

DAFTAR PUSTAKA

- Hernández-González, I. L., & Olmedo-Álvarez, G. (2016). Draft whole-genome sequence of the type strain *Bacillus aquimaris* TF12T. *Genome Announcements*, 4(4). <https://doi.org/10.1128/genomeA.00640-16>
- Jhon, S. C. (2020). *Identifikasi dan Karakterisasi Aktivitas Ekstrak Kasar Enzim Median Volume 12 Nomor 1 Bulan Februari 2020*. 12, 28–37.
- Kumakura, D., Yamaguchi, R., Hara, A., & Nakaoka, S. (2023). Disentangling the growth curve of microbial culture. *Journal of Theoretical Biology*, 573(August), 111597. <https://doi.org/10.1016/j.jtbi.2023.111597>.
- Maulinda, L. (2017). *Jurnal Teknologi Kimia Unimal*. 2(November), 1–15.
- Mustafa, A., Karmali, A., & Abdelmoez, W. (2016). *A Sensitive Microplate Assay for Lipase Activity Measurement Using Olive Oil A Sensitive Microplate Assay for Lipase Activity Measurement Using Olive Oil Emulsion Substrate : Modification of the Copper Soap Colorimetric Method*. September. <https://doi.org/10.5650/jos.ess16066>.
- Rait, A. S., & Bahri, S. (2022). *Pemurnian Parsial Enzim Lipase dari Bakteri Isolat Lokal LKMA 3 dan Penentuan*. 1–5.
- Shintha, Fauziah, L. (2018). Brine Shrimp Lethality Test (BSLT) Isolat Bakteri Asal Sarang Lebah Madu (Apis cerana F.). *Jurnal Bioleuser*, 2(1), 20–23.
- Soleymani, S., Alizadeh, H., Mohammadian, H., Rabbani, E., Moazen, F., Sadeghi, H. M., Shariat, Z. S., Etemadifar, Z., & Rabbani, M. (2017). Efficient media for high lipase production: One variable at a time approach. *Avicenna Journal of Medical Biotechnology*, 9(2), 82–86.
- Stemler, C. D., Lorenz, K. K., & Scherf, K. A. (2024). Rhodamine B-based lipase activity assay with natural substrates—development and application. *International Journal of Food Science and Technology*, 59(2), 1063–1070. <https://doi.org/10.1111/ijfs.16875>
- Supriyatna, A., Amalia, D., Jauhari, A. A., & Holydaziah, D. (2015). *Aktivitas Enzim Amilase, Lipase, dan Protease dari Larva*. IX(2), 18–32.
- Susilowati, F. (2017). Uji Bine Shrimp Lethality Test (BSLT) Ekstrak Etil Asetat Spons *Calthropella* sp. Asal Zona Intertidal Pantai Krakal Gunung Kidul Yogyakarta. *Pharmaceutical Journal of Islamic Pharmacy*, 1(1), 1. <https://doi.org/10.21111/pharmasipha.v1i1.1118>
- Sutrisna, R., Ekowati, C. N., & Sinaga, E. S. (2017). Pengaruh pH terhadap Produksi Antibakteri oleh Bakteri Asam Laktat dari Usus Itik. *Jurnal Penelitian Pertanian Terapan*, 15(3), 234–238. <https://doi.org/10.25181/jppt.v15i3.135>
- Aghabeigi, F., Nikkhah, H., Zilouei, H., & Bazarganipour, M. (2023). Immobilization of Lipase on the Graphene Oxides Magnetized with NiFe₂O₄

- Nanoparticles for Biodiesel Production from Microalgae Lipids. *Process Biochemistry*, 125, 1–10.
- Agustini, R. S. and R. (2021). *Seed Lipases and its Characterization*. 10(2), 168–183.
- Astriany, D., Hamdani, S., & Wilianto, H. (2022). Produksi Enzim Protease *Bacillus altitudinis* dan *Pseudomonas citronellolis* Hasil Isolasi dari Lumpur Kubangan Babi dengan Variasi Substrat Putih Telur. 2, 338–343.
