

DAFTAR PUSTAKA

- Anandan, R., D. Dharumadurai, and G. Ponnusamy. 2016. An introduction to actinobacteria. In: Y. Jiang and D. Dhanasekaran (Eds.) *Actinobacteria Basics and Biotechnological Applications*. Intech Open, London, p: 4-38
- Anjani, T.P., D. Wahjuningrum., and S. Nuryati., I. Khasani 2021. The evaluation of the addition of commercial yeast with β -Glucan content in feed on the immunity of snakehead fish *channa striata* infected by *Aeromonas hydrophila* bacteria. *Journal of Aquaculture and Fish Health* 10(2): 155-164.
- Armaida, E., and S. Khotimah. 2016. Karakterisasi actinomycetes yang berasosiasi dengan porifera (*Axinella spp.*) dari perairan Pulau Lemukutan Kalimantan Barat. *Jurnal Protobiont* 5(1):68-73.
- Astuty, E. 2017. Isolasi dan karakterisasi morfologi aktinomiset indegenus asal tanah gambut. *Jurnal Ilmu Alam dan Lingkungan* 8(16):7-15.
- Bahar, HM., N. G. Ali, I.M. Aboyadak, S.E.S. Khalil, and M.S. Ibrahim. 2019. Virulence genes contributing to *Aeromonas hydrophila* pathogenicity in *Oreochromis niloticus*. *International Microbiology Journal* 2(4):479-490.
- Bakiyev, S., I. Smekenov, I. Zharkova, and S. Kobegenova. 2022. Isolation, identification, and characterization of pathogenic *Aeromonas hydrophila* from critically endangered *Acipenser baerii*. *Aquaculture Reports* 26(22):1-11.
- Barco, R.A., G.M. Garrity, J.J Scott, J.P. Armend, K.H. Nealson, and D. Emerson. 2020. A genus definition for bacteria and archaea based on a standard genome relatedness index. *Ecological and Evolutionary Science Journal* 11(1):1-20.
- Cheah, Y.K., Lee L.H., Chieng C.Y.C, and Wong V.C.M. 2015. Isolation, identification and screening of actinobacteria in volcanic soil of deception island (The Atartic) for antimicrobial metabolites. *Polish Polar Research* 36(1):67-78.
- Dafale, N.A, U.P. Semwal, P.K. Argawal, P. Sharma, and G.N. Singh. 2014. Development and validation of microbial bioassay for quantification of levofloxacin in pharmaceutical preparations. *Journal of Pharmaceutical Analysis* 1(2):1-9.
- Dowling, A., J. O'Dwyer, and C. Adley. 2017. Antibiotics: Mode of action and mechanism of resistance. *Antimicrobial research* 70(1): 536-545.
- Elbendary, A.A., A.M. Hessain, and M.D. El-Haririr. 2018. Isolation of antimicrobial producing actinobacteria from soil samples. *Saudi. Journal of Biological Sciences* 25:44-46.
- Etebu, E., and I. Ariekpar. 2016. Antibiotics: Classification and mechanism of action with emphasis on molecular perspectives. *International Journal of Applied Microbiology and Biotechnology Research* 19(5):90-101.

- Farda, B., R. Djebaili, I. Vaccarelli, M. del Gallo, and M. Pellegrini. 2022. Actinomycetes from caves: an overview of their biotechnological properties, and insights for their soil environment. *Microorganism Journal* 10(453):1-19.
- Fox, G.E., J.D. Wisotzkey, and P. Jurtshuk. 1992. How close is close: 16S rRNA sequence identity may not be sufficient to guarantee species identity. *Internasional Journal and Systematic Bacteriology* 42(1): 166-170.
- Gathogo, E.W.N., A.C.W. Waugh, and N. Peric. 2003. Colony PCR amplification of actinomycetes DNA. *The Journal of Antibiotics* 56(4): 423-424.
- Gokulan, K., S. Khare, and C. Cerniglia. 2014. Production of secondary metabolites of bacteria. *Encyclopedia of Microbiology* 2:561-569.
- Gordhan, B.G., J. Peters, and B.D. Kana. 2019. Application of model systems to study adaptive responses of *Mycobacterium sp.* during infection and disease. *Applied Microbiology Journal* 108:115-161.
- Hamed, S.B., M.J.T. Ranzani-Paiva, L. Tachibana, and D.C. Dias. 2018. Fish pathogen bacteria: adhesion, parameters influencing virulence and interaction with host cells. *Fish and Shellfish Immunology* 80:550-552.
- Heuer, H., M. Krsek, P. Baker, K. Smalla, and E.M. Wellington. 1997. Analysis of actinomycete communities by specific amplification of genes encoding 16S rRNA and gel-electrophoretic separation in denaturing gradients. *Environment Microbiology Journal* 63(8):33-41.
- Isik, K., G. Talha, F. Kocak, E. Cil. 2014. Molecular identification of different *actinomycetes* isolated from east black sea region plateau soil by 16S rRNA gene sequencing. *Journal Microbiology Research* 8(9): 878-888.
- Janda, J.M., and S.L. Abbot. 2007. Minireview: 16S rRNA gene sequencing for bacterial identification in the diagnostic laboratory: pluses, perils, and pitfalls. *Journal Of Clinical Microbiology* 45(9): 2761-2764.
- Jeeva, S., N.C.J. Lekshmi, J. R. Brindha, and A. Vasudeva. 2013. Studies on antibiotic subsceptibility of *Aeromonas hydrophila* isolated from gold fish (*Carassius auratus*). *International Journal of Current Microbiology and Applied Science* 2(12):7-13.
- Jiang, Y., Q. Liu, X. Chen, and C. Jiang. 2016. Isolation and cultivation methods of actinobacteria. *In: Y. Jiang and D. Dhanasekaran (Eds.) Actinobacteria Basics and Biotechnological Applications*. Intech Open, London, p: 39-58
- Jose, P.A., A. Maharshi, and B. Jha. 2021. Actinobacteria in natural products research: progress and prospects. *Microbiological Research Journal* 246(2021)126708: 1-14.
- Kartikaningsih, H., Yahya, F.Z. Rohman, and A.A. Jaziri. 2020. Characteristics of *Aeromonas hydrophila*-infected catfish (*Clarias sp.*). *IOP Conf. Series: Earth and Environmental Science* 493:1-10.

