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DAFTAR PUSTAKA

Aguiar, L. M., Moura, C. S. D., Ballard, C. R., Roquetto, A. R., Silva Maia, J. K. D., Duarte, G. H. B. (2022). Metabolic dysfunctions promoted by AIN-93G standard diet compared with three obesity-inducing diets in C57BL/6J mice. *Curr Res Physiol*, 5(4), 36–44. https://doi.org/10.1016/j.crphys.2022.11.001.

American Diabetes Association Professional Practice Committee. (2024). Classification and Diagnosis of Diabetes: Standards of Care in Diabetes—2024. *Diabetes Care*, 47(Suppl. 1), S20–S42. https://doi.org/10.2337/dc24-S002

Anjani, P. P., Damayanthi, E., Rimbawan, & Handharyani, E. (2018). Antidiabetic potential of purple okra (*Abelmoschus esculentus* L.) extract in streptozotocin-induced diabetic rats. *IOP Conference Series: Earth and Environmental Science*, 196, 012038. https://doi.org/10.1088/1755 1315/196/1/012038

Asad, D., Zreqat, Q., Idais, S., Hussein, B., Ayyad, A., Hunjul, M., AbuGharbieh, H. M. I., Neiroukh, H., Zuhour, A., AbuKhalaf, S., Al-Atrash, N., Alzughayyar, R., Njoum, Y., & Hallak, H. (2025). Prevalence of gastroparesis symptoms and its associated factors among type 2 diabetes mellitus patients in West Bank in Palestine: A national cross-sectional study. *Frontiers in Medicine, 12*, 1499725. https://doi.org/10.3389/fmed.2025.1499725

Bailey, C.J. & Turner, R.C. (1996). Metformin. *New England Journal of Medicine*, 334(9), pp.574–579.

Becton, D. (2009). *Difco™ & BBL™ Manual: Manual of Microbiological Culture Media* (2nd ed.). BD Diagnostics.

Bima, M. L. M., Rahmayani, F., & Mutiara, H. (2023). Neuropati diabetik: Diagnosis, faktor risiko, dan tatalaksana. *Medula*, 13, 1, 59-65. https://doi.org/10.53089/medula.v13i1.555

Cani, P.D., Bibiloni, R., Knauf, C., Waget, A., Neyrinck, A.M., Delzenne, N.M. & Burcelin, R., (2008). Changes in gut microbiota control metabolic endotoxemia-induced inflammation in high-fat diet-induced obesity and diabetes in mice. *Diabetes*, 57(6), pp.1470–1481. Available at: https://doi.org/10.2337/db07-1403.

Cappuccino, J.G., & Sherman, N. (2014). *Microbiology: A laboratory manual*. 10th ed. Boston: Pearson.

Careyva, B., & Stello, B. (2016). Diabetes Mellitus: Management of Gastrointestinal Complications. *American family physician*, *94*(12), 980–986. PMID: 28075092

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Chande, N., McDonald, J. W., & MacDonald, J. K. (2015). Interventions for treating collagenous colitis. *Cochrane Database of Systematic Reviews*, 2015(1), CD003575. https://doi.org/10.1002/14651858.CD003575.pub3

Chen, J., Liu, L., Yuan, Y., Wang, Y., Zhang, Y., & Liu, G. (2023). *Gastrointestinal consequences of type 2 diabetes: A Mendelian randomization study*. Diabetes Care, 46(4), 828–838. https://doi.org/10.2337/dc22-1534

Chong, S., Lin, M., Chong, D., Jensen, S., & Lau, N. S. (2025). A systematic review on gut microbiota in type 2 diabetes mellitus. *Frontiers in Endocrinology, 15*, 1486793. https://doi.org/10.3389/fendo.2024.1486793

Craciun, C. I., Neag, M. A., Catinean, A., Mitre, A. O., Rusu, A., Bala, C., Roman, G., Buzoianu, A. D., Muntean, D. M., & Craciun, A. E. (2022). The relationships between gut microbiota and diabetes mellitus, and treatments for diabetes mellitus. *Biomedicines*, 10(2), 308. https://doi.org/10.3390/biomedicines10020308

