DAFTAR PUSTAKA

Abidin, A., 2014. Isolasi Karakteristik Bakteri Simbion pada Cacing Tanah Lumbricus rubellus dari berbagai substrat. Universitas Hasanuddin. Makassar.

Agamennone, V., D. Jakupovie, J.T Weedon, W.J. Suring, N.M. van Straalen, D. Roelofs, W.F.M. 2015. Roling. *FEMS Microbiology Ecology.*

Ahmad, I., Ardana, M., Sulistyarini, R., Prabowo, W.C & Arifuddin, M. 2017. Phytochemical, TLC Profile, and Antioxidant Activity of Malinau Endemic Plant of Tabar Kedayan (Aristolochia papilifolia Ding Hou) Root Fractions. International Journal of ChemTech Research. 10 (2): 84-90.

Alen, Y., Agresa, F.L & Yuliandra, Y. 2017. Thin Layer Chromatography (TLC) Analysis and Antihyperuricemic Activity of Bamboo Shoots Extract Schizostachyum brachycladum Kurz (Kurz) in Male White Mice. Jurnal Sains Farmasi & Klinis. 3 (2): 146-152.

Alfian Syarifuddin, Sodiq Kamal, Fitriana Yuliastuti, Missya Putri Kurnia Pradani, Ni Made Ayu Nila Septianingrum. 2019. Extraction and Identification of Secondary Metabolites from AL6 Isolates and Its Potential as Antibacterial against Escherichia coli. Jurnal Bioteknologi & Biosains Indonesia. 6 (2).

Ali, Salwa Mansur et al. 2019. “Biologically Active Metabolite(s) from Haemolymph of Red-Headed Centipede Scolopendra Subspinipes Possess Broad Spectrum Antibacterial Activity.” *AMB Express* 9(1).

Ansari, Abdullah Adil, and Preeta Saywack. 2011. “Identification and Classification of Earthworm Species in Guyana.” *International Journal of Zoological Research* 7(1): 93–99.

Applied, Indian J. 2021. “ISSN : 0970-2091 Effect of Antibiotics on L-Glutamic Acid Production by Corynebacterium Glutamicum X680.” 36(2): 251–54.

Arslan-Aydogdu, E.O dan Cotuk, A., 2008. Antibacterial and hemolitic activity of the coelomic fluid of Dendrobaena veneta (Oligochaeta, Lumbricidae) living in different localities. IUFS J. Biol 200867: 23-32.

Bahrndorf, S., Nadieh de Jonge, Jacob Kjerulf Hansen, Jinnik Mork Skovgaard Laurizen, Lasse Holt Spanggaard, Mathias Hamaan Sorensen, Morten Yde & Jeppe Lund Nielsen, (2018). Diversity and Metabolic Potential of the Microbiota Associated With A Soil Arthropod. *Scientific report*. 8: 2491.

Balouiri, M., Sadiki, M., & Ibnsouda, S. K. 2016. Methods for in vitro evaluating antimicrobial activity: A review. *Journal of Pharmaceutical Analysis*, *6*(2), 71–79.

Betcher, M.A., Fung, J.M., Han, A.W., O'Connor, R., Seronay, R., Concepcion G.P., Distel, D.L., Haygood, M.G., 2012. Microbial Distribution and Abudance in the Digestive System of Five Shipworm Species (Bivalvia: Teredinidae). *Microbes in the shipworm Digestive Tract.* Vol 7 Hal 1-8.

Brune, A. 2014. Symbiotic digestion of lignocellulose in termite guts. *Nature Reviews Microbiology*, 12(3), 168-180.

Budiarti, Yd. R., Husain, D. R., Hasyim, Z., & Abdulillah, A. (2016). Kemampuan Beberapa Isolat Bakteri Endosimbion Cacing Tanah *Lumbricus rubellus* Dalam Menghambat Pertumbuhan Bakteri Salmonella typhy dan *Stapylococcus aureus.* Universitas Hasanuddin.

Casem, M. L. (Ed.). 2016. *Case studies in cell biology*. Academic Press.

Ciptanto, S., & Paramita, U. 2011, Mendulang Emas Hitam Melalui Budidaya Cacing Tanah. Lily Publisher. Yogyakarta. Hal 5-28.

Croxen, M. A., Law, R. J., Scholz, R., Keeney, K. M., Wlodarska, M., & Finlay, B. B. 2013. Recent Advances in Understanding Enteric Pathogenic Escherichia coli. Clinical Microbiology Reviews.26(4): 822 880.

Collin, Frédéric, Shantanu Karkare, and Anthony Maxwell. 2011. "Exploiting Bacterial DNA Gyrase as a Drug Target: Current State and Perspectives." *Applied Microbiology and Biotechnology* 92(3): 479–97.

Cooper, E. L., & Roch, P. 2003. Earthworm immunity: a model of immune competence: The 7th international symposium on earthworm ecology· Cardiff· Wales· 2002. *Pedobiologia*, *47*(5-6), 676-688.

Dias, R., de Azevedo, J., & Walter, F. 2008. Molecular docking algorithms. *Current drug targets*, *9*(12), 1040-1047.

David WW., and Stout TR. 1971. Disc Plate Method of Micribiological Antibiotic Assay Factors Influencing Variability and Error. Appl Microbial. 22(4): 659-665.

DeLeo, F., and Chambers, H. 2009. Reemergence of antibiotic-resistant Staphylococcus aureusin the genomics era. J. Clin. Invest., 119, 2464-2474

Dales, R. P., & Kalaç, Y. 1992. Phagocytic defence by the earthworm Eisenia foetida against certain pathogenic bacteria. *Comparative Biochemistry and Physiology Part A: Physiology*, *101*(3), 487-490.

Darmi. 2003. Bahan Ajar Biologi Tanah, Universitas Bengkulu, Bengkulu.

Esimone, CO, FB Okoye, CS Nworu, and CO Agubata. 2008. "*In Vitro* Interaction between Caffeine and Some Penicillin Antibiotics against *Staphylococcus Aureus*." *Tropical Journal of Pharmaceutical Research* 7(2): 969–74.

