

## DAFTAR PUSTAKA

- Abdel-Hamid, A. M., Solbiati, J. O., & Cann, I. K. O. (2013). Insights into Lignin Degradation and its Potential Industrial Applications. *Advances in Applied Microbiology*, 1–28.
- Abdollahzadeh, J., Zolfaghari, S., (2014). Efficiency of rep-PCR fingerprinting as a useful technique for molecular typing of plant pathogenic fungal species: Botryosphaeriaceae species as a case study *FEMS Microbiol Lett* 361. 144–157.
- Adams, L., Boopathy, R. (2005). Isolation and characterization of enteric bacteria from the hindgut of Formosan termite. *Bioresour Technol.* 96(14):1592-8.
- Ali, H. R. K., Hemeda, N. F., & Abdelaliem, Y. F. (2019). Symbiotic cellulolytic bacteria from the gut of the subterranean termite *Psammotermes hypostoma* Desneux and their role in cellulose digestion. *AMB Expr* (2019) 9:111.
- Arias, M. E., Arenas, M., Rodríguez, J., Soliveri, J., Ball, A. S., & Hernández, M. (2003). Kraft pulp biobleaching and mediated oxidation of a nonphenolic substrate by lakase from *Streptomyces cyaneus* CECT 3335. *Applied and Environmental Microbiology*, 69(4), 1953–1958.
- Arias-Cordero E., Ping, L., Reichwald, K., Delb, H., Platzer, M., et al. (2012) Comparative Evaluation of the Gut Microbiota Associated with the Below- and Above-Ground Life Stages (Larvae and Beetles) of the Forest Cockchafer, *Melolontha hippocastani*. *PLOS ONE* 7(12).
- Aufrin, T.A., Viidhya. (2019). Biobleaching of textile dye effluent by bacterial lignin peroxidase. *International Journal of Recent Scientific Research* Vol. 10, Issue, 03(F), pp. 31565-31570.
- Ayeronfe, F., Kassim, A., Hung, P., Ishak, N., Syarifah, S., & Aripin, A. (2019). Production of Ligninolytic Enzymes by *Coptotermes curvignathus* Gut Bacteria. *Environmental and Climate Technologies*. vol. 23, no. 1, pp. 111–121.
- Azeez, A., Sane, A.P., Bhatnagar, D., Nath, P., (2007). Enhanced expression of serine proteases during floral senescence in *Gladiolus*. *Phytochemistry* 68, 1352–1357.
- Azizi, A., Mohammadabadi, T., Motamedi, H., Chaji, M., Fazaeli, H. (2016). Determination of optimum temperature and pH for lignocellulosic materials-degrading bacteria isolated from termite gut and their effect on the digestibility and in vitro fermentation parameters of some agricultural by-products. *Iranian Journal of Animal Research*.
- Azizi-Shotorkhoft, A., et al., (2016). Isolation and identification of termite gut symbiotic bacteria with lignocellulose-degrading potential, and their effects on the nutritive value for ruminants of some by-products. *Anim. Feed Sci. Tech.*

- Barsotti, R.C., and Costa-Leonardo, A. M. (2005). The caste system of *Coptotermes gestroi* (Isoptera: Rhinotermitidae). *Sociobiology* 46, 87–103.
- Betts RA, Cox PM, Lee SE, Woodward FL (1997) Contrasting physiological and structural vegetation feedbacks in climate change simulations. *Nature* 387:796–799.
- Batool, I., Gulfraz, M., Asad, M., Kabir, F., Khadam, S., and Ahmed, A. (2018). *Cellulomonas* sp. isolated from termite gut for saccharification and fermentation of agricultural biomass, *BioRes.* 13(1), 752–763.
- Boerjan, W., Ralph, J., & Baucher, M. (2003). Lignin biosynthesis. *Annual Review of Plant Biology*, 54, 519–546.
- Borji, M., 2003. The Survey Possibility of Straw Polysaccharides and Lignin Degradation by Isolated Microbiota from Termites. PhD Thesis. Tarbiat Modares University, Tehran, Iran
- Brune, A. (2014). *Symbiotic digestion of lignocellulose in termite guts*. *Nature Reviews Microbiology*, 12(3), 168–180.
- Butera, G., Ferraro, C., Alonzo, G. *et al.* (2016). The gut microbiota of the wood-feeding termite *Reticulitermes lucifugus* (Isoptera; Rhinotermitidae). *Ann Microbiol* 66, 253–260.