De Santis, S., Cavalcanti, E., Mastronardi, M., Jirillo, E., & Chieppa, M. (2015). Nutritional keys for intestinal barrier modulation. *Frontiers in Immunology*, 6, 612. https://doi.org/10.3389/fimmu.2015.00612

Diana, D., & Ekasari, M. H. (2018). Aplikasi sistem pakar untuk mendiagnosa penyakit kolitis. *Jurnal Ilmiah Komputasi*, 17(2), 151–160.

Donaldson, G. P., Lee, S. M., & Mazmanian, S. K. (2016). Gut biogeography of the bacterial microbiota. *Nature Reviews Microbiology*, 14(1), 20–32. https://doi.org/10.1038/nrmicro3552

Eichele, D. D., & Kharbanda, K. K. (2017). Dextran sulfate sodium colitis murine model: An indispensable tool for advancing our understanding of inflammatory bowel diseases pathogenesis. *World Journal of Gastroenterology, 23*(33), 6016–6029. https://doi.org/10.3748/wjg.v23.i33.6016

ElSayed, N.A., Aleppo, G., Aroda, V.R., Bannuru, R.R., Brown, F.M., Bruemmer, D., Collins, B.S., Hilliard, M.E., Isaacs, D., Johnson, E.L., Kahan, S., Khunti, K., Leon, J., Lyons, S.K., Perry, M.L., Prahalad, P., Pratley, R.E., Seley, J.J., Stanton, R.C. & Gabbay, R.A., (2023). Classification and diagnosis of diabetes: Standards of care in diabetes—2023. *Diabetes Care*, 46(Supplement_1), pp.S19–S40. https://doi.org/10.2337/dc23-S002

Fajarina, S., Prabowo, B. H., Damayanti, F., Widyasari, A., Sasongko, A. B., Indrianto, A., Semiarti, E., Hidayati, L., & Tunjung, W. A. S. (2021). Evaluation of anticancer bioactive compounds and cytotoxicity of citrus hystrix Dc. Callus extract post preservation. *Indonesian Journal of Pharmacy,* 32(2), 179–192. https://doi.org/10.22146/ijp.1062

Fatayati, I., Amanda, A. C., Nurhayati, E., Djohan, H., Sutriswanto, S., & Komara, N. K. (2023). Gambaran cemaran mikroba terhadap masa simpan dan

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

kebersihan penyimpanan telur ayam ras. *SENTRI: Jurnal Riset Ilmiah*, 2(5), 1674–1683. https://doi.org/10.55681/sentri.v2i5.850

Favier, C., Bonneau, H. P., Tran Minh, V., & Devic, J. (1976). Diagnostic endoscopique des colites ischémiques régressives Correspondance endoscopique, histologique et artériographique [Endoscopic diagnosis of regressive ischemic colitis. Endoscopic, histologic and arteriographic correlations]. *La Nouvelle presse medicale*, *5*(2), 77–79.

Fitria, L. I. C.P., Gunawan, W. B. T., Sanjaya, M.I., & Meidianing. (2022). Single-dose acute oral toxicity study of chloroform extract of snake plant (*Sansevieria trifasciata* Prain.) leaf in Wistar rats (*Rattus norvegicus* Berkenhout, 1769*). Journal of Tropical Biodiversity and Biotechnology*, 07(01), 1-20.