Estrada-Garcia, T., Hodges, K., Hecht, G. A., & Tarr, P. I. 2013. Escherichia coli. In *Foodborne Infections and Intoxications* (Fourth Edi). Elsevier Inc.

Fàbrega, Anna, Sergi Madurga, Ernest Giralt, and Jordi Vila. 2009. "Mechanism of Action of and Resistance to Quinolones." *Microbial Biotechnology* 2(1): 40–61.

Fischbach, M. A., & Walsh, C. T. 2009. Antibiotics for emerging pathogens. *Science*, *325*(5944), 1089–1093.

Gandjar, I.G., & Rohman, A. 2007. *Kimia Farmasi Analisis*. Yogyakarta: Pusat Belajar. Hal 419-425.

Geldenhuys, W. J., Gaasch, K. E., Watson, M., Allen, D. D., & Van Der Schyf, C. J. 2006. Optimizing the use of open-source software applications in drug discovery. *Drug Discovery Today*, *11*(3–4), 127–132.

Gritter, R.J., Bobbit, J.M., & Swharting, A.E. 1991. *Pengantar Kromatografi*. Edisi Kedua. Bandung, ITB.

Harmatang, S., 2014. Isolasi Karakterisasi Bakteri Simbion pada Cacing tanah *Pheretima sp.* dari Berbagai Substrat. Universitas hasanuddin.

Husain, D. R., Fitriani, Hasyim, Z., Abdullah, A., & Sulfahri. 2018. Endosymbiont bacteria of pheretima sp. Earthworms (annelida: Oligochaeta) possesses antibacterial activity. *Asian Journal of Microbiology, Biotechnology and Environmental Sciences*, *20*(4), 1177–1182.

Husain, Dirayah Rauf, and Riuh Wardhani. 2021. “Antibacterial Activity of Endosymbiotic Bacterial Compound from Pheretima Sp. Earthworms Inhibit the Growth of Salmonella Typhi and Staphylococcus Aureus: In Vitro and in Silico Approach.” *Iranian Journal of Microbiology* 13(4): 537–43.

Jack, Ralph W., John R. Tagg, and Bibek Ray. 1995. “Bacteriocins of Gram-Positive Bacteria.” *Microbiological Reviews* 59(2): 171–200.

Jan Hudzicki. 2016. Kirby-Bauer Disk Diffusion Susceptibility Test Protocol. American Society for Microbiology.

Johnson, J. W., Fisher, J. F., & Mobashery, S. 2013. Bacterial cell-wall recycling. *Annals of the New York Academy of Sciences*, *1277*(1), 54–75.

Jamin, F., Abrar, M., Dewi, M Yanrivina S.V.S., Fakhrurrazi, Zakiah, H.M & Syafruddin. 2015. Infeksi Bakteri Escherichia coli pada Anak Ayam Kampung (Gallus domesticus) di Pasar Lambaro Aceh Besar. *Jurnal Medika Veterinaria*. 9 (1); 54-56.

Josephine C.Moran, Emma L.Crank, Hanaa A.Ghabban, Malcolm J. Horsburgh. 2016. Deffered Growth Inhibition Assay to Quantify the Effect of Bacteria-derived Antimicrobials on Competition. *Journal of Visualized Experiments*. 115: 1-5.

Kamdem, Michel Mathurin, Patricks Voua Otomo, Albert Ngakou, and Nicolas Njintang Yanou. 2018. “Distribution and Diversity of Earthworm (Annelida, Clitellata) Populations across Four Land Use Types in Northern Cameroon.” *Turkish Journal of Zoology* 42(1): 79–89.

Kaper, J. B., Nataro, J. P., & Mobley, H. L. T. 2004. Pathogenic Escherichia coli. *Nature Reviews Microbiology*, *2*(2), 123–140.

Kapoor, G., Saigal, S., & Elongavan, A. 2017. Action and resistance mechanisms of antibiotics: A guide for clinicians. *Journal of anaesthesiology, clinical pharmacology*, *33*(3), 300.

Karimela, E. J., Ijong, F. G., Palawe, J. F. P., & Mandeno, J. A. 2019. Isolasi Dan Identifikasi Bakteri Staphylococcus Epidermis Pada Ikan Asap Pinekuhe. *Jurnal Teknologi Perikanan Dan Kelautan*, *9*(1), 35–42.

Lay, B., 1994, Analisis Mikroba di Laboratorium, PT Raja Grafindo Persada, Jakarta

Lade, B.D., Patil, A.S., Paikrao, H.M., Kale, A.S & Hire, K.K. 2014. A Comprehensive Working, Principles and Applications of Thin Layer Chromatography. Research Journal of Pharmaceutical, Biological and Chemical Sciences. 5 (4): 486-503.

Lewis, K. 2013. Platforms for antibiotic discovery. *Nature Reviews Drug Discovery*, *12*(5), 371–387.

Leung, T. L. F., & Poulin, R. 2008. Parasitism, commensalism, and mutualism: exploring the many shades of symbioses. *Vie et Milieu*, *58* (2), 107.

Lipinski, Christopher A. 2016. “Rule of Five in 2015 and beyond: Target and Ligand Structural Limitations, Ligand Chemistry Structure and Drug Discovery Project Decisions.” *Advanced Drug Delivery Reviews* 101: 34–41. http://dx.doi.org/10.1016/j.addr.2016.04.029.

Lipinski, Christopher A., Franco Lombardo, Beryl W. Dominy, and Paul J. Feeney. 2012. “Experimental and Computational Approaches to Estimate Solubility and Permeability in Drug Discovery and Development Settings.” *Advanced Drug Delivery Reviews* 64(SUPPL.): 4–17.

Lu, T. dan Deleo, F.R. 2016. Pathogenesis of Staphylococcus aureus in Humans. National Institutes of Health, Hamilton, MT, USA.

Lund, M. B., Kjeldsen, K. U., & Schramm, A. 2014. The earthworm-Verminephrobacter symbiosis: An emerging experimental system to study extracellular symbiosis. *Frontiers in Microbiology*, *5*(MAR), 1–6.

Maftuhah, A. 2015. *Pengaruh infusa daun beluntas (Pluchea indica) Terhadap pertumbuhan bakteri Staphylococcus epidermidis* (Doctoral dissertation, Universitas Negeri Semarang).