- Bugg, T.D.H., Ahmad, M., Hardimana, E.M., Rahmanpoura, R. (2011). Pathways for degradation of lignin in bacteria and fungi. *Natural Product Reports*. 12.
- Cheng K, Lu FP, Li M, Liu LL, Liang XM (2010) Purification and biochemical characterization of a serine alkaline protease TC4 from a new isolated *Bacillus alcalophilus* TCCC11004 in detergent formulations. *Afr J Biotechnol* 9(31):4942–4953.
- Chandra, M. R. G. S., & Madakka, M. (2019). *Comparative Biochemistry and Kinetics of Microbial Lignocellulolytic Enzymes. Recent Developments in Applied Microbiology and Biochemistry*, 147–159.
- Conejo-Saucedo, U., Cano-Camacho, H., López-Romero, E., Zavala-Páramo, M.G., Lara-Márquez, A. (2010). Hemicellulases of fungi: A vision of their function in the coordinated degradation of polysaccharides of plant cell walls. *Review Current Trends in Microbiology*. 7.
- Denise, B. M., Maria, L. A., Elba, B., Julio, S. A. N., Sergio, H. K. (1996). Colorimetric assay for lignin peroxidase activity determination using methylene blue as substrate. *Biotechnological Techniques*. 10: 273–276
- Desai, S.S., & Nityanand, C. (2011). Microbial Laksases and their Applications: A Review. *Asian Journal of Biotechnology*, 3: 98–124.
- Doolittle, M., Raina, A., Lax, A., Boopathy, R. (2008). Presence of nitrogen fixing *Klebsiella pneumoniae* in the gut of the Formosan subterranean termite (*Coptotermes formosanus*). *Bioresour Technol.* 99(8):3297–300
- Drancourt, M., Bollet, C., Carlioz, A., Martelin, R., Gayral, J.P., Raoult, D. (2000). 16S ribosomal sequence analysis of a large collection of environmental and clinical unidentifiable bacterial isolates. *J. Clin. Microbiol.* 38:3623–3630

- Drancourt, M., Berger, P., & Raoult, D. (2004). Systematic 16S rRNA Gene Sequencing of Atypical Clinical Isolates Identified 27 New Bacterial Species Associated with Humans. *Journal of Clinical Microbiology*, 42(5), 2197–2202.
- Duan, J., Liu, J., Ma, X., Zhang, Y., Wang, X., Zhao, K. (2017). Isolation, Identification, and Expression of Microbial Cellulases from the Gut of *Odontotermes formosanus*. *J. Microbiol. Biotechnol.* 27(1), 122–129
- Dwivedi, U. N., Singh, P., Pandey, V. P., & Kumar, A. (2011). Structure–function relationship among bacterial, fungal and plant lakases. *Journal of Molecular Catalysis B: Enzymatic*, 68(2), 117–128.
- Eggleton, P. (2011). in *Biology of Termites: A Modern Synthesis* (eds Bignell, D. E., Roisin, Y. & Lo, N.) Springer 1–26
- Enagbonma, B. J., Babalola, O. O. (2019). Potentials of termite mound soil bacteria in ecosystem engineering for sustainable agriculture. *Ann Microbiol* 69, 211–219.
- Fagbohunka, B. S., Okonji, R. E. , & Adenike, A.Z. (2017). Purification and Characterization of Cellulase from Termite *Ametermes eveuncifer* (Silverstri) Soldiers. *International Journal of Biology*; Vol. 9, No. 1.
- Falade, A. O., Eyisi, O. A. L., Mabinya, L. V., Nwodo, U. U., Okoh, A. I. (2017). Peroxidase production and ligninolytic potentials of freshwater bacteria *Raoutella ornithinolytica* and *Ensifer adhaerens*. *Biotechnol. Rep*, 16, 12–17.
- Foyle, T., Jennings, L., & Mulcahy, P. (2007). Compositional analysis of lignocellulosic materials: evaluation of methods used for sugar analysis of waste paper and straw. *Bioresource Technology*, 98(16), 3026–3036.
- Han, Y. J., & Chen, H. Z. (2010). Synergism between hydrophobic proteins of corn stover and cel-lulase in lignocellulose hydrolysis. *Biochemical Engineering Journal*, 48, 218–224
- Harris, D., & Debolt, S. (2010). Synthesis, regulation and utilization of lignocellulosic biomass. *Plant Biotechnology Journal*, 8(3), 244–262.
