colony Diameter and Percentage of Growth Inhibition of *Fusarium oxysporum*. J Serambi Biol. 2021;6(2):9–14.
  38. Utami MD, Linda A, Violita, Moralita C. Efektivitas Ekstrak Daun Mengkudu (*Morinda citrifolia* L.) sebagai Antifungi terhadap Pertumbuhan *Sclerotium rolfsii* secara In Vitro. Serambi Biol. 2022;7(2):199–204.
  39. Singh AK, Pandey MB, Singh UP. Antifungal Activity of an Alkaloid

- Allosecurinine against Some Fungi. *Mycobiology*. 2007;35(2):62–4.
40. Aba PE, Asuzu1 IU. Mechanisms of Actions of Some Bioactive Anti-Diabetic Principles from Phytochemicals of Medicinal Plants: A Review. *Indian J Nat Prod Resour*. 2018;9(2):85–96.
  41. Sinulingga S, Subandrate S, Safyudin S. Uji Fitokimia dan Potensi Antidiabetes Fraksi Etanol Air Daun Benalu Kersen (*Dendrophthoe petandra* (L) Miq). *J Kedokt dan Kesehat*. 2020;16(1).
  42. Pricillia L. Buku Ajar Keperawatan Medical Bedah Vol. 1. 5th ed. Jakarta: EGC; 2015.
  43. Najib A. Ekstraksi Senyawa Bahan Alam. Yogyakarta: Deepublish; 2018.
  44. Mukhriani. Ekstraksi, Pemisahan Senyawa, dan Identifikasi Senyawa Aktif. *J Kesehat*. 2014;7(2).
  45. Agung Abadi Kiswandono. Skrining Senyawa Kimia Dan Pengaruh Metode Maserasi dan Refluks pada Biji Kelor (*Moringa oleifera* Lamk.) terhadap Rendemen Ekstrak yang Dihasilkan. *J Ilm Ilmu-Ilmu Biol dan Kim*. 2011;1(2).
  46. Leba MAU. Ekstraksi dan Real Kromatografi. Yogyakarta: Deepublish; 2017.
  47. Simanjuntak M. Ekstraksi dan Fraksinasi Komponen Ekstrak Daun Tumbuhan Senduduk (*Melastoma malabathricum* L.) serta Pengujian Efek Sediaan Krim terhadap Penyembuhan Luka Bakar. Medan: USU Repository; 2018.
  48. Saputra SH. Mikroemulsi Ekstrak Bawang Tiwai : sebagai Pembawa Zat Warna, Antioksidan dan Antimikroba Pangan. Yogyakarta: Deepublish; 2020.
  49. Endang H. Analisis Fitokimia. Tegal: EGC; 2015.
  50. Hasrianti H, Nururrahmah N, Nurasia N. Pemanfaatan Esktrak Bawang Merah dan Asam Asetat sebagai Pengawet Bakso. *J Din*. 2016;7(1):9–30.
  51. Djohan H, Sugito, Sutriswanto. Daya Hambat Air Perasan Daun Pucuk Merah (*Syzygium oleana*) terhadap Pertumbuhan Bakteri *Staphylococcus aureus*. *J Lab Khatulistiwa*. 2022;5(2):0–4.
  52. Yuliwati E, Faizal M, Martini S. Proses Pemisahan Lanjut. Palembang: Repository UM Palembang; 2022.
  53. Walangare KBA, Arie LSM, Wuwung JO, Sugiarto BA. Rancang Bangun Alat Konversi Air Laut Menjadi Air Minum dengan Proses Destilasi

- Sederhana Menggunakan Pemanas Elektrik. J Tek Elektro dan Komput. 2013;2(2).
54. Putri FE, Diharmi A, Karnila R. Identifikasi Senyawa Metabolit Sekunder pada Rumput Laut Cokelat (*Sargassum plagyophyllum*) dengan Metode Fraksinasi. J Teknol dan Ind Pertan Indones. 2023;15(1).