Marialigeti, K. 1979. On the community-structure of the gut-microbiota of Eisenia lucens (Annelida, Oligochaeta). Pedobiologia 19:213-220.

Marliena, L. 2016. Uji Bakteriologis dan Organoleptik Daging Ayam (Gallus gallus domesticus) di Pasar Tradisional dan Pasar Modern Kota Bandar Lampung [Skripsi]. Universitas Lampung, Bandar Lampung.

Manurung, R., Yusfiati, J., & Roslim, D. I. 2011. Pertumbuhan Cacing Tanah (Perionyx sp.) pada Dua Media. *Jom Fmipa*, *1*(2), 291-302.

Mathur abhisek, Rakshanda Bhat, Satish Kumar Verma, and Santosh Kumar Singh. 2010. Antimicrobial Activity of Earthworm Extracts. J. Chem. Pharm. Res. 2(4): 364-370.

Mukesh, B., & Rakesh, K. 2011. ISSN 2229-3566 Review Article MOLECULAR DOCKING : A REVIEW Bachwani Mukesh *, Kumar Rakesh. *International Journal of Research in Ayurveda & Pharmacy*, *2*(6), 1746–1751.

Nemeth, J. Gabriela, O., Stefan, K.P. 2015. Bacteriostatic versus bactericidal antibiotics for patients with serious bacterial infections: systematic review and meta-analysis. Journal of Antimicrobial Chemotherapy. 70(2): 382-95.

Nguyen, T. H., Park, M. D., & Otto, M. 2017. Host response to Staphylococcus epidermidis colonization and infections. *Frontiers in Cellular and Infection Microbiology*, *7*(MAR), 1–7.

Ocampo, P.S., Lazar, V., Papp, B., Arnoldini, M., Wiesch, A.Z., Busa-Fekete, R. Antagonism between Bacteriostatic and Bactericidal Antibiotics Is Prevalent. 2014. *Antimicrobial Agents and Chemotherapy*. 58 (8): 4573-82.

O'Rourke, A., Beyhan, S., Choi, Y., Morales, P., Chan, A. P., Espinoza, J. L., Dupont, C. L., Meyer, K. J., Spoering, A., Lewis, K., Nierman, W. C., & Nelson, K. E. 2020. Mechanism-of-action classification of antibiotics by global transcriptome profiling. *Antimicrobial Agents and Chemotherapy*, *64*(3), 1–15.

Otto, M. 2009. Staphylococcus epidermidis the "accidental" Pathogen. Nature Reviews Microbiology. 7(8): 555-567.

Otto, M. 2012. Molecular basis of Staphylococcus epidermidis infections. In *Seminars in immunopathology* (Vol. 34, No. 2, pp. 201-214). Springer-Verlag.

Palungkun, R. 1999. Sukses beternak cacing tanah Lumbricus rubellus. *Penebar Swadaya, Jakarta*.

Pankey, G.A. dan Sabath, L.D. 2004. Clinical Relevance of Bacteriostatic versus Bactericidal Mechanisms of Action in the Treatment of Gram-Positive Bacterial Infections. Clinical Infectious Diseases. 38: 864-70.

Percival, S. L., & Williams, D. W. 2013. Escherichia coli. In *Microbiology of Waterborne Diseases: Microbiological Aspects and Risks: Second Edition* (Second Edi). Elsevier.

Preethi, J., Harita, B., & Rajesh, T., 2017. Review on Thin Layer Chromatography. Journal of Formulation Science & Bioavailability. 1 (1): 1-4.

Rinto, Ade DS, Kusamawati F. 2010. Bakteri Asam Laktat dari pencernaan Nila dan Tongkol yang Berpotensi Menghambat Bakteri Pembusuk, Pembentuk Histamin dan patogen pada Produk Perikanan. Prosiding Seminar Nasional 13-14 Desember. Fakultas Pertanian Universitas Sriwijaya Indralaya.

Rohman A. 2009. Kromatografi untuk Analisis Obat.Yogyakarta: Graha Ilmu.

Sasmito, W. 2007. Faktor risiko diare pada bayi dan balita di Indonesia. Makara Kesehatan. 11: 1-10.

Schofield, C. 2015. Antibiotics: Current Innovations and Future Trends . Edited by Sergio Sánchez and Arnold L. Demain . *ChemMedChem*, *10*(5), 925–925.

Sharma, P. C., Jain, A., Jain, S., Pahwa, R., & Yar, M. S. 2010. Ciprofloxacin: Review on Developments in Synthetic, Analytical, and Medicinal Aspects. Journal of Enzyme Inhibition and Medicinal Chemistry, 25(4): 577-589.

Setianingsih S. 2010. Kajian Senyawa Antimikroba Bakteri Asam Laktat homofermentatif Isolat Asi. [Skripsi]. Departemen Ilmu Dan Teknologi Pangan. Fakultas Teknologi Pertanian Institut Pertanian Bogor. Bogor.

Sienko, Plane, & Marcus. 1984. *Experimental Chemistry 6th Edition*. Mc Graw Hill Book Co, Songapore,

Situmeang SMF, Musthari, Selamat, R. 2017. Isolasi dan Uji aktivitas antimikroba bakteri asam laktat (BAL) dari yoghurt dalam menghamabat pertumbuhan bakteri Escherichia coli dan Salmonella Typhi. Jurnal Biosains, (3)3: 144-152.

Soebagio, 2002. Kimia Analitik Makassar, Universitas Negeri Makassar Fakultas MIPA.

Suryani, L. 2010. Aktivitas Antibakteri Ekstrak Cacing Tanah (*Lumbricus* sp) terhadap Berbagai Bakteri Patogen secara Invitro. *Mutiara Medika: Jurnal Kedokteran dan Kesehatan*, *10*(1), 16-21.

Syahputra, G, Ambarsari L, and Sumaryada T. 2014. "Simulasi Docking Kurkumin Enol, Bisdemetoksikurkumin Dan Analognya Sebagai Inhibitor Enzim12-Lipoksigenase." *Biofisika* 10(1): 55–67.