- He S, Ivanova N, Kirton E, Allgaier M, Bergin C, Scheffrahn RH, Kyrpides NC, Warnecke F, Tringe SG, Hugenholtz P. (2013). Comparative metagenomic and metatranscriptomic analysis of hindgut paunch microbiota in wood- and dung-feeding higher termites. *PLoS ONE*.8:e61126.
- Hongoh, Y. (2011). To ward the functional analysis of uncultivable, symbiotic microorganisms in the termite gut. *Cell Mol. Life Sci.* 68, 1311–1325.
- Huang, S., Sheng, P., & Zhang, H. (2012). Isolation and identification of cellulolytic bacteria from the gut of *Holotrichia parallela* larvae (Coleoptera: Scarabaeidae). *International journal of molecular sciences*, 13(3), 2563–2577.
- Ilmi, I. M., Kuswytasari, N. D. (2013). Aktivitas Enzim Lignin Peroksidase oleh *Gliomastix* sp. T3.7 pada Limbah Bonggol Jagung dengan Berbagai pH dan Suhu. *Jurnal Sains Dan Seni Pomits* Vol. 2, No.1, (2013) 2337-3520.

- Jović, J., Buntić, A., Radovanović, N., Petrović, B., & Mojović, L. (2018). Lignin-Degrading Abilities of Novel Autochthonous Fungal Isolates *Trametes hirsuta* F13 and *Stereum gausapatum* F28. *Food technology and biotechnology*, 56(3), 354–365.
- Kitade, O. (2004). Comparison of Symbiotic Flagellate Faunae between Termites and a Wood-Feeding Cockroach of the Genus *Cryptocercus*. *Microbes Environ.* 19, 215–220.
- Kuhad, R.C., Gupta, R., Singh, A. (2011) Microbial cellulases and their industrial applications. *Enzyme Res.*
- Kumar, A., Chandra, R. (2020). Ligninolytic enzymes and its mechanisms for degradation of lignocellulosic waste in environment. *Heliyon* 6
- Kumar, G., Bakonyi, P., Periyasamy, S., Kim, S.H., Nemestóthy, N., and Bélafi-Bakó, K. (2015). *Renewable Sustainable Energy Rev.*, 44, 728–737
- Lazuka, A., Auer, L., O'Donohue, M., and Hernandez-Raquet, G. (2018). Anaerobic lignocellulolytic microbial consortium derived from termite gut: enrichment, lignocellulose degradation and community dynamics. *Biotechnol Biofuels* 11:284
- Li, H. et al. (2012). Physiochemical conditions and metal ion profiles in the gut of the fungus-growing termite *Odontotermes formosanus*. *J. Insect Physiol.* 58, 1368–1375.
- Li, Y., Yin, Q., Ding, M., Zhao, F., (2009). Purification, characterization and molecular cloning of a novel endo- $\beta$ -1,4-glucanase AC-EG65 from the mollusc *Ampullaria crosseana*. *Comp. Biochem. Physiol. B Biochem. Mol. Biol.* 153, 149–156.
- Lima, Thâmarah de Albuquerque, Pontual, E.V., Dornelles, L.P., Amorim, P.K., Sá, K.A., Coelho, L.C.B.B., Napoleão, T.H., Paiva, P.M.G. (2014). Digestive enzymes from workers and soldiers of termite *Nasutitermes corniger*. *Comparative Biochemistry and Physiology, Part B*. 176:1-8.
- Liu, X., Gillespie, M., Ozel, A. D., Dikici, E., Daunert, S., & Bachas, L. G. (2011). Electrochemical properties and temperature dependence of a recombinant lakase from *Thermus thermophilus*. *Analytical and Bioanalytical Chemistry*, 399(1), 361–366.
- López, M. J., Guisado, G., Vargas-Garcia, M. C., Suárez-Estrella, F., Moreno, J. (2006). Decolorization of industrial dyes by ligninolytic microorganisms isolated from composting environment. *Enzyme Microb. Technol.* 40:42–45.
- Machczynski, M. C., Vijgenboom, E., Samyn, B., & Canters, G. W. (2004). Characterization of SLAC: a small lakase from *Streptomyces coelicolor* with unprecedented activity. *Protein Science: A Publication of the Protein Society*, 13(9), 2388–2397.
