

## DAFTAR PUSTAKA

1. McHardy IH, Wu M, Shimizu-Cohen R, Roger Couturier M, Humphries RM. Detection of intestinal protozoa in the clinical laboratory. *J Clin Microbiol.* 2014;52(3):712–20.
2. Tan KSW. Blastocystis in humans and animals: New insights using modern methodologies. *Vet Parasitol.* 2004;126(1-2):121–44.
3. Javanmard E, Niyiyati M, Ghasemi E, Mirjalali H, Asadzadeh Aghdaei H, Zali MR. Impacts of human development index and climate conditions on prevalence of Blastocystis: A systematic review and meta-analysis. *Acta Trop.* 2018;185:193–203.
4. Staf Pengajar Departemen Parasitologi. *Parasitologi Kedokteran.* edisi keem. Jakarta: FK UI; 2013:179.
5. Popruk S, Adao DE V., Rivera WL. Epidemiology and subtype distribution of Blastocystis in humans: A review. *Infect Genet Evol.* 2021;95(3):105085.
6. Khorshidvand Z, Khazaei S, Amiri MR, Taherkhani H, Mirzaei A. Worldwide prevalence of emerging parasite Blastocystis in immunocompromised patients: A systematic review and meta-analysis. *Microb Pathog.* 2021;152(8):104615.
7. Bart A, Wentink-Bonnema EMS, Gilis H, Verhaar N, Wassenaar CJA, van Vugt M, et al. Diagnosis and subtype analysis of Blastocystis sp. in 442 patients in a hospital setting in the Netherlands. *BMC Infect Dis.* 2013;13(1):2–7.
8. Tan KSW. New insights on classification, identification, and clinical relevance of Blastocystis spp. *Clin Microbiol Rev.* 2008;21(4):639–65.
9. Pramestuti N, Saroh D. Blastocystis hominis: Protozoa Usus Potensial Penyebab Diare. *Sel J Penelit Kesehatan.* 2017;4(1):1–12.
10. Sekar U, Shanthi M. Recent insights into the genetic diversity, epidemiology and clinical relevance of Blastocystis species. *J Med Res.* 2015;1(1):33–9.
11. Rauff-Adedotun AA, Termizi FHM, Shaari N, Lee IL. The coexistence of blastocystis spp. In humans, animals and environmental sources from 2010–2021 in Asia. *Biology (Basel).* 2021;10(10):1–40.

12. Popruk S, Adao DE V., Rivera WL. Epidemiology and subtype distribution of *Blastocystis* in humans: A review. *Infect Genet Evol.* 2021;95(11):105085.
13. Nemati S, Zali MR, Johnson P, Mirjalali H, Karanis P. Molecular prevalence and subtype distribution of *Blastocystis* sp. In Asia and in Australia. *J Water Health.* 2021;19(5):687–704.
14. El Safadi D, Cian A, Nourrisson C, Pereira B, Morelle C, Bastien P, et al. Prevalence, risk factors for infection and subtype distribution of the intestinal parasite *Blastocystis* sp. from a large-scale multi-center study in France. *BMC Infect Dis.* 2016;16(1):1–11.
15. Abu-Madi M, Aly M, Behnke JM, Clark CG, Balkhy H. The distribution of *Blastocystis* subtypes in isolates from Qatar. *Parasites and Vectors.* 2015;8(1):4–10.
16. Sarzhanov F, Dogruman-Al F, Santin M, Maloney JG, Gureser AS, Karasartova D, et al. Investigation of neglected protists *blastocystis* sp. And *Dientamoeba fragilis* in immunocompetent and immunodeficient diarrheal patients using both conventional and molecular methods. *PLoS Negl Trop Dis.* 2021;15(10):1–23.
17. Wong KHS, Ng GC, Lin RTP, Yoshikawa H, Taylor MB, Tan KSW. Predominance of subtype 3 among *Blastocystis* isolates from a major hospital in Singapore. *Parasitol Res.* 2008;102(4):663–70.
18. Hamdy DA, Abd El Wahab WM, Senosy SA, Mabrouk AG. *Blastocystis* spp. and *Giardia intestinalis* co-infection profile in children suffering from acute diarrhea. *J Parasit Dis.* 2020;44(1):88–98.
19. Oliveira-Arbex AP, David ÉB, Guimarães S. *Blastocystis* genetic diversity among children of low-income daycare center in Southeastern Brazil. *Infect Genet Evol.* 2018;57(10):59–63.
20. Asghari A, Hassanipour S, Hatam G. Comparative molecular prevalence and subtypes distribution of *Blastocystis* sp. a potentially zoonotic infection isolated from symptomatic and asymptomatic patients in Iran: A systematic review and meta-analysis. *Acta Parasitol.* 2021;66(3):745–59.
21. Greige S, El Safadi D, Bécu N, Gantois N, Pereira B, Chabé M, et al. Prevalence and subtype distribution of *Blastocystis* sp. isolates from poultry in Lebanon and evidence of zoonotic potential. *Parasites and Vectors.* 2018;11(1):1–10.