Tao, X., Huang, Y., Wang, C., Chen, F., Yang, L., Ling, L., Che, Z., & Chen, X. 2020. Recent developments in molecular docking technology applied in food science: a review. *International Journal of Food Science and Technology*, *55*(1), 33–45.

Tong, S. Y. C., Davis, J. S., Eichenberger, E., Holland, T. L., & Fowler, V. G. 2015. Staphylococcus aureus infections: Epidemiology, pathophysiology, clinical manifestations, and management. *Clinical Microbiology Reviews*, *28*(3), 603–661.

Trimulyani, Y. W., Rokiban, A dan Sari, M. 2019. Ethanol, Chloroform, and N hexane Fractions of Frangipani Flowers (Plumeria acuminate L.) As Antibacterial Against Escherichia coli and Staphylococcus aureus With Bioautography. Jurnal Farmasi Lampung. 8(2):111-122.

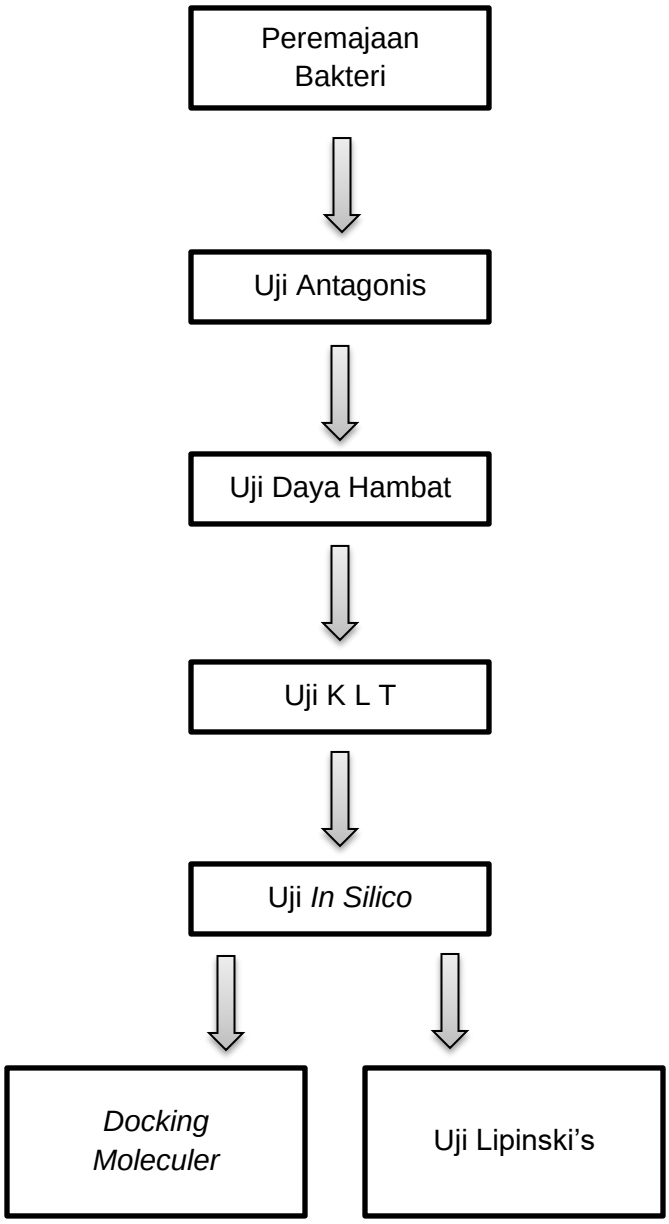
Ursu, Oleg, Anwar Rayan, Amiram Goldblum, and Tudor I. Oprea. 2011. "Understanding Drug-Likeness." *Wiley Interdisciplinary Reviews: Computational Molecular Science* 1(5): 760–81.

Wardhani, R., 2020. Potensi Senyawa Antibiotik Bakteri Endosimbion Cacing Tanah *Pheretima* Sp.dalam Menghambat Pertumbuhan Bakteri Salmonella thypin dan Staphylococcus aureus Secara In-Vitro dan In-Silico.

Yamada, H., Takahashi, N., Okuda, S., Tsuchiya, Y., & Morisaki, H. 2010. Direct Observation and Analysis of Bacterial Growth on an Antimicrobial Surface. *Applied and Environmental Microbiology*. 76(16): 5409-5414.

L A M P I R A N

Lampiran 1. Skema Kerja Penelitian



Lampiran 2.

Skema kerja Uji Antagonis Isolat BLT2 Bakteri Endosimbion Cacing Tanah *Lumbricus* sp.

Uji Antagonis

- Menyiapkan isolat BLT2 dan bakeri uji yang telah diremajakan.
- Bakteri patogen yang digunakan terdiri atas *Eschericia coli, Staphylococcus aureus* dan *Staphylococcus epidermidis.*
- Media yang digunakan untuk uji antagonis adalah Nutrient Agar (NA).
- 1 ml suspensi bakteri uji diinokulasikan kedalam media Nutrient Agar (NA), selanjutnya dituang secukupnya kedalam cawan petri.
- Setelah memadat, selanjutnya isolat BLT2 bakteri cacing tanah *Lumbricus* sp. diinokulasikan dengan menggunakan goresan sinambung.
- Diinkubasi pada suhu 37°C selama 24 - 48 jam

