

DAFTAR PUSTAKA

- Abdulla, M., Agarwal, D., & Singh, J. K. (2021). Association of the microbiome with colorectal cancer development (Review), *7805(37)*, 1–12. <https://doi.org/10.3892/ijo.2021.5197>
- Akutko, K.; Stawarski, A. (2021). Probiotik, Prebiotik dan Sinbiotik pada Penyakit Radang Usus. *J.Clin. Kedokteran*, *10*, 2466. <https://doi.org/10.3390/jcm10112466>
- Alizadeh S, Esmaeili A, & Omidi Y. (2020). Anti-cancer properties of Escherichia coli Nissle 1917 against HT-29 colon cancer cells through regulation of Bax/Bcl-xL and AKT/ PTEN signaling pathways. *Iranian Journal of Basic Medical Sciences*. *23*:886-893. doi: 10.22038/ijbms.2020.43016.10115.
- Anders, H. J., & Ryu, M. (2011). Renal microenvironments and macrophage phenotypes determine progression or resolution of renal inflammation and fibrosis. *Kidney International*, *80(9)*, 915–925. <https://doi.org/10.1038/ki.2011.217>
- Ballini A, Santacroce L, Cantore S, Bottalico L, Dipalma G, Topi S, Saini R, De Vito D, Inchingolo F. (2019). Probiotics efficacy on oxidative stress values in inflammatory bowel disease: a randomized double-blinded placebo-controlled pilot study. *Endocr Metab Immune Disord Drug Targets*. *19*:373–381. doi:10.2174/1871530319666181221150352.
- Benchimol, E. I., Fortinsky, K. J., Gozdyra, P., Van Den Heuvel, M., Van Limbergen, J., & Griffiths, A. M. (2011). Epidemiology of pediatric inflammatory bowel disease: A systematic review of international trends. *Inflammatory Bowel Diseases*, *17(1)*, 423–439. <https://doi.org/10.1002/ibd.21349>
- Budijanto, S., Nurtiana, W., Muniroh, A., Kurniati, Y., Nuraida, L., Priosoeryanto, B. P., ... Shirakawa, H. (2023). Dietary supplementation of black rice bran to colon carcinogen-induced mice: Examining the development of colorectal cancer by improving environmental colon conditions. *Heliyon*, *9(8)*, e18528. <https://doi.org/10.1016/j.heliyon.2023.e18528>
- Chanmee T, Ontong, T., Kanno, K., Itano N. (2014). Tumor-Associated macrophages as major players in the tumor microenvironment. *Cancer* *6*:1670-90.
- C. Humblot, M. Murkovic, L. Rigottier-Gois, M. Bensaada, A. Bouclet, C. Adrioux, J. Anba, S. Rabot. (2007). β -glucuronidase in human intestinal microbiota is necessary for the colonic genotoxicity of thr food-borne carcinogen 2-amini-3-methylimidazo[4,5-f] quinoline in rats, *Carcinogenesis* *28 (11)* 2419–2425, <https://doi.org/10.1093/carcin/bgm170>.