  55. Pratiwi L, Fudholi A, Martien R, Pramono S. Ethanol Extract, Ethyl Acetate Extract, Ethyl Acetate Fraction, and *n*-Heksan Fraction Mangosteen Peels (*Garcinia mangostana* L.) as Source of Bioactive Substance Free-Radical Scavengers. J Pharm Sci Clin Res. 2016;1(2).
  56. Mangurana WOI, Yusnaini Y, Sahidin S. Analisis LC-MS/MS (Liquid Chromatograph Mass Spectrometry) dan Metabolit Sekunder serta Potensi Antibakteri Ekstrak *n*-Heksana Spons *Callyspongia aerizusa* yang Diambil pada Kondisi Tutupan Terumbu Karang yang Berbeda Diperairan Teluk Staring. J Biol Trop. 2019;19(2).
  57. Wulandari L. Kromatografi Lapis Tipis. Jawa Timur: Taman Kampus; 2011.
  58. Nurdiani D. Buku Informasi Melaksanakan Analisa secara Kromatografi Konvensional Mengikuti Prosedur. Jakarta: Kemendikbud;
  59. Endarini LH. Farmakognisi dan Fitokimia. Indonesia: Kementerian Kesehatan Republik Indonesia; 2016.
  60. Dachriyanus. Analisis Struktur Senyawa Organik secara Spektroskopi. Padang: LPTIK Universitas Andalas; 2017.
  61. Fessenden RJ, Fessenden JS. Organic Chemistry. Second Edi. USA: Wiliad Grant Press; 1982.
  62. Silverstein RM, Webster FX, Kiemle D. Spectrometric Identification of Organic Compounds. 7th editio. USA: John Wiley and Sons; 2021.
  63. Technologies A. Basics of LC/MS Primer. USA: Agilent Technologies; 2001.
  64. Harold E. Lebovitz M. Alpha-Glucosidase Inhibitors. Endocrinol Metab Clin NORTH Am. 1997;26(3).
  65. Soelistijo SA, Suastika K, Lindarto D, Decroli E, Permana H, Sucipto KW, et al. Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 Dewasa di Indonesia. Jakarta: PB Perkeni; 2021.
  66. Agristika A, Carolia N. Agonis Reseptor GLP 1 untuk Terapi Diabetes Mellitus Tipe 2. J AgromedUnila. 2017;4(2).
  67. Meryta A, Fidia F, Swity A. Penggunaan Antidiabetik Oral pada Pasien

- Diabetes Melitus Tipe II di Instalasi Farmasi Rumah Sakit Pinna Bekasi. J Farm IKIFA. 2023;1(1).
68. Simatupang A. Farmakologi Klinik Obat-Obat Diabetes Mellitus Tipe 2. Jakarta: Repository UKI;
  69. Adinda, Bunga R. Analisis Faktor Perilaku yang Berpengaruh terhadap Ketepatan Penggunaan Obat Oral Antidiabetes Mellitus (Penelitian Dibeberapa Apotek di Kecamatan Lowokwaru Kota Malang). UMM; 2018.
  70. Culvenor CCJ, Fitzgerald JS. A Field Method for Alkaloid Screening of Plants. J Pharm Sci. 1963;52(3):303–4.
  71. Simões-Pires CA, Hmicha B, Marston A, Hostettmann K. A TLC Bioautographic Method for the Detection of  $\alpha$ - and  $\beta$ -Glucosidase Inhibitors in Plant Extracts. Phytochem Anal. 2009;20(6):511–5.
  72. Gaurav, Zahiruddin S, Parveen B, Ibrahim M, Sharma I, Sharma S, et al. TLC-MS Bioautography-Based Identification of Free-Radical Scavenging,  $\alpha$ -Amylase and  $\alpha$ -Glucosidase Inhibitor Compounds of Antidiabetic Tablet BGR-34. ACS Omega. 2020;5(46):29688–97.
  73. Wickramaratne MN, Punchihewa JC, Wickramaratne DBM. In Vitro Alpha Amylase Inhibitory Activity of the Leaf Extracts of *Adenanthera pavoniva*. BMC Complement Altern Med. 2016;
  74. Syafni N, Putra DP, Arbain D. 3,4-Dihydroxybenzoic Acid And 3,4-Dihydroxybenzaldehyde from the *Ferntichomanes chinense* L.; Isolation, Antimicrobial and Antioxidant Properties. Indones J Chem. 2012;12(3):273–8.