Fitriyana, Y. A., Iswahyuni, S., & Yuniarti, T. (2024). Perawatan Luka pada Pasien Diabetes Melitus dalam Penyembuhan Ulkus Dekubitus. *Journal of Language and Health*, 5(2), 601-612. https://doi.org/10.37287/jlh.v5i2.3584

Forbes, J. M., & Cooper, M. E. (2013). Mechanisms of diabetic complications. *Physiological Reviews*, 93(1), 137–188. https://doi.org/10.1152/physrev.00045.2011

Forslund, K., Hildebrand, F., Nielsen, T., Falony, G., Le Chatelier, E., Sunagawa, S., Prifti, E., Vieira-Silva, S., Gudmundsdottir, V., Krogh Pedersen, H., Arumugam, M., Kristiansen, K., Voigt, A.Y., Vestergaard, H., Hercog, R., Costea, P.I., Kultima, J.R., Li, J., Jørgensen, T., Levenez, F., Dore, J., MetaHIT Consortium, Nielsen, H.B., Brunak, S., Raes, J., Hansen, T., Wang, J., Ehrlich, S.D., Bork, P. & Pedersen, O., (2015). Disentangling type 2 diabetes and metformin treatment signatures in the human gut microbiota. *Nature*, 528(7581), pp.262–266.

Fusco, W., Lorenzo, M.B., Cintoni, M., Porcellato, D., Grenga, A., Zolfo, M., Paci, P., Longo, F., Boccuto, A., Bonfiglio, G., Di Cola, G., Liccardo, D., Lucchetti, D., Novelli, G., Biocca, S. and Stronati, L. (2023) 'Short-chain fatty-acid-producing bacteria: key components of the human gut microbiota', *Nutrients*, 15(9), p. 2211.

Gemede, H. F., Ratta, N., Haki, G. D., Woldegiorgis, A. Z., & Beyene, F. (2015). Nutritional quality and health benefits of okra (*Abelmoschus esculentus*): A review. *Food Science and Quality Management*, 33, 87–96.

Granato, D., Barba, F. J., Bursać Kovačević, D., Lorenzo, J. M., Cruz, A. G., & Putnik, P. (2020). Functional Foods: Product Development, Technological Trends, Efficacy Testing, and Safety. *Annual review of food science and technology*, *11*, 93–118. https://doi.org/10.1146/annurev-food-032519-051708

UNIVERSITAS
GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Gupta, V.K. and Dutta, C. (2025) 'Determinants of the healthy gut microbiome: core features, modifying factors and normal functions', *Frontiers in Microbiomes*, 4, Article 1559504.

Gurung, M., Li, Z., You, H., Rodrigues, R., Jump, D.B., Morgun, A. and Shulzhenko, N. (2020) 'Role of gut microbiota in type 2 diabetes pathophysiology', *EBioMedicine*, 51, p. 102590.

Hermes, C., Azevedo, J. F., Araújo, E. J. A., & Sant'Ana, D. M. G. (2008). Intestinal ascending colon morphometrics in rats submitted to severe protein malnutrition. *International Journal of Morphology*, 26(1), 5–11.

Inoue, T., Takimoto, T., Morita, Y., & Ishikawa, Y. (2019). Allergic colitis in infants: review of the literature. *Pediatrics International, 61*(9), 804–810. https://doi.org/10.1111/ped.13939

International Organization for Standardization (ISO), (2013). *ISO 4833-1:2013 Microbiology of the Food Chain—Horizontal Method for the Enumeration of Microorganisms—Part 1: Colony Count at 30°C by the Pour Plate Technique*. Geneva: International Organization for Standardization.

International Organization for Standardization (ISO), (2013). *ISO 7218:2013 Microbiology of Food and Animal Feeding Stuffs—General Requirements and Guidance for Microbiological Examinations*. Geneva: International Organization for Standardization.

Janda, J.M. & Abbott, S.L., (2007). 16S rRNA gene sequencing for bacterial identification in the diagnostic laboratory: pluses, perils and pitfalls. *Journal of Clinical Microbiology*, 45(9), pp.2761–2764.