- Chen H., Lei P., Ji H., Yang Q., Peng B., Ma J, Fang Y, Qu L, Li H, Wu W, Jin L., Sun D. (2023). Advances in Escherichia coli Nissle 1917 as a customizable drug delivery system for disease treatment and diagnosis strategies. *Materials Today Bio ELSEVIER*. <https://doi.org/10.1016/j.mtbio.2023.100543>
- Chen WG, Liu FL, Ling ZX, Tong XJ, Xiang C. (2012). Lumen usus manusia dan mikrobiota terkait mukosa pada pasien dengan kanker kolorektal. *PLoS SATU* 7(6):9.<https://doi.org/10.1371/journal.pone.0039743>
- Chiang, C. J., & Hong, Y. H. (2021). In situ delivery of biobutyrate by probiotic Escherichia coli for cancer therapy. *Scientific Reports*, 11(1), 1–17. <https://doi.org/10.1038/s41598-021-97457-3>
- Cristofori, F., Dargenio, V. N., Dargenio, C., Miniello, V. L., Barone, M., & Francavilla, R. (2021). Anti-Inflammatory and Immunomodulatory Effects of Probiotics in Gut Inflammation: A Door to the Body. *Frontiers in Immunology*, 12(February), 1–21. <https://doi.org/10.3389/fimmu.2021.578386>
- De Robertis M, Massi E, Poeta ML, Carotti S, Morini S, Cecchetelli L, Signori E, Fazio VM. Model murine AOM/DSS untuk studi karsinogenesis usus besar: dari jalur hingga studi diagnosis dan terapi. *J Karsinog*.2011;10:9. doi:10.4103/1477-3163.78279
- D.H. Kim, Y.H. Jin. (2001). Intestinal bacterial β -glucuronidase activity of patients with colon cancer, *Arch Pharm. Res.* 24 (6): 564–567, <https://doi.org/10.1007/BF02975166>
- Dong, Y., Yang, Q., Niu, R., Zhang, Z., Huang, Y., Bi, Y., Liu, G. (2022). Modulation of Cell., tumor-associated macrophages in colitis-associated colorectal cancer. *J. Physiol. J.Physiol.*, 237(4443–4459.).
- Dörsam, B., Seiwert, N., Foersch, S., Stroh, S., Nagel, G., Begaliew, D., & Diehl, E. (2018). PARP-1 protects against colorectal tumor induction , but promotes inflammation-driven colorectal tumor progression, 115(17), 4061–4070. <https://doi.org/10.1073/pnas.1712345115>
- Foersch, S., & Neurath, M. F. (2014). Colitis-associated neoplasia: Molecular basis and clinical translation. *Cellular and Molecular Life Sciences*, 71(18), 3523–3535. <https://doi.org/10.1007/s00018-014-1636-x>.
- Gallo, G.; Kotze, PG; Spinelli, A. (2018).Pembedahan pada kolitis ulserativa: Kapan? Bagaimana?Praktik Terbaik. *Res. klinik. Gastroenterol.* 32–33, 71–78. [CrossRef]
- Gore, R., Riedl, M.S., Kitto, K.F., Fairbanks, C.A., dan Vulchanova, L., 2019. AAV-Mediated Gene Delivery to the Enteric Nervous System by Intracolonic Injection, Adeno-Associated Virus Vectors,: 407–415.