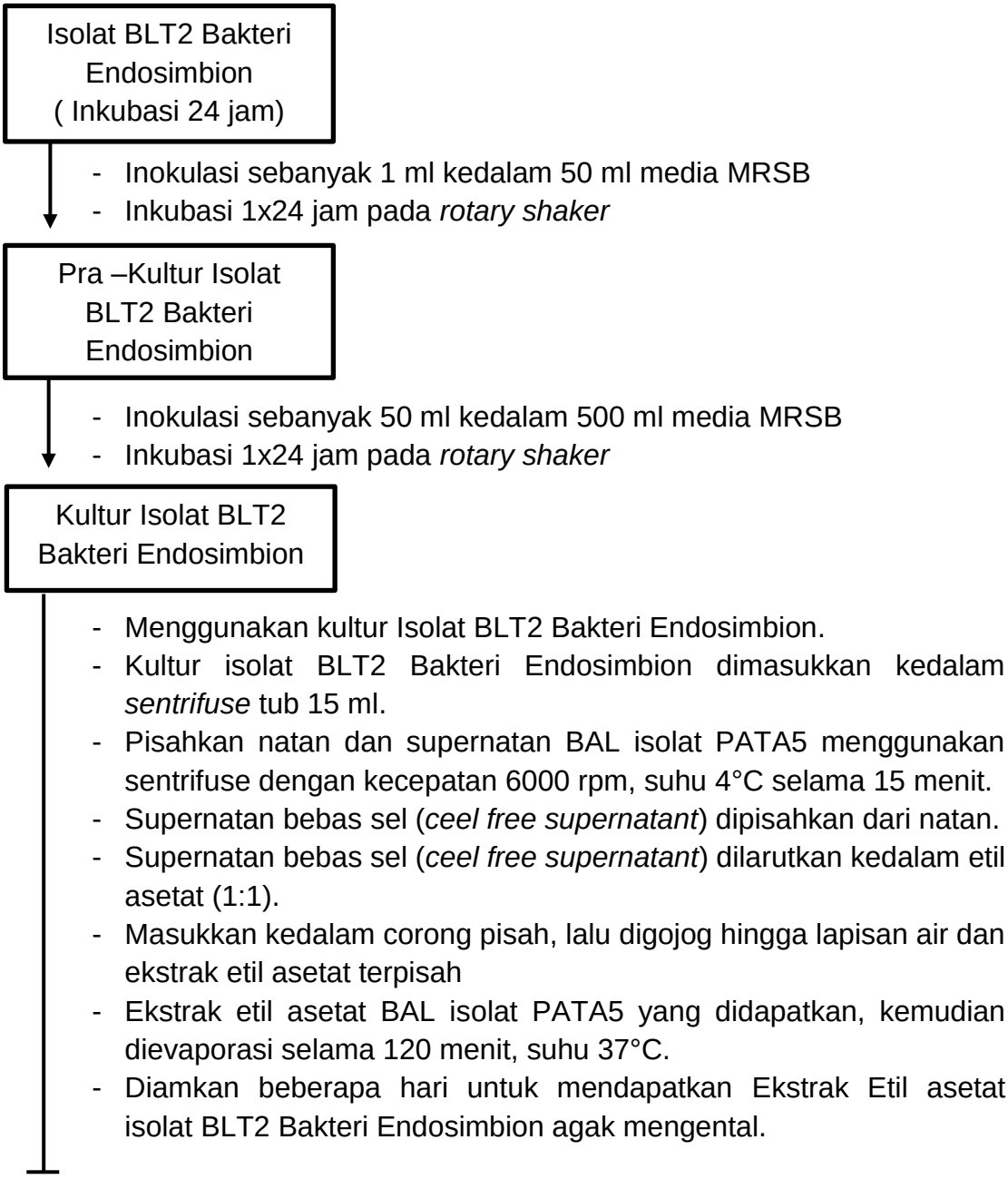
Lampiran 3.

Skema kerja Uji daya Hambat Isolat BLT2 Bakteri Endosimbion Cacing Tanah *Lumbricus* sp.

Uji Daya Hambat

- Menyiapkan isolat BLT2 dan bakeri uji yang telah diremajakan.
- Bakteri patogen yang digunakan terdiri atas *Eschericia coli, Staphylococcus aureus* dan *Staphylococcus epidermidis.*
- Media yang digunakan untuk uji antagonis adalah *Nutrient Agar* (NA)
- Kontrol positif yang digunakan adalah *Cyprofloxacin* sebanyak 0,003 (di gerus terlebih dahulu) disuspensikan ke dalam 9 ml aquadest steril.
- 1 ml suspensi bakteri patogen diinokulasikan ke dalam media agar.
- *Paper disk* steril yang telah di rendam selama 20 menit pada supernatan isolat BLT2 diletakkan dipermukaan media agar pada cawan petri.
- Diinkubasi pada suhu 37°C selama 24-48 jam.

Lampiran 4.
Skema kerja Ekstraksi Isolat BLT2 Bakteri Endosimbion Cacing Tanah *Lumbricus* sp.



Lampiran 5. Uji Kromotografi Lapis Tipis Isolat BLT2 Bakteri Cacing Tanah *Lumbricus* sp.

Ekstrak Etil asetat Bakteri Endosimbion

- Ekstrak Etil asetat isolat BLT2 Bakteri Endosimbion cacing tanah *Lumbricus* sp. di encerkan dengan pelarut etil asetat.

Meode (KLT)

- Menggunakan lempeng fase diam Silica Gel 60 F254 (eMerck) berukuran 1x8 cm, dengan batas bawah dan atas masing-masing berjarak 1 cm.
- Mengaktifkan lempeng Kromatografi Lapus Tipis (KLT) pada pemanasan 100°C menggunakan oven.
- Membuat cairan pengelusi dengan perbandingan Etil Asetat : Metanol (3:7)
- Lempeng Kromatografi Lapis Tipis (KLT) di elusi pada cairan pengembang atau pengelusi untuk menghilangkan zat pengotor yang masih terdapat pada lempeng.
- Lempeng Kromatografi Lapis Tipis (KLT) diangin-anginkan.
- Eskstrak Etil asetat isolat BLT2 Bakteri Endosimbion cacing tanah *Lumbricus* sp. ditotolkan pada spot permukaan Lempeng Kromatografi Lapis Tipis (KLT).
- Lempeng Kromatografi Lapis Tipis (KLT) di eleusi pada cairan pengelusi dengan perbandingan Etil Asetat : Metanol (3:7).
- Lempeng Kromatografi Lapis Tipis (KLT) diangin-anginkan diamati di bawah sinar UV dengan panjang gelombang 245 nm dan 365 nm.
- Mengamati bercak atau noda yang terbentuk.
- Menghitung nilai Rf (*Retention Factor*).

Lampiran 6.
Skema kerja Kromatografi Lapis Tipis (KLT) – Bioautografi Ekstrak Etil Isolat BLT2 Bakteri Cacing Tanah *Lumbricus* sp.