22. Popruk S, Udonsom R, Koompaong K, Mahittikorn A, Kusolsuk T, Ruangsittichai J, et al. Subtype distribution of blastocystis in Thai-Myanmar border, Thailand. *Korean J Parasitol*. 2015;53(1):13–9.
23. Belleza MLB, Cadacio JLC, Borja MP, Solon JAA, Padilla MA, Tongol-Rivera PN, et al. Epidemiologic study of blastocystis infection in an urban community in the Philippines. *J Environ Public Health*. 2015;29(4):5.
24. Agustus M. Profile and Prevalence of Blastocystis hominis at Parasitology Laboratory, Medical Faculty Universitas Kristen Indonesia. 2020;36 (2):55–62.
25. Sari IP, Audindra S, Zhafira AS, Rahma AA, Syarira C V., Wahdini S. Nutritional status of school-aged children with intestinal parasite infection in South Jakarta, Indonesia. *Open Access Maced J Med Sci*. 2021;9(5):95–100.
26. Nofita E, Harminarti N, Rusjdi SR. Identifikasi Blastocystis hominis secara mikroskopis dan pcr pada sampel feses di laboratorium RSUP.Dr.M.Djamil Padang. *Maj Kedokt Andalas*. 2015;37(1):26.
27. Kaya S, Cetin ES, Aridoğan BC, Arikan S, Demirci M. Pathogenicity of Blastocystis hominis, a clinical reevaluation. *Turkiye Parazitol Derg*. 2007;31(3):184–7.
28. Skotarczak B. Genetic diversity and pathogenicity of blastocystis. *Ann Agric Environ Med*. 2018;25(3):411–6.
29. Stensvold CR, Clark CG. Current status of Blastocystis: A personal view. *Parasitol Int*. 2016;65(6):763–71.
30. Karamati SA, Mirjalali H, Niyyati M, Yadegar A, Asadzadeh Aghdaei H, Haghghi A, et al. Association of Blastocystis ST6 with higher protease activity among symptomatic subjects. *BMC Microbiol*. 2021;21(1):1–12.
31. Tan KSW, Mirza H, Teo JDW, Wu B, MacAry PA. Current views on the clinical relevance of blastocystis spp. *Curr Infect Dis Rep*. 2010;12(1):28–35.
32. Popruk S, Pintong A-R, Radomyos P. Diversity of Blastocystis Subtypes in Humans. *J Trop Med Parasitol*. 2013;36(2):88–97.
33. Basak S, Rajurkar MN, Mallick SK. Detection of Blastocystis hominis: A controversial human pathogen. *Parasitol Res*. 2014;113(1):261–5.
34. Vielma Guevara JR. Blastocystosis: Epidemiological, clinical, pathogenic, diagnostic, and therapeutic aspects. *Investig Clin*. 2019;60(1):53–78.