- Gwak, J. M., Jang, M. H., Kim, D. Il, Seo, A. N., & Park, S. Y. (2015). Prognostic value of tumor-associated macrophages according to histologic locations and hormone receptor status in breast cancer. *PLoS ONE*, *10*(4), 1–14. <https://doi.org/10.1371/journal.pone.0125728>
- Hanahan, D., & Weinberg, R. A. (2011). Review Hallmarks of Cancer : The Next Generation. *Cell*, *144*(5), 646–674. <https://doi.org/10.1016/j.cell.2011.02.013>
- Hu JM, Liu K, Liu JH, Jiang XL, Wang XL, Chen YZ. (2017). Cd163 as a marker of m2 macrophage, contribute to prediecte aggressiveness and prognosis of kazakh esophageal squamous cell carcinoma. *Oncotarget*. *8*(13):21526- 38. <https://doi.org/10.18632/oncotarget.15630>.
- Hu R., Hua Lin., Jing Li, Yuezhen Zhao., Mimi Wang., Xiaoqin Sun., Yuna Min, Yupeng Gao, and Mingming Yang. (2020). Probiotic Escherichia coli Nissle 1917- derived outer membrane vesicles enhance immunomodulation and antimicrobial activity in RAW264.7 macrophages. *BMC Microbiology*. *20*:268. <https://doi.org/10.1186/s12866-020-01953-x>.
- Hung, C. H., Chen, F. M., Lin, Y. C., Tsai, M. L., Wang, S. L., Chen, Y. C., ... Hou, M. F. (2018). Altered monocyte differentiation and macrophage polarization patterns in patients with breast cancer. *BMC Cancer*, *18*(1), 1–9. <https://doi.org/10.1186/s12885-018-4284-y>
- Hymie Cherik R. Sangma a, S. Parameshwari a, a. (2022). Health benefits of black rice (Zizania aqatica) - a review. *The American Journal of Chinese Medicine*, *Vol. 50*(xxxx), 3380–3384. <https://doi.org/10.1016/j.matpr.2021.07.257>
- Isidro, R. A., & Appleyard, C. B. (2016). Colonic macrophage polarization in homeostasis, inflammation, and cancer. *American Journal of Physiology - Gastrointestinal and Liver Physiology*, *311*(1), G59–G73. <https://doi.org/10.1152/ajpgi.00123.2016>.
- Janakiram NB, Rao CV. (2014). The role of inflammation in colon cancer. *Adv Exp Med Biol*. *816*:25-52. https://doi.org/10.1007/978-3-0348-0837-8_2.
- Jung Y.S., Kim, D.H., Hwang, J.Y., Yun, N.Y. (2014). Anti-inflammatory effect of tricetin 40-O ether, a novel flavonolignan compound isolated from Njavara on in RAW264.7 cell and in ear mice edema. *Toxicology and Applied pharmacology*. *227*:67-76.
- Jurk D, Wilson C, Passos JF, Oakley F, Correia-Melo C, Greaves L, Saretzki G, Fox C, Lawless C, Anderson R. (2014) Chronic inflammation induces telomere dysfunction and accelerates ageing in mice. *Nat Commun*. *5*:4172. doi:10.1038/ncomms5172.
- Keller, D. S., & Chand, R. C. M. (2019). Colorectal cancer in inflammatory bowel disease : review of the evidence. *Techniques in Coloproctology*, *23*(1), 3–13.

<https://doi.org/10.1007/s10151-019-1926-2>

- Khan, M. A. S., Hakeem, A. R., Scott, N., & Saunders, R. N. (2015). Significance of R1 resection margin in colon cancer resections in the modern era. *Colorectal Disease*, 17(11), 943–953. <https://doi.org/10.1111/codi.12960>
- Khoramian, L., Sajjadi, S.-E., dan Minaiyan, M., 2020. Anti-inflammatory effect of Adiantum capillus-veneris hydroalcoholic and aqueous extracts on acetic acid-induced colitis in rats. *Avicenna Journal of Phytomedicine*. 10: 492- 503
- Kinzler KW, Vogelstein B. (1996). Lessons from hereditary colorectal cancer. *Cell* ;87:159-70.
- Koelink P. J., Wildenberg M. E., Larry W. Stitt, Brian G. Feagan, Martin Koldijk, Angélique B. van 't Wout, Raja Atreya, Michael Vieth, Johannan F. Brandse, Suzanne Duijst, Anje A. te Velde, Geert R. A. M. D'Haens, Barrett G. Levesque, Gijs R. van den Brinka. (2018). Development of Reliable, Valid and Responsive Scoring Systems for Endoscopy and Histology in Animal Models for Inflammatory Bowel Disease. *Journal of Crohn's and Colitis*. 794–803. DOI:10.1093/ecco-jcc/jyy035.
- Kushwaha, U. K. S. (2016). Black rice: Research, history and development. *Black Rice: Research, History and Development*, 1–192. <https://doi.org/10.1007/978-3-319-30153-2>
- Lawrence N. Kwong^{1, 3} and William F. Dove¹. (2009). APC and its modifiers in colon cancer. *Adv Exp Med Biol*, 656, 85–106.
- Lee, C., P. Su, P. Lin, H. Tsai, C. Lam, B. Lin, et al. 2016. Reappraisal of the Significance of Inducible Nitric Oxide Synthase in Colorectal Cancer. *J Cell Sci Ther* 7(2): 1 – 6.
- Lescheid, D. W. (2014). Probiotics as regulators of inflammation: A review. *Functional Foods in Health and Disease*, 4(7), 299–311. <https://doi.org/10.31989/ffhd.v4i7.2>
- Lin, X., Yi, Z., Diao, J., Shao, M., Zhao, L., Cai, H., ... Sun, X. (2014). ShaoYao decoction ameliorates colitis-associated colorectal cancer by downregulating proinflammatory cytokines and promoting epithelial-mesenchymal transition. *Journal of Translational Medicine*, 12(1), 1–13. <https://doi.org/10.1186/1479-5876-12-105>
- Ling, Q., Fang, J., Zhai, C., Huang, W., Chen, Y., Zhou, T., ... Fang, X. (2023). Berberine induces SOCS1 pathway to reprogram the M1 polarization of macrophages via miR-155–5p in colitis-associated colorectal cancer. *European Journal of Pharmacology*, 949(December 2022), 175724. <https://doi.org/10.1016/j.ejphar.2023.175724>
- Liu J, Geng X, Hou J, Wu G. (2021). New insights into m1/m2 macrophages: Key