Jeengar, M. K., Thummuri, D., Magnusson, M., Naidu, V. G. M., & Uppugunduri, S. (2017). Uridine ameliorates dextran sulfate sodium (DSS)-induced colitis in mice. scientific reports, 7(1), 3924. https://doi.org/10.1038/s41598-017-04041-9

Kamalia, A. Z., & Tunjung, W. A. S. (2023). Efficacy of Different Solvents in the Extraction of Bioactive Compounds and Anti-cancer Activities of Thymus vulgaris Leaves and Twigs. *Indonesian Journal of Pharmacy,* 34(3), 419–430. https://doi.org/10.22146/ijp.5959

Kannan, M. P., Sreeraman, S., Arokiyaraj, S., Sundaram, V., Babu Singh Kushwah, R., Bupesh, G., Mausoom Phukan, M., Paul, A., Thirunavukarasou, A., Almutairi, M. H., & Daniel Amalorpavanaden, N. (2024). Exploring major bioactive phytocompounds of Ficus racemosa and its key pharmacological activities. *Journal of King Saud University - Science*, 36(1), 102956. https://doi.org/10.1016/j.jksus.2023.102956

Karayiannakis, A. J., Bolanaki, H., Kouklakis, G., Dimakis, K., Memet, I., & Simopoulos, C. (2011). Ischemic colitis of the left colon in a diabetic patient. *Case reports in gastroenterology*, *5*(1), 239–245. https://doi.org/10.1159/000327981

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Kho, Z.Y. & Lal, S.K., (2018). The human gut microbiome – A potential controller of wellness and disease. *Frontiers in Microbiology*, 9, p.1835.

Khoerunisa, T. K. (2020). Review : pengembangan produk pangan fungsional di Indonesia berbasis bahan pangan lokal unggulan. *Indonesian Journal of Agricultural and Food Research,* 2(1), 49-59.

Kobayashi, T., Siegmund, B., le Berre, C., Wei, S. C., Ferrante, M., Shen, B., Bernstein, C. N., Danese, S., Peyrin-Biroulet, L., & Hibi, T. (2020). Ulcerative colitis. *Nature Reviews Disease Primers*, 6(1). https://doi.org/10.1038/s41572- 020-0205-x

Koh, A., De Vadder, F., Kovatcheva-Datchary, P., & Bäckhed, F. (2016). From dietary fiber to host physiology: Short-chain fatty acids as key bacterial metabolites. *Cell*, 165(6), 1332–1345. https://doi.org/10.1016/j.cell.2016.05.041

Krishnan, B., & Babu, S. (2013). Gastrointestinal complications of diabetes mellitus. *World Journal of Diabetes*, 4(3), 51–63.

Kurniawan, A. H. (2019). Diabetic Gastroenteropathy: A Complication of Diabetes Mellitus. *Acta Medica Indonesiana*, 51(3), 263–272.

Larsen, N., Vogensen, F.K., van den Berg, F.W.J., Nielsen, D.S., Andreasen, A.S., Pedersen, B.K., Al-Soud, W.A., Sørensen, S.J., Hansen, L.H. and Jakobsen, M. (2010). Gut microbiota in human adults with type 2 diabetes differs from non-diabetic adults. *PLoS ONE*, 5(2), e9085. https://doi.org/10.1371/journal.pone.0009085

Leboffe, M.J., & Pierce, B.E. (2015). *Microbiology: Laboratory theory and application*. 3rd ed. Englewood: Morton Publishing.

Lee, H., Ko, G., Kim, J., Sohn, E., Kim, J., Jeong, Y., Kim, D., Sim, J., Oh, H., Kim, S.Y. and Kim, B. (2015). Metformin ameliorates inflammatory bowel disease by suppression of the STAT3 signaling pathway and regulation of the between Th17/Treg balance. *PLoS ONE*, 10(9), e0135858. https://doi.org/10.1371/journal.pone.0135858

Lee, J. Y, Mannaa, M., Kim, Y., & Seo, Y. S. (2019). Comparative analysis of fecal microbiota composition between rheumatoid arthritis and osteoarthritis patients. *Genes*, 10(748), 1-14.