35. Elwakil HS, Hewedi IH. Pathogenic potential of *Blastocystis hominis* in laboratory mice. *Parasitol Res.* 2010;107(3):685–9.
36. Li J, Deng T, Li X, Cao G, Li X, Yan Y. A rat model to study *Blastocystis* subtype 1 infections. *Parasitol Res.* 2013;112(10):3537–41.
37. Dikriansyah F. Pengaruh ekstrak etanol daun jambu biji terhadap perbaikan gambaran histopatologi epitel mukosa lambung tikus strain wistar yang diinduksi indometasin. *Biomass Chem Eng.* 2018;3(2):11-12.
38. Růžková J, Květoňová D, Jirků M, Lhotská Z, Stensvold CR, Parfrey LW, et al. Evaluating rodent experimental models for studies of *Blastocystis* ST1. *Exp Parasitol.* 2018;191(6):55–61.
39. Wawrzyniak I, Poirier P, Texier C, Delbac F, Viscogliosi E, Dionigia M, et al. *Blastocystis*, an unrecognized parasite: An overview of pathogenesis and diagnosis. *Ther Adv Infect Dis.* 2013;1(5):167–78.
40. Deng L, Chai Y, Zhou Z, Liu H, Zhong Z, Hu Y, et al. Epidemiology of *Blastocystis* sp. infection in China: A systematic review. *Parasite.* 2019;16(7):8.
41. Mardani Kataki M, Tavalla M, Beiromvand M. Higher prevalence of *Blastocystis hominis* in healthy individuals than patients with gastrointestinal symptoms from Ahvaz, southwestern Iran. *Comp Immunol Microbiol Infect Dis.* 2019;65(5):160–4.
42. Cheng B and. Prevalence and Clinical Features of *Blastocystis*. *Sultan Qaboos Univ Med J.* 2007;7(1):6.
43. Beyhan YE, Yilmaz H, Cengiz ZT, Ekici A. Clinical significance and prevalence of *Blastocystis hominis*. 2015;36(9):1118–21.
44. Yoshikawa H, Tokoro M, Nagamoto T, Arayama S, Asih PBS, Rozi IE, et al. Molecular survey of *Blastocystis* sp. from humans and associated animals in an Indonesian community with poor hygiene. *Parasitol Int.* 2016;65(6):780–4.
45. Rozi MF, Darlan DM. *Blastocystosis hominis*: The Summary From A to Z. *Sumatera Med J.* 2019;2(1):85–95.
46. Jeremiah S, Parija S. *Blastocystis*: Taxonomy, biology and virulence. *Trop Parasitol.* 2013;3(1):17.
47. Chandrasekarata H. Studies of prevalence of *Blastocystis* sp. in animals and experimental infection in-vivo. *University of Malaya.* 2016:18.



48. Kumarasamy V, Anbazhagan D, Subramaniyan V, Vellasamy S. Blastocystis sp., Parasite Associated with Gastrointestinal Disorders: An Overview of its Pathogenesis, Immune Modulation and Therapeutic Strategies. *Curr Pharm Des.* 2018;24(27):3172–5.
49. Deng L, Wojciech L, Gascoigne NRJ, Peng G, Tan KSW. New insights into the interactions between Blastocystis, the gut microbiota, and host immunity. *PLoS Pathog.* 2021;17(2):1–15.
50. Varghese BA. Recent Advances Blastocystis sp. *Phillipine science.* 2020;43(2013):1–244.
51. Mirza H, Wu Z, Teo Jdw, Tan Ksw. Statin pleiotropy prevents rho kinase mediated intestinal epithelial barrier compromise induced by Blastocystis cysteine proteases. *Cell Microbiol.* 2012;14(9):1474–1484.
52. Kumarasamy V, Anbazhagan D, Subramaniyan V, Vellasamy S. Blastocystis sp., Parasite Associated with Gastrointestinal Disorders: An Overview of its Pathogenesis, Immune Modulation and Therapeutic Strategies. *Curr Pharm Des.* 2018;24(27):317.
53. Salvador F, Sulleiro E, Sánchez-Montalvá A, Alonso C, Santos J, Fuentes I, et al. Epidemiological and clinical profile of adult patients with Blastocystis sp. infection in Barcelona, Spain. *Parasites and Vectors.* 2016;9(1):1–7.
54. Abdulsalam AM, Ithoi I, Al-Mekhlafi HM, Khan AH, Ahmed A, Surin J, et al. Prevalence, predictors and clinical significance of Blastocystis sp. in Sebha, Libya. *Parasites and Vectors.* 2013;6(1):4–11.
55. Moosavi A, Haghighi A, Mojarad EN, Zayeri F, Alebouyeh M, Khazan H, et al. Genetic variability of Blastocystis sp. Isolated from symptomatic and asymptomatic individuals in Iran. *Parasitol Res.* 2012;111(6):2311–5.
56. Agrawal SK. Blastocystis Hominis Infection Pathogenic or Commensal: Short Review. *Int J Res Stud Microbiol Biotechnol.* 2017;3(3):1–5.
57. Stensvold CR. Blastocystis. *Princ Pract Pediatr Infect Dis.* 2018;1305-1306.
58. Fedianina L V., Prodeus T V., Solov'eva OA. Laboratory diagnosis of Blastocystis spp. *Med Parazitol (Mosk).* 2012;5(4):52–8.
59. Stensvold CR, Arendrup MC, Jespersgaard C, Mølbak K, Nielsen H V. Detecting Blastocystis using parasitologic and DNA-based methods: a comparative study. *Diagn Microbiol Infect Dis.* 2007;59(3):303–7.
60. Sekar U, Shanthi M. Blastocystis: Consensus of treatment and controversies. *Trop Parasitol.* 2013;3(1):35.