- Malherbe A, Cloete TE (2002) Lignocellulose biodegradation: fundamentals and applications. *Rev Environ Sci Biotechnol* 1:105–114.
- Mandic, M., Djokic, L., Nikolaivits, E., Prodanovic, R., O'Connor, K., Jeremic, S., Topakas, E., Nikodinovic-Runic, J. (2019). Identification and

- Characterization of New Lakase Biocatalysts from *Pseudomonas* Species Suitable for Degradation of Synthetic Textile Dyes. *Catalysts*. 9(7):629.
- Manjula, A., Pushpanathan, M., Sathyavathi, S., Gunasekaran, P., & Rajendhran, J. (2016). Comparative Analysis of Microbial Diversity in Termite Gut and Termite Nest Using Ion Sequencing. *Current Microbiology*, 72(3), 267–275.
- Mathew, G. M., Lin, S. J., Chang, J. J., Huang, C. C. (2011). DGGE detection and screening of lignocellulolytic bacteria from the termite gut of *Coptotermes formosanus*. *Malays J Microbiol* 7:201–209 .
- Mathews, S.L., Pawlak, J., & Grunden, A.M. 2015. Bacterial biodegradation and bioconversion of industrial lignocellulosic streams. *Appl Microbiol Biotechnol*.
- Martins, L. O., Soares, C. M., Pereira, M. M., Teixeira, M., Costa, T., Jones, G. H., et al. (2002). Molecular and biochemical characterization of a highly stable bacterial lakase that occurs as a structural component of the *Bacillus subtilis* endospore coat. *Journal of Biological Chemistry*, 277(21), 18849–18859.
- Masai, E., Ichimura, A., Sato, Y., Miyauchi, K., Katayama, Y., Fukuda, M. (2003) Roles of the enantioselective glutathione S-transferases in cleavage of  $\beta$ -aryl ether. *J Bacteriol*, 185(6):1768–1775.
- Molina-Guijarro, J.M., Pérez-Torres, J., Muñoz-Dorado, J., Guillén-Carretero, F., Moya, L.R., Cutuli, M.H., Fernández, M.E. A. (2009) Detoxification of azo dyes by a novel pH-versatile, salt-resistant lakase from *Streptomyces ipomoea*. *Int Microbiol* 12:13–21.
- Murashima, K., Kosugi, A., & Doi, R.H. (2002). Thermostabilization of cellulosomal endoglucanase EngB from *Clostridium cellulovorans* by invitro DNA recombination with non-cellulosomal endoglucanase EngD. *Molecular Microbiology*, 45, 617–626.
- Muthukumarasamy, N. P., Jackson, B., Joseph Raj, A., Sevanan, M. (2015). Production of Extracellular Lakase from *Bacillus subtilis* MTCC 2414 Using Agroresidues as a Potential Substrate. *Biochem Res Int.*, 2015:765190
- Nasehi, M., Torbatinejad, N.M., Zerehdaran, S., Safaei, A.R. (2014) Effect of (*Pleurotus florida*) Fungi on chemical composition and rumen degradability of wheat and barley straw. *Iran j appl anim sci*, 4(2):257– 261.
- Petti, C. A. (2007). Detection and identification of microorganisms by gene amplification and sequencing. *Clinical Infectious Diseases*, 44(8), 1108–1114.
- Placido, J., & Capareda, S. (2015). Ligninolytic enzymes: A biotechnological alternative for bio-ethanol production. *Bioresource Bioprocess*, 2, 23.
- Purich, D. L., (2010). Factors influencing enzyme activity. In: Purich, D.L. (Ed.), *Enzyme Kinetics: Catalysis & Control — A Reference of Theory and Best-Practice Methods*. Elsevier, Amsterdam
- Rahman, N. H. A., Rahman, N. A., Aziz, S. A., and Hassan M. A. (2013). Production of Ligninolytic Enzymes by Newly Isolated Bacteria from Palm Oil Plantation Soils. *BioResources* 8(4), 6136-6150



- Rajeswari, M., & Bhuvaneswari, V. (2016). Production of extracellular lakase from the newly isolated *Bacillus* sp. PK4. *Afr. J. Biotechnol*, 15(34): 1813-1826.