Liwanda N., Syukur M., Nurcholis W. (2024). Impact of genotype and harvest age on the polyphenol content and antioxidant capacity of Abelmoschus esculentus in Indonesia. *Biodiversitas*, 25(12), 4920-4929. https://doi.org/10.13057/biodiv/d251229

Madigan, M.T., Bender, K.S., Buckley, D.H., Sattley, W.M. & Stahl, D.A. (2018). *Brock biology of microorganisms*. 15th ed. New York: Pearson.

Makki, K., Deehan, E.C., Walter, J. & Bäckhed, F., (2018). The impact of dietary fiber on gut microbiota in host health and disease. *Cell Host & Microbe*, 23(6), pp.705–715.

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Malicevic, U., Rai, V., Skrbic, R., & Agrawal, D. K. (2024). NLRP3 Inflammasome and Gut Dysbiosis Linking Diabetes Mellitus and Inflammatory Bowel Disease. *Archives of internal medicine research*, *7*(3), 200–218. https://doi.org/10.26502/aimr.0178

Marisa, M. (2016). Peran serat pada modulasi mikrobiota usus pasien diabetes melitus tipe 2. *Jurnal Kedokteran Syiah Kuala*, 16(2), pp.109–113. https://doi.org/10.24815/jks.v16i2.5058

Maulani, W. & Saidah, S. (2025). Peran mikrobiota usus dalam diabetes tipe 2: Hubungan dengan disbiosis. *Jurnal Kesehatan Bakti Tunas Husada: Jurnal Ilmu-ilmu Keperawatan, Analis Kesehatan dan Farmasi*, 25(1), pp.94–103. https://doi.org/10.36465/jkbth.v25i1.1542

McCallum, G. and Tropini, C. (2024) 'The gut microbiota and its biogeography', *Nature Reviews Microbiology*, 22(2), pp. 105–118.

Mescher, A. L. (2021). *Junqueira's Basic Histology: Text and Atlas* (16th ed.). McGraw-Hill Education.

Moszkowicz, D., Mariani, A., Trésallet, C., & Menegaux, F. (2013). Ischemic colitis: The ABCs of diagnosis and surgical management. *Journal of Visceral Surgery*, 150(1), 19–28. https://doi.org/10.1016/j.jviscsurg.2013.01.002

National University of Singapore. (2025). *Colon – Normal Histology*. NUS Pathweb. Available at: https://medicine.nus.edu.sg/pathweb/normal-histology/colon/ [Accessed 26 May 2026].

Ozel, Y., Elcioglu, H. K., Cevikelli, Z. A., Kudas, I., Ahmad, S., Uzun, H., Topal, C., Aktas, S., & Kabasakal, L. (2018). Ischemic colitis of the colon in streptozotocin-induced diabetic rats. *Molecular and cellular biochemistry*, *439*(1-2), 87–93. https://doi.org/10.1007/s11010-017-3138-2

Perdani, L., Azasi, N. M., Sofyantoro, F., Nugroho, R. A., Ismai, N. I. M., & Tunjung, W. A. S. (2024). Analysis of anti-aging activity of Chinese perfume (*Aglaia odorata*) and Indian camphorweed (*Pluchea indica*) leaves using *Saccharomyces cerevisiae* model system. *Journal Research in Pharmacy*, 29(1), 396-406. https://doi.org/10.12991/jrespharm.1644627

Pereira, C. S., Guedes, R. C. A., & Silva, M. A. (2021). Morphometric evaluation of intestinal crypts and villi in experimental rat models. *Acta Histochemica*, 123(6), 151760. https://doi.org/10.1016/j.acthis.2021.151760

Peterson, L. W., & Artis, D. (2014). Intestinal epithelial cells: regulators of barrier function and immune homeostasis. *Nature Reviews Immunology*, 14(3), 141–153. https://doi.org/10.1038/nri3608

Petropoulos, S., Fernandes, Â., Barros, L., & Ferreira, I. C. F. R. (2018). Chemical composition, nutritional value and antioxidant properties of Mediterranean okra genotypes in relation to harvest stage. *Food Chemistry*, 242, 466–474. https://doi.org/10.1016/j.foodchem.2017.09.082