- modulators in cancer progression. *Cancer Cell Int.* 21(1):389. <https://doi.org/10.1186/s12935-021-02089-2>.
- Liu, M., Xie, W., Wan, X., & Deng, T. (2020). Clostridium butyricum modulates gut microbiota and reduces colitis associated colon cancer in mice. *International Immunopharmacology*, 88(August), 106862. <https://doi.org/10.1016/j.intimp.2020.106862>
- Louis, P., G. L. Hold & H. J. Flint. (2014). The Gut Microbiota, Bacterial Metabolites and Colorectal Cancer. *Nat. Rev. Microbiol* 1 – 12.
- Long AG, Lundsmith ET, Hamilton KE. Inflammation and colorectal cancer. (2017). *Curr Colorectal Cancer Rep.* 13(4):341-51. <https://doi.org/10.1007/s11888-017-0373-6>.
- Maryńczak, K., Włodarczyk, J., Sabatowska, Z., Dziki, A., Dziki, Ł., & Włodarczyk, M. (2022). Colitis-Associated Colorectal Cancer in Patients with Inflammatory Bowel Diseases in a Tertiary Referral Center: A Propensity Score Matching Analysis. *Journal of Clinical Medicine*, 11(3). <https://doi.org/10.3390/jcm11030866>
- Missiaglia, E., Jacobs, B., Ario, G. D., Narzo, A. F. Di, Sonesson, C., Budinska, E., ... Tejpar, S. (2014). of molecular , pathological , and clinical features. *Annals of Oncology*, 25(10), 1995–2001. <https://doi.org/10.1093/annonc/mdu275>
- Murphy N, Norat T, P. Ferrari, M. Jenab, B. Bueno-des-Mesquita, G. Skeie, C.C. Dahm, K. Overad, A. Olsen, A. Tjonneland, A. Racine. (2012). Dietary fibre intake and risks of cancers of the colon and rectum in the European prospective investigation into cancer and nutrition (EPIC), *PLoS One* 7. (6) 1–10, <https://doi.org/10.1371/journal.pone.0039361>.
- Na, Y. R., Stakenborg, M., Seok, S. H., & Matteoli, G. (2019). Macrophages in intestinal inflammation and resolution: a potential therapeutic target in IBD. *Nature Reviews Gastroenterology and Hepatology*, 16(9), 531–543. <https://doi.org/10.1038/s41575-019-0172-4>
- Nardone, O.M., Zammarchi, I., Santacroce, G., Ghosh, S., Iacucci, M. (2023). Inflammation-Driven Colorectal Cancer Associated with Colitis: From Pathogenesis to Changing Therapy. *MDPI Cancers*. 15, 2389. <https://doi.org/10.3390/cancers15082389>
- Parang B, Barrett CW, Williams CS. (2016). AOM/DSS model of colitis-associated cancer. In: Williams CS editor. *Gastrointestinal physiology and diseases*. New York (NY): Springer. p. 297–307.
- Park, C and Han, J.T., (2016). Anti-inflammatory Effect of flavokavain C from kava root in the LPS-induced Macrophage. *Journal of Society of cosmetic scientist of korea*. 42 (2): 311-320.