- Rayner, A. D. M., Boddy, L., Wiley, N. Y. (1988). Fungal Decomposition of Wood. Its Biology and Ecology.
- Rastogi, G., Muppidi, G.L., Gurram, R.N., Adhikari, A., Bischoff, K.M., Hughes, S.R., Apel, W.A., Bang, S.S., Dixon, D.J., Sani, R.K. (2009). Isolation and characterization of cellulose-degrading bacteria from the deep subsurface of the Homestake gold mine, Lead, South Dakota, USA. *J Ind Microbiol Biotechnol*.36:585–598.
- Sakolvaree, J., and Deevong, P., (2016). Isolation and Characterization of cellulase producingbacteria from the gut of a Higher Termite, *Termes propinquus*. The 5th Burapha University International Conference “*Harmonization of Knowledge towards the Betterment of Society*”193- 203.
- Schauer, C., Thompson, C. L. & Brune, A. (2012). The bacterial community in the gut of the cockroach *Shelfordella lateralis* reflects the close evolutionary relatedness of cockroaches and termites. *Appl. Environ. Microbiol*. 78, 2758–2767 .
- Scheller, H. V., & Ulvskov, P. (2010). Hemicelluloses. *Annual Review of Plant Biology*, 61, 263–289.
- Seneesrisakul, K., Guralp, A.S., Gulari, E., & Chavadej, S. (2017). Escherichia coli expressing endoglucanase gene from Thai higher termite bacteria for enzymatic and microbial hydrolysis of cellulosic materials. *Electronic Journal of Biotechnology*, 27, 70-79.
- Seo, J. K., Park, T. S., Kwon, I. H., Piao, M. Y., Lee, C. H., & Ha, J. K. (2013). Characterization of Cellulolytic and Xylanolytic Enzymes of *Bacillus licheniformis* JK7 Isolatd from the Rumen of a Native Korean Goat. *Asian-Australasian journal of animal sciences*, 26(1), 50–58.
- Sharma, A., and Arya, S.K. (2017) *Biotechnology Reports*, 15, 63–6 .
- Sheikhi, F., Ardakani, M.R., Enayatizamir, N. Rodriguez-Couto, S. (2012). The Determination of Assay for Lakase of *Bacillus subtilis* WPI with Two Classes of Chemical Compounds as Substrates. *Indian J Microbiol* 52(4):701–707.
- Shinde, V.S., Agrawal, T., Kotasthane, A.S. (2017). Molecular Characterization of Cellulolytic Bacteria Derived From Termite Gut and Optimization of Cellulase Production. *Int.J.Curr.Microbiol.App.Sci*, 6(10): 2474-2492.
- Shrestha, P., Joshi, B., Joshi, J., Malla, R., Sreerama, L. (2016). Isolation and Physicochemical Characterization of Lakase from *Ganoderma lucidum*-CDBT1 Isolatd from Its Native Habitat in Nepal. *BioMed Res. Int*.
- Sreena, C.P., Resna, N.K., Sebastian, D. (2015). Isolation and Characterization of Cellulase Producing Bacteria from the Gut of Termites (*Odontotermes* and *Heterotermes* Species). *British Biotechnology Journal* 9(1): 1-10.
- Steinhaus, E. A. (1941). A study of the bacteria associated with thirty species of insects. *J Bacteriol* 42: 757–790.

- Subekti, N. (2010). Characteristic of Population Subterranean Termites *Coptotermes* spp (Blattodea: Rhinotermitidae) and Its Attack Impact. *Biosaintifika* 2(2).
- Sun, L. Q., Hse, C.Y., Shupe, T., Sun, M.J., Wang, X.H., Zhao, K. (2015) Isolation and characterization of an endophytic fungal strain with potent anti-microbial and termiticidal activities from Port-Orford- Cedar. *J Econ Entomol* 108(3):962–968.
- Sunil, S., More, Renuka, P.S., Pruthvi, K., Swetha, M., Malini, S., Veena, S.M., (2011). Isolation, Purification, and Characterization of Fungal Lakase from *Pleurotus* sp., *Enzyme Research*, 2011: 1-7
- Suzuki, T., Endo, K., Ito, M., Tsujibo, H., Miyamoto, K., & Inamori, Y. (2003). A thermostable lakase from *Streptomyces lavendulae* REN-7: purification, characterization, nucleotide sequence, and expression. *Bioscience Biotechnology and Biochemistry*, 67(10), 2167–2175.