61. Eroschenco VP. Atlas Histologi difiore edisi 11. Jakarta: EGC;2007:291.
62. Treuting PM, Arends MJ, Dintzis SM. Lower Gastrointestinal Tract. Comparative Anatomy and Histology. Elsevier Inc. 2018:213–228.
63. Gartner LP, Hiatt JL. Berwarna ajar berwarna histologi edisi 3. Elsevier.2007:398-411.
64. Mescher AL. Junqueira’s Basic Histology: Text & Atlas (15th ed). Vol. 13, Morphologia. 2019:101–104.
65. Ahmed M, Habib F, Saad G, El Naggar H. Preneoplastic proliferative changes induced by experimental blastocystosis. Parasitol United J. 2019;12(2):94–101.
66. Abdel Hafeez EH, Ahmed AK. The Efficacy of Pomegranate (*Punica granatum*) Peel Extract on Experimentally Infected Rats with Blastocystis Spp. J Anc Dis Prev Remedies. 2016;4(1):1-4.
67. Barthel M, Hapfelmeier S, Quintanilla-Martínez L, Kremer M, Rohde M, Hogardt M, et al. Pretreatment of mice with streptomycin provides a *Salmonella enterica* serovar Typhimurium colitis model that allows analysis of both pathogen and host. Infect Immun. 2003;71(5):2839–58.
68. Madsen K, Cornish A, Soper P, McKaigney C, Jijon H, Yachimec C, et al. Probiotic bacteria enhance murine and human intestinal epithelial barrier function. Gastroenterology. 2001;121(3):580–91.
69. Suresh K, Smith H. Comparison of methods for detecting Blastocystis hominis. Eur J Clin Microbiol Infect Dis. 2004;23(6):509–11.
70. Amalia, R., & Hestianah EP. Efek Pemberian Vitamin C dan Vitamin E terhadap Gambaran Histopatologi Duodenum Mencit yang dipapar Boraks. Veterina Med. 2017;4(1):1–23.
71. WHO. General guidelines for methodologies on research and evaluation of traditional medicine world health organization. 2000:1-73.
72. Xu X, Lin S, Yang Y, Gong X, Tong J, Li K, et al. Histological and ultrastructural changes of the colon in dextran sodium sulfate-induced mouse colitis. Exp Ther Med. 2020;24(4):1987–94.
73. Prayoga RD, Kurnijasanti R, Hastutiek P. Pengaruh Ekstrak Batang Pisang Ambon (*Musa paradisiaca* var. *sapientum*) terhadap gambaran histopatologi jejunum tikus (*Rattus norvegicus*) inflammatory bowel disease. Journal of Basic Medicine Veterinary. 2016;5(6):16–21.

74. Abdel-Hafeez EH, Ahmad AK, Abdelgelil NH, Abdellatif MZM, Kamal AM, Hassanin KMA, et al. Immunopathological assessments of human *Blastocystis* spp. in experimentally infected immunocompetent and immunosuppressed mice. *Parasitol Res.* 2016;115(5):2061–71.
75. Billy V, Lhotská Z, Jirků M, Kadlecová O, Frgelecová L, Parfrey LW, et al. *Blastocystis* Colonization Alters the Gut Microbiome and, in Some Cases, Promotes Faster Recovery From Induced Colitis. *Front Microbiol.* 2021;12(4):1–20.
76. Mila Y. Pengaruh Pemberian *Blastocystis hominis* Terhadap Gambaran Histopatologi pada Usus Mencit (Skripsi). Padang: Fakultas Kedokteran Universitas Andalas. 2019:27-29.
77. Méabed EMH, Abdelhafez DN, Abdelaliem YF. *Saccharomyces boulardii* inhibits the expression of pro-inflammatory cytokines and inducible nitric oxide synthase genes in the colonic mucosa of rats experimentally-infected with *Blastocystis* subtype-3 cysts. *Parasitology.* 2019;146(12):1532–40.
78. Wawrzyniak I, Texier C, Poirier P, Viscogliosi E, Tan KSW, Delbac F, et al. Characterization of two cysteine proteases secreted by *Blastocystis* ST7, a human intestinal parasite. *Parasitol Int.* 2012;61(3):437–42.
79. Kosik-Bogacka D, Lepczyńska M, Kot K, Szkup M, Łanocha-Arendarczyk N, Dzika E, et al. Prevalence, subtypes and risk factors of *Blastocystis* spp. infection among pre and perimenopausal women. *BMC Infect Dis.* 2021;21(1):1–14.
80. Yason JA, Liang YR, Png CW, Zhang Y, Tan KSW. Interactions between a pathogenic *Blastocystis* subtype and gut microbiota: In vitro and in vivo studies. *Microbiome.* 2019;7(1):1–13.
81. Pavanelli MF, Kaneshima EN, Uda CF, Colli CM, et al. Pathogenicity of *Blastocystis* sp. to the gastrointestinal tract of mice: Relationship between inoculum size and period of infection. *Rev Inst Med Trop Sao Paulo.* 2015;57(6):467–72.
82. Yakoob J, Abbas Z, Usman MW, Sultana A, Islam M, Awan S, et al. Cytokine changes in colonic mucosa associated with *Blastocystis* spp. subtypes 1 and 3 in diarrhoea-predominant irritable bowel syndrome. *Parasitology.* 2014;141(7):957–69.
83. Scanlan PD, Stensvold CR. *Blastocystis*: Getting to grips with our guileful guest. *Trends Parasitol.* 2013;29(11):523–9.
84. Kim JJ, Khan WI. Goblet cells and mucins: Role in innate defense in enteric infections. *Pathogens.* 2013;2(1):55–70.