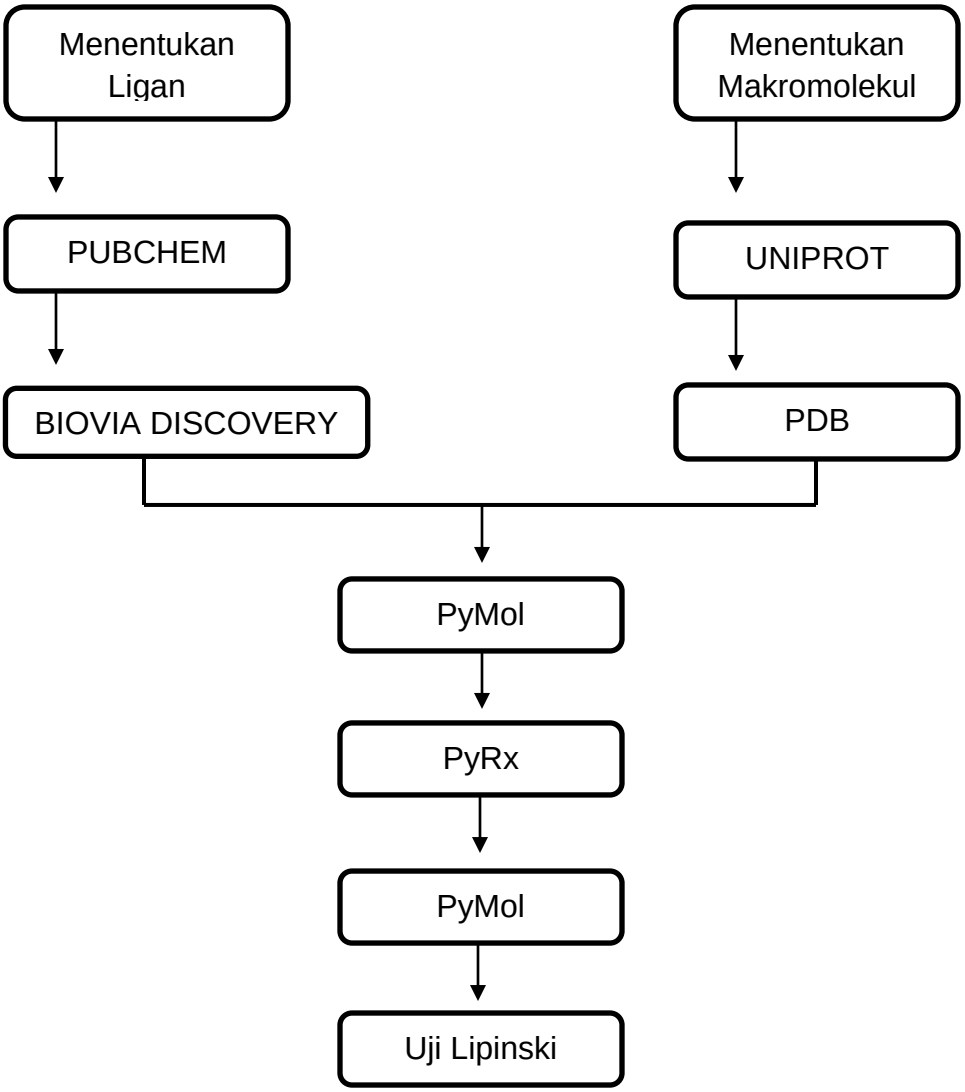
Kromatografi Lapis Tipis (KLT)

- Menggunakan lempeng Kromatografi Lapis Tipis (KLT) Ekstrak etil asetat isolat BLT2 Bakteri endosimbion dengan menggunakan pengelusi Etil Asetat : Metanol (3:7).
- Lempeng Kromatografi Lapis Tipis (KLT) Ekstrak etil asetat isolat BLT2 Bakteri endosimbion di sterilkan terlebih dahulu dengan memasukannya kedalam lemari pendingin selama 15 menit.

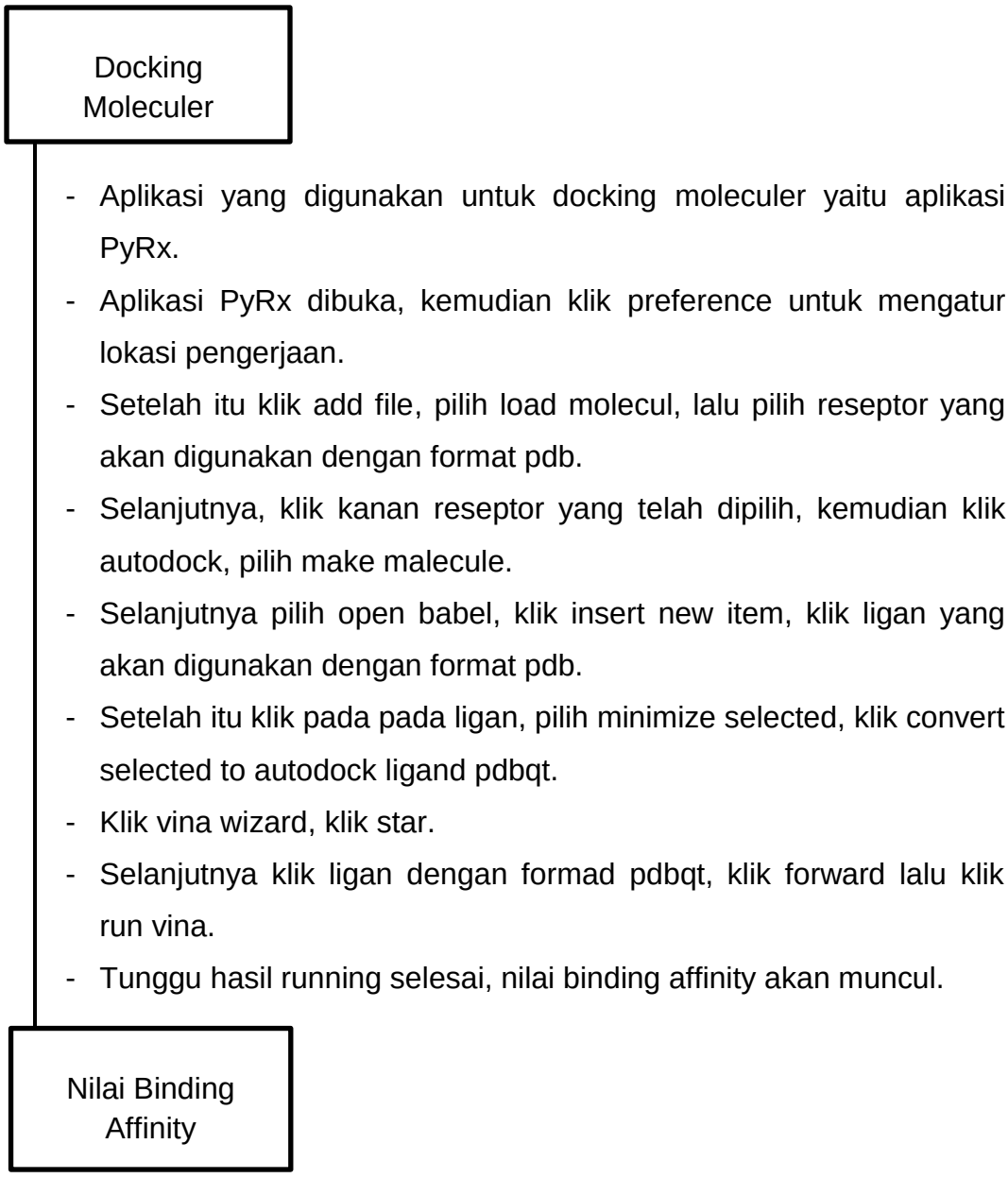
Kromatografi Lapis Tipis (KLT)