- Tahir, M., Saleh, F., Ohtsuka, A., & Hayashi, K. (2005). Synergistic effect of cellulase and hemi-cellulase on nutrients utilization and performance in broilers fed corn-soybean meal diet. *Animal Science Journal*, 76, 559–565
- Talia, P., & Arneodo, J. (2018). *Lignocellulose Degradation by Termites. Termites and Sustainable Management*, Springer. 101–117.
- Thapa, S., Mishra, J., Arora, N. et al. (2020). Microbial cellulolytic enzymes: diversity and biotechnology with reference to lignocellulosic biomass degradation. *Rev Environ Sci Biotechnol* 19, 621–648.
- Tho, Y.P. (1992). Termites of Peninsular Malaysia in Kirton, L.G (Eds). *Malayan Forest Record* no 36. Forest Reasearch Institute Malaysia, Kepong, Kualalumpur.
- Thurston, C.F. (1994). The structure and function of fungal lakases. *Microbiology*, 140:19–26.
- Timell, T.E. (1967). Recent progress in the chemistry of wood hemicelluloses. *Wood Science and Technology*, 1, 45–70.
- Trivedi, N., Gupta, V., Kumar, M., Kumari P., Reddy, C.R.K., Jha, B. (2011). An alkali-halotolerant cellulase from *Bacillus flexus* isolatd from green seaweed *Ulva lactuca*. *Carbohydr Polym*. 83:891–897.
- Tokuda G, Watanabe H, Hojo M, Fujita A, Makiya H, Miyagi M, Arakawa G, Arioka M. (2012). Cellulolytic environment in the midgut of the woodfeeding higher termite *Nasutitermes takasagoensis*. *J Insect Physiol*.58:147–54.
- Tokuda G, Watanabe H, Lo N. (2007) Does correlation of cellulase gene expression and cellulolytic activity in the gut of termite suggest synergistic collaboration of cellulases? *Gene* 401:131–4.
- Tsegaye, B., Balomajumder. C., Roy, P. 2019. Isolation and Characterization of Novel Lignolytic, Cellulolytic, and Hemicellulolytic Bacteria from Wood-Feeding Termite *Cryptotermes brevis*. *Int Microbiol* 22(1):29-39.
- Viikari, L., Puranen, T., Alapuranen, M., Vehmaanperä, J. (2007). Thermostable enzymes in lignocellulose hydrolysis. *Adv Biochem Eng Biotechnol* 108:121-45.

- Warnecke F, Luginbuhl P, Ivanova N, Ghassemian M, Richardson TH, Stege JT, Cayouette M, McHardy AC, Djordjevic G, Aboushadi N, Sorek R, Tringe SG, Podar M, Martin HG, Kunin V, Dalevi D, Madejska J, Kirton E, Platt D, Szeto E, Salamov A, Barry K, Mikhailova N, Kyrpides NC, Matson EG, Ottesen EA, Zhang X, Hernandez M, Murillo C, Acosta LG, Rigoutsos I, Tamayo G, Green BD, Chang C, Rubin EM, Mathur EJ, Robertson DE, Hugenholtz P, Leadbetter JR. Metagenomic and functional analysis of hindgut microbiota of a wood-feeding higher termite. *Nature*. 2007;450:560–5. Updegraff, D. M. (1969). Semimicro determination of cellulose in biological materials. *Analytical Biochemistry*, 32(3), 420–424.
- Wood, D.W., Setubal, J.C., Kaul, R., Monks, D.E., Kitajima, J.P., Okura, V.K., Zhou, Y., Chen, L., Wood, G. E., Almeida, N.F., Jr; *et al.* (2001). *Science*, 294, 2317–2323.
- Xie, G., Bruce, D. C., Challacombe, J. F., Chertkov, O., Detter, J. C., Gilna, P., McBride, M. J. (2007). Genome Sequence of the Cellulolytic Gliding Bacterium *Cytophaga hutchinsonii*. *Applied and Environmental Microbiology*, 73(11), 3536–3546.
- Zhou, J., Duan, J., Gao, M., Wang, Y., Wang, X., & Zhao, K. (2018). Diversity, Roles, and Biotechnological Applications of Symbiotic Microorganisms in the Gut of Termite. *Current Microbiology*. 76:755–761