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
Lusiyana Prihatini, Woro Anindito Sri Tunjung, S.Si., M.Sc., Ph.D.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Pratiwi, R., Amalia, A. R., Anindito Sri Tunjung, W., & Rumiyati. (2019). Active fractions of black rice bran cv cempo ireng inducing apoptosis and S-phase cell cycle arrest in T47D breast cancer cells. *Journal of Mathematical and Fundamental Sciences*, 51(1), 47–59. https://doi.org/10.5614/j.math.fund.sci.2019.51.1.4

Putri, A. F., Utomo, D. H., Tunjung, W. A. S., & Putri, W. A. (2024). Analysis of the anti-Alzheimer potential of bioactive compounds from Citrus hystrix DC. peel, leaf, and essential oil by network pharmacology. *Heliyon,* 10(13). https://doi.org/10.1016/j.heliyon.2024.e33496

Putri, N.E.M. (2020). Hubungan gut microbiota dan diabetes melitus tipe 2. *Center for Food and Nutrition Studies Universitas Gadjah Mada*. Available at: Center for Food and Nutrition Studies UGM [Accessed 27 May 2026].

Rautela, D. S., Das, S., Mazumder, A., Sharma, B., Khan, F., & Chaitanya, M. V. N. L. (2024). Understanding the influence of diabetes on wound healing and exploring effective management study. *Current Science*, 126(12), 1438 1445. https://doi.org/10.18520/cs/v126/i12/1438-1445

Rena, G., Hardie, D.G. & Pearson, E.R. (2017). The mechanisms of action of metformin. *Diabetologia*, 60(9), pp.1577–1585. https://doi.org/10.1007/s00125-017-4342-z

Roberfroid, M. B. (2007). Inulin-type fructans: Functional food ingredients. *The Journal of Nutrition, 137*(11), 2493S–2502S. https://doi.org/10.1093/jn/137.11.2493S

Sa'adah, N. N. K. I., Purwani, A. P. D., Nurhayati, & Ashuri, N. M. (2017). Analysis of lipid profile and atherogenic index in hyperlipidemic rat (*Rattus norvegicus* Berkenhout, 1769) that given the methanolic extract of Parijoto (*Medinilla speciosa*). *AIP Conference Proceedings,* 1854: 1-8. https://doi.org/10.1063/1.4985422

Sani, F., Widiastuti, A., Ulkhasanah, M., & Amin, N. (2023). Gambaran Kualitas Hidup pada Pasien Diabetes Melitus. *Jurnal Penelitian Perawat Profesional*, 5(3), 1151-1158. https://doi.org/10.37287/jppp.v5i3.1708

Sekirov, I., Russell, S.L., Antunes, L.C.M. and Finlay, B.B. (2010) 'Gut microbiota in health and disease', *Physiological Reviews*, 90(3), pp. 859–904.

Setyawan, M. (2025). *Menyingkap Manfaat Tersembunyi Okra: Keajaiban Dalam Setiap Gigitan*. Yogyakarta: Cahaya Harapan.

Siddique, M. H., Ashraf, A., Hayat, S., Aslam, B., Fakhar-e-Alam, M., Muzammil, S., Atif, M., Shahid, M., Shafeeq, S., Afzal, M., Afzal, M., & Ahmad, S. (2022). Antidiabetic and antioxidant potentials of Abelmoschus esculentus: In vitro combined with molecular docking approach. *Journal of Saudi Chemical Society*, 26,(2). https://doi.org/10.1016/j.jscs.2021.101418

Singh, K., Murti, Y., Sanduja, M., Sharma, A. K., Vibha, Bansal, S., Shukla, K. S., & Kulshreshtha, M. (2023). Botanical, phytochemical and pharmacological aspects of Livistona chinensis: A traditional Chinese plant.