- Park, K. Park, S. Nagappan, A. Ray, N. Kim, J. Yoon, S. Moon, Y. (2021). Probiotic Escherichia coli Ameliorates Antibiotic-Associated Anxiety Responses in Mice. *Nutrients*, 13, 811. <https://doi.org/10.3390/nu13030811>
- Pritchard CC, Grady WM. (2010). Colorectal cancer molecular biology moves into clinical practice. *Gut* 60: 116 –129.
- Pushpagadan, P., ijinu, T.P., George, V. (2015). Standardized Method for the determination of Antioxidant Capacity and phenolics in food and dietary supplements. *journal agricultural food and chemistry*. 55(2698).
- Rivollier A, He J, Kole A, Valatas V, Kelsall BL (2012). Inflammation switches the differentiation program of Ly6Chi monocytes from anti-inflammatory macrophages to inflammatory dendritic cells in the colon. *J Exp Med* 209: 139 –155.
- Robertis, M. D., Massi, E., Poeta, M. L., Carotti, L., Morini, S., Cecchetelli, L., Signori, V., Fazio, V. M., (2011). The AOM/DSS murine model for the study of colon carcinogenesis: From pathways to diagnosis and therapy studies. *Journal of Carcinogenesis*. 10:9.
- Rodríguez-Nogales, A., Algieri, F., Garrido-Mesa, J., Vezza, T., Utrilla, M. P., Chueca, N., ... Gálvez, J. (2018). The administration of Escherichia coli Nissle 1917 ameliorates development of DSS-induced colitis in mice. *Frontiers in Pharmacology*, 9(MAY), 1–12. <https://doi.org/10.3389/fphar.2018.00468>
- Rukmana, R. M., Soesilo, N. P., & Pratiwi, R. (2016). The effect of ethanolic extract of black and white rice bran (Oryza sativa L.) on cancer cells. *Indonesian Journal of Biotechnology*, 21(1), 63–69.
- Santoni, M., Romagnoli, E., Saladino, T., Foghini, L., Guarino, S., Capponi, M., ... Battelli, N. (2018). Triple negative breast cancer: Key role of Tumor-Associated Macrophages in regulating the activity of anti-PD-1/PD-L1 agents. *Biochimica et Biophysica Acta - Reviews on Cancer* (Vol. 1869). Elsevier B.V. <https://doi.org/10.1016/j.bbcan.2017.10.007>
- Scaldeferri, F., Gerardi, V., Mangiola, F., Lopetuso, L. R., Pizzoferrato, M., Petito, V., ... Gasbarrini, A. (2016). Role and mechanisms of action of Escherichia coli nissle 1917 in the maintenance of remission in ulcerative colitis patients: an update. *World Journal of Gastroenterology*, 22(24), 5505–5511. <https://doi.org/10.3748/wjg.v22.i24.5505>
- Selamoglu, Z., Ozgen, S.U.O., and Amin, K. (2018). Plant secondary metabolites with antioxidant properties and human health. *Researchgate*. Volume 1.
- Senol, A., Isler, M., Sutcu, R., Akin, M., Cakir, E., Ceyhan, B. M., and Kockar, M. C. (2015). Kefir treatment ameliorates dextran sulfate sodium-induced colitis in rats. *World Journal of Gastroenterology*, 21(46), 13020–13029.