- Barriuso, J., Vaquero, M. E., Prieto, A., & Martínez, M. J. (2016). Structural traits and catalytic versatility of the lipases from the *Candida rugosa* -like family : A review. *Biotechnology Advances*, 34(5), 874–885. <https://doi.org/10.1016/j.biotechadv.2016.05.004>
- Dumorné, K., Córdova, D. C., Astorga-eló, M., & Renganathan, P. (2017). *Extremozymes: A Potential Source for Industrial Applications*. 27(4), 649–659.
- Espina, G., Muñoz-ibacache, S. A., & Cáceres-moreno, P. (2022). *From the Discovery of Extremozymes to an Enzymatic Product : Roadmap Based on Their Applications*. 9(January), 1–9. <https://doi.org/10.3389/fbioe.2021.752281>
- Ethica. (2021). *Characterization of Lipolytic Bacteria Bacillus sp. in Wadi of Digestive Organs of Sidat Fish (Anguilla sp.)*. 7(2), 59–67.
- Fatimah, E. (2021). *Review Article: The Characterization and Role Of Lipase Enzym In The Production Of Diacylglycerol From Virgin Coconut Oil*. 10(3), 246–256.
- Ganasen, M., Yaacob, N., Noor, R., Raja, Z., Rahman, A., Thean, A., Leow, C., Basri, M., Bakar, A., Shukuri, M., & Ali, M. (2016). International Journal of Biological Macromolecules Cold-adapted organic solvent tolerant alkalophilic family I.3 lipase from an Antarctic *Pseudomonas*. *International Journal of Biological Macromolecules*, 92, 1266–1276. <https://doi.org/10.1016/j.ijbiomac.2016.06.095>
- Huang, Q., Yi, W., Fan, J., Chen, R., Ma, X., Chen, Z., & Wu, W. (2024). Effects supplementation of novel multi-enzyme on laying performance, egg quality, and intestinal health and digestive function of laying hens ☆. *Poultry Science*, 103(12), 104461. <https://doi.org/10.1016/j.psj.2024.104461>.
- Aghabeigi, F., Nikkhah, H., Zilouei, H., & Bazarganipour, M. (2023). Immobilization of Lipase on the Graphene Oxides Magnetized with NiFe₂O₄ Nanoparticles for Biodiesel Production from Microalgae Lipids. *Process Biochemistry*, 125, 1–10. <https://doi.org/10.1016/j.procbio.2023.01.005>.
- Jawed, A., Kohli, S., Sumera, A., Haque, S., Jazan, U., Saudi, A., Amity, U., Pradesh, U., Kedokteran, F., Internasional, U. K., Lumpur, K., Yat-sen, U. S., Amity, U., & Pradesh, U. (2019). *Jurnal Botani Afrika Selatan*. 120, 25–32.
- Kaur, M., & Gupta, R. (2024). Lipase production from thermotolerant *Bacillus*

- subtilis TTP-06 by statistical approach and its application in bioplastic degradation. *The Microbe*, 3(April), 100093. <https://doi.org/10.1016/j.microb.2024.100093>
- Lubis, S. S. (2015.). *Syafrina Sari Lubis*. 1(1), 87–96.
- Mohanta, S., Bahuguna, M., Baley, J. D., Sharma, S., & Sharma, V. (2023). *Extremophilic Cellulases : A Comprehensive Review*. 08(03). <https://doi.org/10.22146/jtbb.74986>
- Nasir, N., Agustien, A., Panjang, P., & Matematika, F. (2019). *Journal of Biological Sciences*. 6 (July 2016), 119–122.
- Pakhtunkhwa, M. K. (2015). *Screening identification and characterization of lipase producing soil bacteria Pakhtunkhwa, Pakistan Faculty of Medicine, Department of Microbiology, Near East University, Turkish Republic of January*. <https://doi.org/10.12692/ijb/6.2.49-55>
- Pomeistia, M., & Bayani, F. (2021). *Identification Of Activity Lipase Enzyme From Germinating Ketapang Seeds (terminalia cattapa L), Rambutan Seeds (Nephelium lappaceum L.), Avocado Seeds (Persea americana M.), Princess Palm (Veitcheia memili), and Durian Seeds (Durio zibethinus R.)*. 2(1), 99–103.
- Pometia, J. R., Forst, G., Dangeubun, E. J., Katja, D. G., Kumaunang, M., & Ratulangi, U. S. (2022). *Sifat Toksisitas dan Kemampuan Penghambatan Enzim A-Amilase Dari Ekstrak Biji Buah Matoa*. 15(1), 1–8.