- Menyipkan bakteri uji yang telah disuspensi kedalam 9 ml aquadest.
- Sebanyak 10 ml media NA (*Nutrient Agar*) dituang dalam cawan petri yang telah diinokulasikan dengan suspensi bakteri *Escherichia coli*, *Staphylococcus aureus* dan *Staphylococcus epidermidis* sebanyak 0,2 mL lalu dihomogenkan
- Lempeng KLT yang telah dielusi diletakkan diatas permukaan medium agar yang telah diinokulasikan dengan bakteri uji kemudian dibiarkan selama 30 menit. Setelah itu, lempeng diangkat
- Lempeng KLT yang telah ditempelkan pada media agar diinkubasi selama 1x24 jam pada suhu 37 °C menggunakan inkubator.
- Kemudian diamati zona bening yang memberikan aktivitas penghambatan terhadap pertumbuhan bakteri uji.

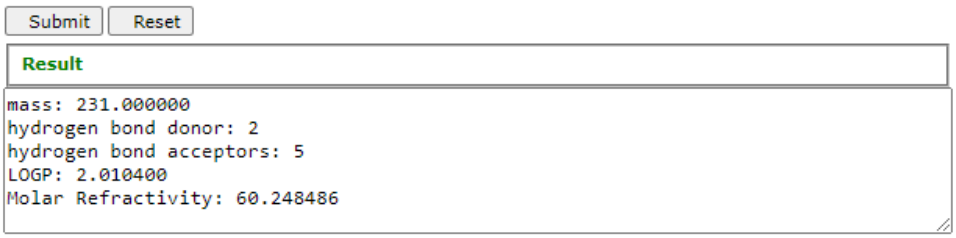
Lampiran 7. Skema Kerja Uji *In Silico*



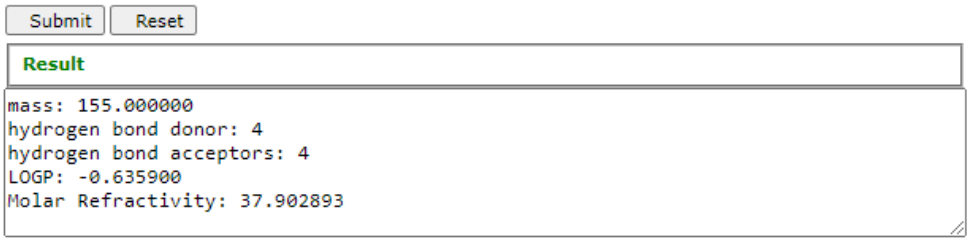
Lampiran 8. Skema kerja Moleculer Docking



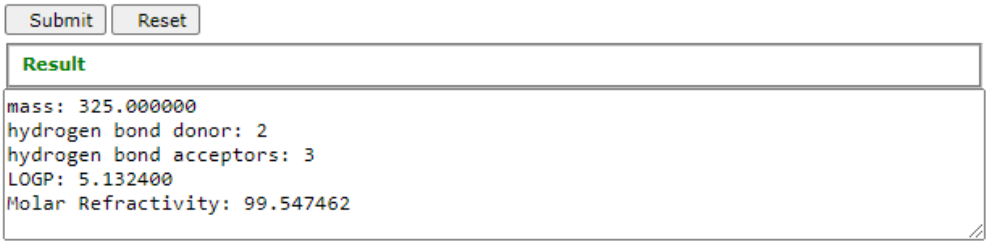
Lampiran 9. Hasil Uji Lipink's



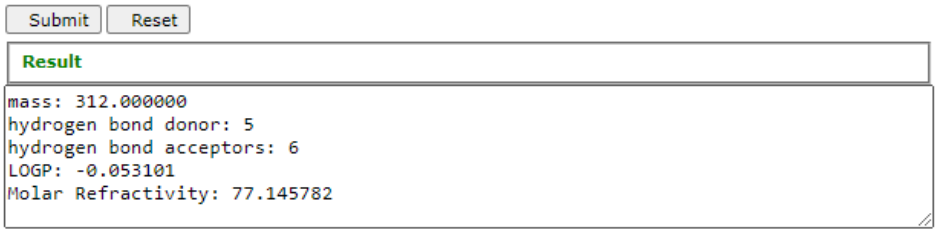
Gambar 1. Hasil Uji Lipinski's Senyawa Isoleucine