<https://doi.org/10.3748/wjg.v21.i46.13020>

- S.N. Ukena, S. Anurag, D. Ulrike, E. Regina, S. Ursula, H. Wiebke. (2007). Probiotic Escherichia coli Nissle 1917 inhibits leaky gut by enhancing mucosal integrity, *PLoS One* 2.e1308
- Stritzker, J., Weibel, S., Hill, P. J., Oelschlaeger, T. A., Goebel, W., & Szalay, A. A. (2007). Tumor-specific colonization, tissue distribution, and gene induction by probiotic Escherichia coli Nissle 1917 in live mice. *International Journal of Medical Microbiology*, 297(3), 151–162. <https://doi.org/10.1016/j.ijmm.2007.01.008>
- Sui, H., Tan, H., Fu, J., Song, Q., Jia, R., Han, L., ... Xu, H. (2020). The active fraction of *Garcinia yunnanensis* suppresses the progression of colorectal carcinoma by interfering with tumor-associated macrophage-associated M2 macrophage polarization in vivo and in vitro. *FASEB Journal*, 34(6), 7387–7403. <https://doi.org/10.1096/fj.201903011R>
- Sunkara S, Swanson G, Forsyth C.B, Keshavarzian A. (2011). Chronic Inflammation and Malignancy in Ulcerative Colitis. *Ulcers*. Vol 8. doi:10.1155/2011/714046
- Takahashi M, Mutoh M, Kawamori T, Sugimura T, Wakabayashi K. (2000). Altered expression of beta-catenin, inducible nitric oxide synthase and cyclooxygenase-2 in azoxymethane-induced rat colon carcinogenesis. *Carcinogenesis*, 21:1319-27.
- Thaker, AI, Shaker, A., Rao, MS, Ciorba, MA Memodelkan Kanker Terkait Kolitis dengan Azoxymethane (AOM) dan Dextran Sulfate Sodium (DSS). *J.Vis. Exp.*(67), e4100 10.3791/4100, DOI : 10.3791/4100 (2012).
- Thanuja, B., & Parimalavalli, R. (2018). Role of Black Rice in Health and Diseases. *International Journal of Health Sciences & Research*, 8(2), 241–248. Retrieved from www.ijhsr.org
- Tinh, N. T. T., Sitolo, G. C., Yamamoto, Y., & Suzuki, T. (2021). Citrus limon Peel Powder Reduces Intestinal Barrier Defects and Inflammation in a Colitic Murine Experimental Model. *Food MDPI Journal*, 10(240), 1–15.
- Tungland, B. C., & Meyer, D. (2002). Nondigestible oligo- and polysaccharides (dietary fiber): Their physiology and role in human health and food. *Comprehensive Reviews in Food Science and Food Safety*, 1(3), 90–109. <https://doi.org/10.1111/j.1541-4337.2002.tb00009.x>
- Ullman, T. A., & Itzkowitz, S. H. (2011). Intestinal inflammation and cancer. *Gastroenterology*, 140(6), 1807-1816.e1. <https://doi.org/10.1053/j.gastro.2011.01.057>
- Vermeulen, L., F. D. E. Melo, M. van der Heijden, K. Cameron, J. H. de Jong, T.