- Purcarea, M., Novarino, J., Schopp, J., Audibert, A., Li, W., Fournier, M., Cagnet, L., Naturel, M., Casrouge, A., Nosjean, M.-C. D., Blanchard, N., Dietrich, G., Peirs, C., & Marodon, G. (2024). *mediated modulation of basal somatic sensitivity by regulatory T cells in mice*. 1–17.
- Purwani, N. N. (2018). *Enzim : Aplikasi di Bidang Kesehatan Sebagai Agen Terapi Enzym : Medical Application as Theraphy Agent*. 9(2), 168–176.
- Putri, D. N., Khootama, A., Perdani, M. S., Utami, T. S., & Hermansyah, H. (2020). ScienceDirect Optimization of *Aspergillus niger* lipase production by solid state fermentation of agro-industrial waste. *Energy Reports*, 6, 331–335. <https://doi.org/10.1016/j.egyr.2019.08.064>
- Rani, Z., Miswanda, D., Yuniarti, R., Sutiani, A., Andi, R., & Irma, R. (2022). *Indonesian Journal of Chemical State University of Medan*.
- Rukmi, I., Supriyadi, A., & Lunggani, A. T. (2018). *Eksplorasi Mikroorganisme Termofil Indigenous Dari Sumber Air Panas Gedongsongo Sebagai Penghasil Ensim Termotabil*. 1(1).
- Sajid Ali 1, Sumera Afzal Khan 2, Muhammad Hamayun 3, and I.-J. L. 4, & 1. (2023). *The Recent Advances in the Utility of Microbial Lipases : A Review*.
- Sarah, Q. S., Anny, F. C., & Misbahuddin, M. (2017). *Brine shrimp lethality assay*. 1000 mL, 186–189. <https://doi.org/10.3329/bjp.v12i2.32796>

- Sari, A. K. (2020). *S Screening Lipase From Endophytic Bacteria From Steam Of Pacing and Determination (Costus speciosus (J.Koenig) Sm). 05(1)*, 1–5.
- Supriyatna, A., Amalia, D., Jauhari, A. A., & Holydaziah, D. (2015). *Aktivitas Enzim Amilase, Lipase, dan Protease dari Larva. IX(2)*, 18–32.
- Suyanto, E., Soetarto, E. S., & Cahyanto, M. N. (2015). *Produksi Lipase Kapang Lipolitik Pada Limbah Ampas Kelapa Lipase production from lipolytic fungi in coconut oil cake. 1(1)*, 12–17.
- Uzun, E. (2022). *Characterization of Pseudoalteromonas sp . from Aquaculture Environment and Optimization of Fermentation Culture Parameters by RSM-Based Modeling. 22(11)*.
- Vigna, T. (2021). *Vigna unguiculata). 7(1)*.
- Wiguna, KD. (2019). Pengembangan Elektrode Biosensor Lipase Termotabil Isolat Banyuwedang yang Diamobil dengan PVC Untuk Penentuan Kadar Trigliserida. *1), 2), 3) 1). 5(2)*, 112–121.
- Andini, A., Prayekti, E., Triasmoro, F., & Kamaliyah, I. N. (2021). Pengaruh Penggunaan Jenis Pelarut dalam Uji Sitotoksitas Metode Brine Shrimp Lethality Test (BSLT) pada Wound Dressing Kolagen-Kitosan. *Al-Kimiya, 8(1)*, 15–20. <https://doi.org/10.15575/ak.v8i1.10277>
- Chronopoulou, E., Du, M., Hou, Z., Liu, L., Xuan, Y., Chen, X., Fan, L., Li, Z., & Xu, B. (2022). *challenges and prospects of protein puri fi cation technology. December, 1–26. https://doi.org/10.3389/fbioe.2022.1028691*
- Dwijayanti, E., Alimuddin, A. H., & Wibowo, M. A. (2014). SkriningFitokimia Dan Uji Aktivitas Sitotoksik Pada Kulit Batang Tampoi (Baccaurea macrocarpa) Terhadap Artemia Salina Leach Dengan Metode BSLT. *Jurnal Kimia Khatulistiwa, 3(4)*, 6–10.