- Krishati, N.P.R., D. Zulfiana, W. Bramatyo, A. Zulfitri, and S. Yusuf. 2018. Antimicrobial production by an actinomycetes isolated from the termite nest. *Journal of Tropical Life Science* 8(3):279-288.
- Kristianingrum, YP., B. Sutrisno, S. Widyarini, and K. Sugiyono. 2021. Disease incidence of freshwater fish in the Special Region of Yogyakarta, Indonesia. *Veterinary Medicine Journal* 33:1-8.
- Krochmal-Kowalska, and R. Dudek-Wicher. 2021. The minimum inhibitory concentration of antibiotics: method, interpretation, clinical relevance. *Antibiotics Journal* 10(2): 154-165.
- Kumalasari, A.M., N. Fathurrahman, dan M. Nur. 2012. Potensi *actinomycetes* sebagai sumber senyawa bioaktif antibiotik dari kawasan karst Bantimurung, Sulawesi Selatan. *Jurnal Pelita* 8(1):1-14.
- Kumar, N, R.V. Singh, S.K. Mishra, and A.H Singh. 2010. Isolation and screening of soil actinomycetes as source of antibiotics active against bacteria. *International Journal of Microbiology Research* 2 (2): 12-16.
- Kurmusaglu, S., N. Gareayaghi, and B.S. Kocazabyek. 2019. Introductory Chapter: The Action Mechanism Of Antibiotics And Antibiotic Resistance. Intech Open, London.
- Li, Q., X. Chen, Y. Jiang, and C. Jiang. 2016. Morphological identification of actinobacteria. *In: Y. Jiang and D. Dhanasekaran (Eds.) Actinobacteria Basics and Biotechnological Applications*. Intech Open, London, p: 59-86
- Maida, S., dan K.A.P. Lestari. 2019. Aktivitas antibakteri amoksisilin terhadap bakteri gram positif dan bakteri gram negatif. *Jurnal Mikrobiologi*. 14(3): 1-10.
- Mandal, S. N.K. Pal, I.H. Chowdhury, and M. Debmandel. 2009. Antibacterial activity of ciprofloxacin and trimethoprim, alone and in combination, against *Vibrio cholerae* biotype el tor serotype ogawa isolates. *Microbiology Journal* 58(1):57-60.
- Meena, B., L. Anburajan, N.V. Vinithkumar, and R. Kirubakaran. 2019. Biodiversity and antibacterial potential of cultivable halophilic actinobacteria from the deep sea sediments of active volcanic barren island. *Microbial Pathogenesis Journal* 132:129-136.
- Meklat, A., N. Bouras, S. Mokrane, and A. Zitouni. 2020. Isolation, classification and antagonistic properties of alkalitolerant actinobacteria from Algerian saharan soils. *Geomicrobiology Journal* 25(2):17-26.
- Mesalhy, S., and A. Albutti. 2014. Antimicrobials use in aquaculture and their public health impact. *Journal of Aquaculture Research & Development* 5(4): 1-6.
- Milah, N., S.H. Bintari, dan D. Mustikaningtyas. 2016. Pengaruh konsentrasi antibakteri propolis terhadap pertumbuhan bakteri *Streptococcus pyogenes* secara in vitro. *Science Journal* 5(2): 95-99.
- Hochreiter, S. 2017. *Bioinformatics I: Sequence and Genome Analysis*. Institute of Bioinformatics, Austria.