- Borovski, et al. (2010). Wnt activity defines colon cancer stem cells and is regulated by the microenvironment. *Nat Cell Biol* 12(5): 468 – 477.
- Wang, J., Wang, Q., Guan, Y., Sun, Y., Wang, X., Lively, K., ... Fan, D. (2022). Breast cancer cell-derived microRNA-155 suppresses tumor progression via enhancing immune cell recruitment and antitumor function. *Journal of Clinical Investigation*, 132(19). <https://doi.org/10.1172/JCI157248>
- Wang Y, Matahari1, G., Chen, S., Guo S., Yue T., Hou, Q., Feng M., Xu, H., Liu, Y., Wang, P., Pan Y. (2019). The administration of Escherichia coli Nissle 1917 ameliorates irinotecan-induced intestinal barrier dysfunction and gut microbial dysbiosis in mice. *Life Sciences Elsevier*. <https://doi.org/10.1016/j.lfs.2019.06.004>.
- Wirtz, S., Popp, V., Kindermann, M. (2017). Chemically induced mouse models of acute and chronic intestinal inflammation. *Nat Protoc* 12, 1295–1309. <https://doi.org/10.1038/nprot.2017.044>.
- Xue, Q., Yingchun Yan, Ruihua Zhang, and Huabao Xiong. (2018). Regulation of iNOS on Immune Cells and Its Role in Diseases. *International journal of molecular sciences*. 19(12): 3805. doi: 10.3390/ijms19123805
- Yishan Zhou, Shuangli Xiang, Haoyi Zheng, Ying Hou. Ying Wang, Chuang-Chuang Li, Qin Wu, J. S. and X. C. (2022a). Active fractions of black rice bran cv cempo ireng inducing apoptosis and S-phase cell cycle arrest in T47D breast cancer cells. *The American Journal of Chinese Medicine*, Vol. 50(1), 47–59. <https://doi.org/10.5614/j.math.fund.sci.2019.51.1.4>
- Yishan Zhou, Shuangli Xiang, Haoyi Zheng, Ying Hou. Ying Wang, Chuang-Chuang Li, Qin Wu, J. S. and X. C. (2022b). Black rice as a functional food in Indonesia. *The American Journal of Chinese Medicine*, Vol. 50(3), 182–194. <https://doi.org/10.31989/ffhd.v7i3.310>
- Yishan Zhou, Shuangli Xiang, Haoyi Zheng, Ying Hou. Ying Wang, Chuang-Chuang Li, Qin Wu, J. S. and X. C. (2022c). Black Rice Bran Extracts and Fractions Containing Cyanidin 3-glucoside and Peonidin 3-glucoside Induce Apoptosis in Human Cervical Cancer Cells. *The American Journal of Chinese Medicine*, Vol. 50(1), 69. <https://doi.org/10.22146/ijbiotech.15271>
- Yishan Zhou, Shuangli Xiang, Haoyi Zheng, Ying Hou. Ying Wang, Chuang-Chuang Li, Qin Wu, J. S. and X. C. (2022d). Neferine Suppresses Experimental Colitis-Associated Colorectal Cancer by Inhibition of NF-kB p65 and STAT3. *The American Journal of Chinese Medicine*, 50. No.5. <https://doi.org/10.1142/S0192415X22500598>
- Yonata dan Muin F, (2016). Penggunaan probiotik sebagai terapi Diare, Bagian ilmu penyakit dalam. *Fakultas Kedokteran*. Universitas Lampung.

- Zaki, H., Vogel, P., Malireddi, R. K. S., Body-malapel, M., Anand, P. K., Bertin, J., ... Kanneganti, T. (2011). Article The NOD-Like Receptor NLRP12 Attenuates Colon Inflammation and Tumorigenesis. *Cancer Cell*, 20(5), 649–660. <https://doi.org/10.1016/j.ccr.2011.10.022>
- Zeng H, Lazarova D.L, Bordonaro M. (2014). Mechanisms linking dietary fiber, gut microbiota and colon cancer prevention, *World J. Gastrointest. Oncol.* 6 (2) 41–51, <https://doi.org/10.4251/wjgo.v6.i2.41>.
- Zhang, Q., Y. Wu, J. Wang, G. Wu, W. Long, Z. Xue, et al. (2015). Accelerated dysbiosis of gut microbiota during aggravation of DSS-induced colitis by a butyrate- producing bacterium. *Sci Rep* 6 (27572): 1 – 11.
- Zhang, X., Wei, L., Wang, J., Qin, Z., Wang, J., Lu, Y., ... Ma, J. (2017). Suppression colitis and colitis-associated colon cancer by anti-S100a9 antibody in mice. *Frontiers in Immunology*, 8(DEC). <https://doi.org/10.3389/fimmu.2017.01774>
- Zhu, Y.; Sun, H.; He, S.; Lou, Q.; Yu, M.; Tang, M.; Tu, L. (2018). Metabolism and prebiotics activity of anthocyanins from black rice (*Oryza sativa* L.) in vitro. *PLoS ONE*, 13, e0195754.

Paten

- Purwestri, Y. A., Pratiwi, R., Nuringtyas, T. Ri., Rumiati, Fauzia, A. N., & Garusti. (2022). *Makanan Fungsional Berbahan Dasar Beras Hitam dan Proses Pembuatan.*