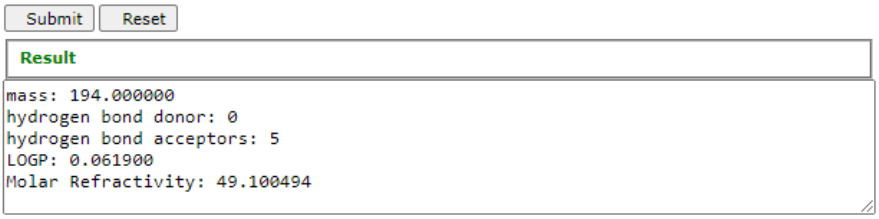
Gambar 2. Hasil Uji Lipinski's Senyawa L-Histidine



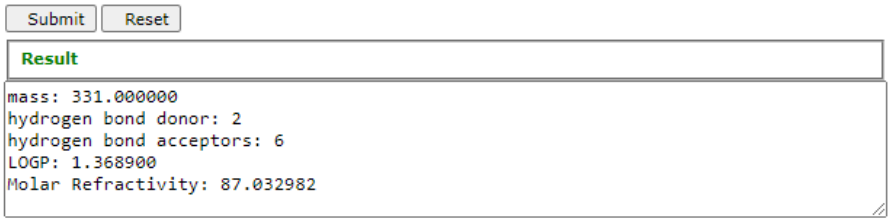
Gambar 3. Hasil Uji Lipinski's Senyawa Oleoyl ethanolamide



Gambar 4 . Hasil Uji Lipinski's Senyawa L-Glutamic acid



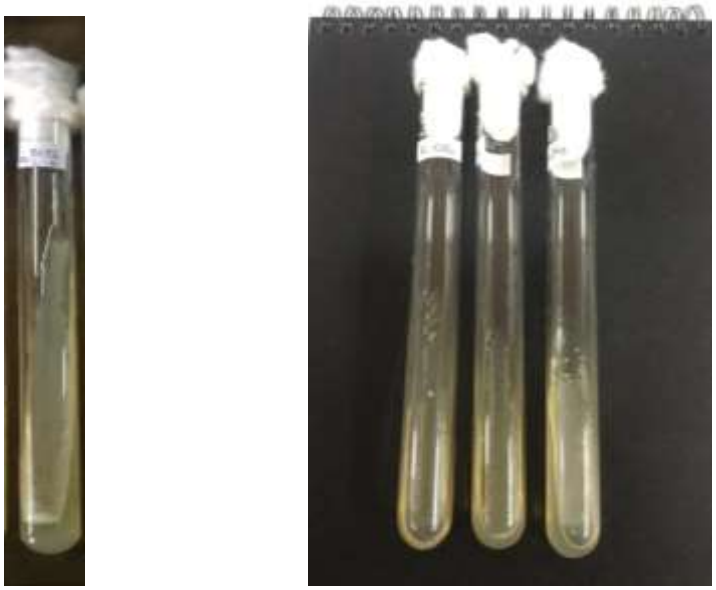
Gambar 5. Hasil Uji Lipinski's Senyawa Caffeine



Gambar 6. Hasil Uji Lipinski's Cyprofloxacin (Kontrol)

Lampiran 10. Dokumentasi

Gambar 1. Kultur Isolat BLT2 Bakteri Cacing Tanah *Lumbricus* sp. media cair TSB



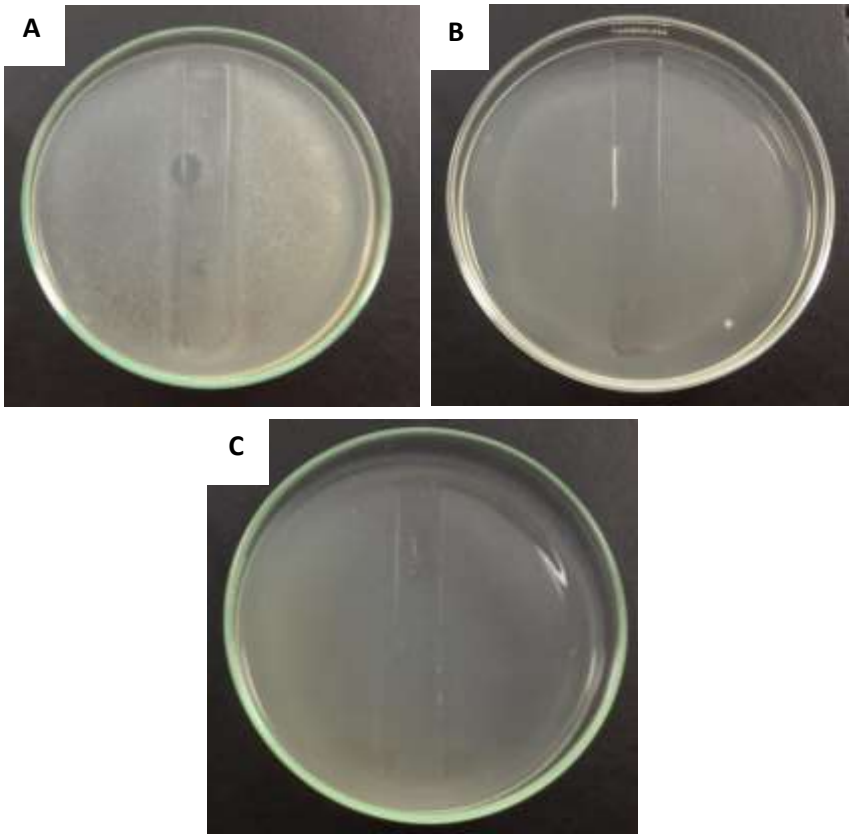
(A) **(B)**

Gambar 2. (A) Stok kultur isolat BLT2 bakteri cacing tanah *Lumbricus* sp. pada media NA miring; (B) Stok kultur Bakteri Uji pada media NA miring.

Gambar 4. Dokumentasi Pengerjaan

Gambar 5. Dokumentasi Pengerjaan Kromotografi lapis Tipis

Gambar 6. Gambar tampak bercak noda kuning (Hasil Uji KLT)



Gambar 7. Hasil Uji KLT-Bioautografi **(A)** *Eschercia coli,* **(B)** *Staphylococcus aureus* dan **(C)** *Staphylococcus epidermidis.*