85. Hussein EM, Muhammad MAA, Hussein AM, Elzagawy SM, Zaki WM, Temsah AG, et al. Levels of Genetic Variants Among Symptomatic Blastocystis Subtypes and their Relationship to Mucosal Immune Surveillance in the Precancerous Colons of Experimentally Infected Rats. *Acta Parasitol.* 2022;(10):8-10.
86. Iguchi A, Yoshikawa H, Yamada M, Kimata I, Arizono N. Expression of interferon gamma and proinflammatory cytokines in the cecal mucosa of rats experimentally infected with *Blastocystis* sp. strain RN94-9. *Parasitol Res.* 2009;105(1):135–40.
87. Abdel-Hafeez EH, Ahmad AK, Kamal AM, Abdellatif MZM, Abdelgelil NH. In vivo antiprotozoan effects of garlic (*Allium sativum*) and ginger (*Zingiber officinale*) extracts on experimentally infected mice with *Blastocystis* spp. *Parasitol Res.* 2015;114(9):3439–44.
88. Deplancke B, Gaskins HR. Microbial modulation of innate defense: Goblet cells and the intestinal mucus layer. *Am J Clin Nutr.* 2001;73(6):1131-38.
89. Puthia MK, Lu J, Tan KSW. *Blastocystis ratti* contains cysteine proteases that mediate interleukin-8 response from human intestinal epithelial cells in an NF- $\kappa$ B-dependent manner. *Eukaryot Cell.* 2008;7(3):435–43.
90. Lu YY, Pei P, Zhang LL, et al. Study on the mechanisms of the intestinal tight-junction destruction caused by *Blastocystis hominis* infection in rats. *Chinese Journal of Schistosomiasis Control.* 2021;33(1):28-34.
91. Abdel Hafeez EH, Ahmed AK. The Efficacy of Pomegranate (*Punica granatum*) Peel Extract on Experimentally Infected Rats with *Blastocystis* Spp. *J Anc Dis Prev Remedies.* 2016;4(1):1–6.
92. Ajjampur SSR, Tan KSW. Pathogenic mechanisms in *Blastocystis* spp. — Interpreting results from in vitro and in vivo studies. *Parasitol Int.* 2016;65(6):772–9.
93. Lepczyńska M, Dzika E, Kubiak K, Korycińska J. The role of *Blastocystis* sp. as an etiology of irritable bowel syndrome. *Polish Ann Med.* 2016;23(1):57–60.
94. Tan TC, Suresh KG. Amoeboid form of *Blastocystis hominis* - A detailed ultrastructural insight. *Parasitol Res.* 2006;99(6):737–42.
95. Tan TC, Suresh KG. Predominance of amoeboid forms of *Blastocystis hominis* in isolates from symptomatic patients. *Parasitol Res.* 2006;98(3):189–93.



96. Lepczyńska M, Białkowska J, Dzika E, Piskorz-Ogórek K, Korycińska J. Blastocystis: how do specific diets and human gut microbiota affect its development and pathogenicity? *Eur J Clin Microbiol Infect Dis*. 2017;36(9):1531–40.