UNIVERSITAS GADJAH MADA
Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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Pharmacological Research - Modern Chinese Medicine, 9, 100301. https://doi.org/10.1016/j.prmcm.2023.100301

Sommer, F. and Bäckhed, F. (2013) 'The gut microbiota—masters of host development and physiology', *Nature Reviews Microbiology*, 11(4), pp. 227–238.

Sousa, M. V., Martinez, C. A. R., Priolli, D. G., Pereira, J. A., Portes, A. V., & Margarido, N. F. (2008). Evaluation by computerized morphometry of histopathological alterations of the colon wall in segments with and without intestinal transit in rats. *Acta Cirúrgica Brasileira*, 23(5), 417–424.

Szkudelski, T. (2001). The mechanism of alloxan and streptozotocin action in β-cells of the rat pancreas. *Physiological Research*, 50(6), pp.537–546. Available at: https://pubmed.ncbi.nlm.nih.gov/11829314/

Thaiss, C.A., Levy, M., Grosheva, I., Zheng, D., Soffer, E., Blacher, E., Braverman, S., Tengeler, A.C., Barak, O., Elazar, M., Ben-Zeev, R., Lehavi-Regev, D., Katz, M.N., Pevsner-Fischer, M., Gertler, A., Halpern, Z., Aharoni, A., Amit, I., Segal, E. and Elinav, E. (2018). Hyperglycemia drives intestinal barrier dysfunction and risk for enteric infection', *Science*, 359(6382), pp. 1376–1383.

Thursby, E. and Juge, N. (2017). Introduction to the human gut microbiota', *Biochemical Journal*, 474(11), pp. 1823–1836.

Tilg, H., & Moschen, A. R. (2014). Microbiota and diabetes: An evolving relationship. BMJ Publishing Group, 63(9), 1-21. 10.1136/gutjnl-2014-306928

Tunjung, W. A. S., & Sayekti, P. R. (2019). Apoptosis induction on human breast cancer T47D cell line by extracts of Ancorina sp. *F1000Research,* 8. https://doi.org/10.12688/f1000research.17584.2

Ungaro, R., Mehandru, S., Allen, P. B., Peyrin-Biroulet, L., & Colombel, J. F. (2017). Ulcerative colitis. *The Lancet, 389*(10080), 1756–1770. https://doi.org/10.1016/S0140-6736(16)32126-2

Villanacci, V., Reggiani-Bonetti, L., Leoncini, G., Parente, P., Cadei, M., Albarello, L., Mandelli, G. and Caputo, A. (2021). Histopathology of non-IBD colitis: A practical approach from the Italian Group for the Study of the Gastrointestinal Tract (GIPAD). *Pathologica*, 113(1), pp.54–65. https://doi.org/10.32074/1591-951X-234

Wu, D.-T., Nie, X.-R., Shen, D.-D., Li, H.-Y., Zhao, L., Zhang, Q., Lin, D.-R., & Qin, W. (2020). Phenolic Compounds, Antioxidant Activities, and Inhibitory Effects on Digestive Enzymes of Different Cultivars of Okra (Abelmoschus esculentus). *Molecules,* 25(6), 1276. https://doi.org/10.3390/molecules25061276

Yan Q., Cui S., Chen C., Li S., Sha S., & Wan X. (2016). Metagenomic analysis of sputum microbiome as a tool toward culture-independent pathogen

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Evaluasi Pemberian Pakan Okra (Abelmoschus esculentus L.) Terhadap Histopatologi dan Populasi Bakteri Kolon pada Tikus Wistar (Rattus Norvegicus Berkenhout, 1769) Model Diabetes Melitus Kronis
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detection of patients with ventilator-associated pneumonia. *Am. J. Respir. Crit. Care Med.* 194, 636–639. 10.1164/rccm.201601-0034LE

Zhang, M., Zhang, Y., & Xia, Y. (2021). Role of cytokines in the pathogenesis of inflammatory bowel disease. *Frontiers in Immunology, 12*, 665368. https://doi.org/10.3389/fimmu.2021.665368