- Faisal, P. A., Hareesh, E. S., Priji, P., Unni, K. N., Sajith, S., Sreedevi, S., Josh, M. S., & Benjamin, S. (2014). Optimization of Parameters for the Production of Lipase from Pseudomonas sp. BUP6 by Solid State Fermentation. *Advances in Enzyme Research, 02(04)*, 125–133. <https://doi.org/10.4236/aer.2014.24013>.
- Luthfiana, D. (2021). *Esterifikasi Gliserol dengan Asam Laktat Menggunakan Lipase yang Diimobilisasi pada Zeolit Alam. Bulletin of Chemical Reaction Engineering & Catalysis, 16(1)*, 92–99.
- Mahesar, S. A., Sherazi, S. T. H., Kandhro, A. A., & Mahesar, N. (2019). Monitoring enzymatic hydroesterification of low-cost feedstocks by Fourier Transform InfraRed spectroscopy. *Catalysts, 9(6)*, 535.
- Pavia, D. L., Lampman, G. M., Kriz, G. S., & Vyvyan, J. R. (2015). *Introduction to spectroscopy (5th ed.)*. Cengage Learning.
- Gowthami, P., Muthukumar, K., & Velan, M. (2015). Utilization of coconut oil cake for the production of lipase using Bacillus coagulans VKL. *Biocontrol Science, 20(2)*, 125–133. <https://doi.org/10.4265/bio.20.125>

- Indriyani, D. M., Nurhasanah, N., & Herasari, D. (2021). Optimization of Lipase Production from Local Bacteria Isolate with Palm Oil Inducer. *Jurnal Kimia Sains Dan Aplikasi*, 24(2), 58–61. <https://doi.org/10.14710/jksa.24.2.58-61>.
- Jia, J., Yang, X., Wu, Z., Zhang, Q., Lin, Z., Guo, H., Lin, C. S. K., Wang, J., & Wang, Y. (2015). Optimization of fermentation medium for extracellular lipase production from *Aspergillus Niger* using response surface methodology. *BioMed Research International*, 2015. <https://doi.org/10.1155/2015/497462>.
- Li, X., Morita, S., Yamada, H., Koga, K., Ota, W., Furuta, T., Yamatsu, A., & Kim, M. (2022). *Free Linoleic Acid and Oleic Acid Reduce Fat Digestion and Absorption In Vivo as Potent Pancreatic Lipase Inhibitors Derived from Sesame Meal*.
- Khurniyati MI, Sumarsih S, Ulya C. Screening lipolytic from soil bacterial. *Jurnal Ilmiah*. 6(1):224–8.
- Rosdi, A., Dahalan, F. A., Zhan, L. Z., Babakhani, P., Shams, S., Engineering, C., & Area, P. (2022). *Characterization and morphological study of microbes in treated palm oil mill effluents*. 2, 1–5.
- Ramírez, C., Ibarra, F., Pérez, H. I., Manjarrez, N., Salgado, H. J., & Ortega, L. (2016). Assessment and determination of LC₅₀ of carvacrol and salicylic acid analogues with acaricide activity in larvae and adult ticks of *Rhipicephalus (Boophilus) microplus*. *Parasite Epidemiology and Control*, 1(2), 72–77. <https://doi.org/10.1016/j.parepi.2016.02.006>
- Sarjono, P. R., Ismiyarto, I., Ngadiwiyan, N., & Prasetya, N. B. A. (2022). Bakteri Endofit F4 dari Daun Pepaya (*Carica papaya* L): Potensinya sebagai Penghasil Enzim Ekstraseluler. *Greensphere: Journal of Environmental Chemistry*, 2(1), 1–7. <https://doi.org/10.14710/gjec.2022.14794>
- Stojanović, J., Jakovljević, V., Matović, I., Gajović, O., Mijušković, Z., & Nedeljković, T. (2011). Influence of detergent on metabolic activity of fungi *Aspergillus niger*. *Natural Science*, 03(06), 466–470. <https://doi.org/10.4236/ns.2011.36064>
- Suharno, S. H. P., Wasyilah, T. W., & Nugrahani, R. A. (2019). Pengaruh Konsentrasi Amonium Sulfat Terhadap Rendemen Isolat Protein Defatted Dedak Padi Pada Ekstraksi Menggunakan Air. *Seminar Nasional Sains Dan Teknologi*, 1–5. <https://jurnal.umj.ac.id/index.php/semnastek/article/view/5185>
- Al Mohaini, M., Farid, A., Muzammal, M., Ghazanfar, S., Dadrasnia, A., Alsalman, A.J., Al Hawaj, M.A., Alhashem, Y.N., & Ismail, S. (2022). Enhancing Lipase Production of *Bacillus salmalaya* Strain 139SI Using Different Carbon Sources and Surfactants. *Applied Microbiology*, 2(1), 237–247. <https://doi.org/10.3390/applmicrobiol2010017>

- Zhu, Y., et al. (2020). Recent Development of Extremophilic Bacteria and Their Application in Biorefinery. *Frontiers in Bioengineering and Biotechnology*, 8, 483. <https://doi.org/10.3389/fbioe.2020.00483>.