  75. Mustiarini BAA, Hidayanti R. Skrining Fitokimia Ekstrak Etanol Daun Renggak (*Amomum dealbatum*) dan Potensinya sebagai Antioksidan. J Kim Pendidik Kim. 2021;3(2):143–53.
  76. Sembiring E, Sangi MS, Seuryanto E. Aktivitas Antioksidan Ekstrak dan Fraksi dari Biji Jagung (*Zea mays* L.). Chem Prog. 2016;9.
  77. Marston A, Hostettmann K. Plant TLC and Bioautography in Modern Phytochemical Analysis. Phytochem Analysis. 2002;13(6):267–80.
  78. Montanari IJ, FCG P, De AFO, Carollo C, G de Souza Lino von Poser. A Combined Approach of Bioautography and HPLC-MS/MS for the Analysis of Antibacterial Compounds in *Ocimum gratissimum* L. (Lamiaceae). Phytochem Lett. 2014;10:329–33.
  79. Rustanti E, Jannah A, Fasya AG. Uji Aktivitas Antibakteri Senyawa Katekin dari Daun Teh (*Camelia sinensis* L. varassamica) terhadap Bakteri

- Micrococcus luteus*. *Alchemy*. 2013;2(2).
80. Dewanjee S, Gangopadhyay M, Bhattacharya N, Khanra R, Dua TK. Bioautography and Its Scope in The Field of Natural Product Chemistry. *J Pharm Analysis*. 2015;5(2):75–84.
  81. Oliveira D, Oliveira F, Lima E. Chemical Composition and In Vitro  $\alpha$ -Amylase Inhibitory Activity of *Ocimum tenuiflorum* L. Essential Oil. *Ind Crop Prod*. 2016;85:141–7.
  82. Analda Souhoka F, Hattu N, Huliselan M. Uji Aktivitas Antioksidan Ekstrak Metanol Biji Kesumba Keling (*Bixa orellana* L). *J Chem Res*. 2019;7(1):25–31.
  83. Xiao Z, Storms R TA. A Quantitative Starch-Iodine Method for Measuring Alpha-Amylase and Glucoamylase Activities. *J Anal Biochem*. 2006;
  84. Granados-Guzmán G, Alanís-Garza BA, Castro-Ríos R, Waksman-Minsky N, Salazar-Aranda R. Assessment of  $\alpha$ -Amylase Inhibition Activity by an Optimized and Validated In Vitro Microscale Method. *Quim Nova*. 2022;45(9):1146–52.
  85. Mustakin F TM. Analisis Kandungan Glikogen Pada Hati, Otot, dan Otak Hewan. *J Canrea*. 2019;2(2).
  86. Suhartati T. Dasar-Dasar Spektrofotometri Uv-Vis dan Spektrometri Massa untuk Penentuan Struktur Senyawa Organik. Bandar Lampung: Anugrah Utama Raharja; 2017.
  87. Nayak P, Kar D. Isolation and Characterization of Stigmasterol from Chloroform Fraction of Aerial Part of *Argemone mexicana* L. *Int J Pharm Pharm Sci*. 2015;7(12):25–9.
  88. Poulose N, Sajayan A, Ravindran A, Chandran A, Priyadharshini GB, Selvin J, et al. Anti-Diabetic Potential of a Stigmasterol from the Seaweed *Gelidium spinosum* and Its Application in the Formulation of Nanoemulsion Conjugate for the Development of Functional Biscuits. *Front Nutr*. 2021;8(September):1–10.
  89. Tundis R, Loizzo MR, Menichini F. Natural Products as  $\alpha$ -Amylase and  $\alpha$ -Glucosidase Inhibitors and their Hypoglycaemic Potential in the Treatment of Diabetes: An Update. *Mini-Reviews Med Chem*. 2010;10(4):315–31.