- Hernández-González, I. L., & Olmedo-Álvarez, G. (2016). Draft whole-genome sequence of the type strain *Bacillus aquimaris* TF12T. *Genome Announcements*, 4(4). <https://doi.org/10.1128/genomeA.00640-16>
- Jhon, S. C. (2020). *Identifikasi dan Karakterisasi Aktivitas Ekstrak Kasar Enzim Median Volume 12 Nomor 1 Bulan Februari 2020*. 12, 28–37.
- Kumakura, D., Yamaguchi, R., Hara, A., & Nakaoka, S. (2023). Disentangling the growth curve of microbial culture. *Journal of Theoretical Biology*, 573(August), 111597. <https://doi.org/10.1016/j.jtbi.2023.111597>
- Maulinda, L. (2017). *Jurnal Teknologi Kimia Unimal*. 2(November), 1–15.
- Mustafa, A., Karmali, A., & Abdelmoez, W. (2016). *A Sensitive Microplate Assay for Lipase Activity Measurement Using Olive Oil A Sensitive Microplate Assay for Lipase Activity Measurement Using Olive Oil Emulsion Substrate: Modification of the Copper Soap Colorimetric Method*. September. <https://doi.org/10.5650/jos.ess16066>
- Rait, A. S., & Bahri, S. (2022). *Pemurnian Parsial Enzim Lipase dari Bakteri Isolat Lokal LKMA 3 dan Penentuan*. 1–5.
- Shintha, Fauziah, L. (2018). Brine Shrimp Lethality Test (BSLT) Isolat Bakteri Asal Sarang Lebah Madu (Apis cerana F.). *Jurnal Bioleuser*, 2(1), 20–23.
- Soleymani, S., Alizadeh, H., Mohammadian, H., Rabbani, E., Moazen, F., Sadeghi, H. M., Shariat, Z. S., Etemadifar, Z., & Rabbani, M. (2017). Efficient media for high lipase production: One variable at a time approach. *Avicenna Journal of Medical Biotechnology*, 9(2), 82–86.
- Stemler, C. D., Lorenz, K. K., & Scherf, K. A. (2024). Rhodamine B-based lipase activity assay with natural substrates—development and application. *International Journal of Food Science and Technology*, 59(2), 1063–1070. <https://doi.org/10.1111/ijfs.16875>
- Supriyatna, A., Amalia, D., Jauhari, A. A., & Holydaziah, D. (2015). *Aktivitas Enzim Amilase, Lipase, dan Protease dari Larva*. IX(2), 18–32.
- Susilowati, F. (2017). Uji Bine Shrimp Lethality Test (BSLT) Ekstrak Etil Asetat Spons *Calthropella* sp. Asal Zona Intertidal Pantai Krakal Gunung Kidul Yogyakarta. *Pharmaceutical Journal of Islamic Pharmacy*, 1(1), 1. <https://doi.org/10.21111/pharmasipha.v1i1.1118>
- Sutrisna, R., Ekowati, C. N., & Sinaga, E. S. (2017). Pengaruh pH terhadap Produksi Antibakteri oleh Bakteri Asam Laktat dari Usus Itik. *Jurnal Penelitian Pertanian Terapan*, 15(3), 234–238. <https://doi.org/10.25181/jppt.v15i3.135>