- Mustafa, Y., K. Isik, and N. Sahin. 2011. Numerical classification of streptomyces isolated karstic caves in Turkey. *Biological Journal* 35(1):473-484.
- Nahar, S., M.M. Rahman, G.U Ahmed, and A.R. Faruk. 2016. Isolation, identification, and characterization of *Aeromonas hydrophila* from juvenile farmed pangasius (*Pangasianodon hypophthalmus*). *International Journal of Fisheries and Aquatic Studies* 4(4): 52-60.
- Nakashimura, T., R. Miyano, M. Iwatsuki, and T. Shirata. 2016. Iminimycin A: The new iminium metabolite produced by *Streptomyces griseus* OS-3601. *The Journal of Antibiotic* 69:611-615.
- Niyomvong, N., W. Pathom-aree, A. Thamchaipenet, K. Duangmal. 2012. Actinomycetes from tropical limestone caves. *Chiang Mai Journal* 39(3):373-388.
- Nurkanto, A., dan A. Agusta. 2015. Identifikasi molekular dan karakterisasi morfo-fisiologi aktinomisetes penghasil senyawa antimikroba. *Jurnal Biologi Indonesia* 11(2):195-203.
- Palumbo, S.A., D.R Morgan, and R. Buchanan. 2006. Influence of temperature, NaCl, and pH on the growth of *Aeromonas hydrophila*. *Journal Science* 50(19):1-6.
- Pathirana, H.N.K.S., S.H.M.P. Wimalasena, C.J.S. Benthorage, and S. Hossain. 2018. Antibacterial activity of lime (*Citrus Aurantifolia*) essential oil and limonene against fish pathogenic bacteria isolated from cultured olive flounder (*Paralichthys Olivaceus*). *Fisheries amd Aquatic Life Journal* 26:131-139.
- Patil, SM., and P. Parag. 2016. Bactericidal and bacteriostatic infectious diseases and sepsis. In: V. Neri (Eds.) *Infections and Sepsis Development*. Intech Open, London, p : 1-38
- Procopio, R.E., I.R. da Silva, and M.K. Martins. 2012. Antibiotiks produced by *streptomyces*. *Infectious Diseases Journal* 16(5):466-471.
- Rahmah, R. P. A., M. Bahar, dan Y. Harjono. 2017. Uji daya hambat filtrat zat metabolit *Lactobacillus plantarum* terhadap pertumbuhan *Shigella dysenteriae* secara in vitro. *Jurnal Biogenesis UIN Alaudin* 5(1) : 34-41.
- Rante, H., G. Alam, E. Pakki, U. Usmar, and A. Ali. 2020. Identification and antibacterial activity of actinomycetes isolated from medicinal plant *Andrographis paniculata* rhizosphere soil. *Crescent Journal of Medical and Biological Sciences* 7 (4): 1-7.
- Reygaert, W.C. 2018. An overview of the antimicrobial resistance mechanism of bacteria. *AIMS Microbiolgy Journal*. 4(3):482-501.
- Rezaei., N., R Jenkins and F. Cobo. 2021. *Encyclopedia Of Infection And Immunity*. Elsevier, Amsterdam.
- Sanghvi, G.V., D. Ghevariya, S. Gosa, and R. Langa. 2014. Isolation and partial purification of erythromycin from alkaliphilic *Streptomyces werraensis* isolated from Rajkot, India. *Biotechnology Reports* 1(2):1-6.

- Sari, E.T.P., T. Gunaedi, dan E. Indrayani. 2017. Pengendalian infeksi bakteri *A. hydrophila* pada ikan nila (*Oreochromis niloticus*) dengan ekstrak rimpang lengkuas merah (*Alpinia purpurata*). Jurnal Biologi Papua 9(2):37-42.
- Schafer, J., U. Jackel, and P. Kampfer. 2010. Development of a new pcr primer system for selective amplification of actinobacteria 311(2):103-112.
- Schmitt, D.M., D.M. O'Dee, B.N. Cowan, and J.W.M. Birch. 2013. The use of resazurin as a novel antimicrobial agent against *Francisella tularensis*. Microbiology Journal 6(3):80-93.
- Serrano, P. H. 2005. Responsible Use Of Antibiotics In Aquaculture. Food & Agriculture Organization of the United Nations, Rome.
- Shivlata, L., and T. Satyanarayana. 2015. Review : Thermophilic and alkaliphilic actinobacteria biology and potential applications. Frontiers in Microbiology 6(1014):1-29.
- Soltis, P.S., and D.E. Soltis. 2003. applying the bootstrap I phylogeny reconstruction. Statistical Science Journal 18(2):256-267.
- Stach, J.E.M., L.A. Maldonado, A.C. Ward, and M. Goodfellow. New primers for the class actinobacteria: Application to marine and terrestrial environments. Environmental Microbiology 5(10):828-841.
- Stasiak, M., M. Elzbieta, and K. Joanna. 2021. Silent genes: Antimicrobial resistance and antibiotik production. Polish Journal of Microbiology 70(4):421-429.
- Susilowati, Hastuti, dan Yuniarti. 2007. Isolasi dan karakterisasi actinomycetes penghasil antibakteri enteropatogen *Escherichia coli* K1.1, *Pseudomonas pseudomallei* 0205 dan Amonocytogenes 5407. Journal Agro Biogen 3(1): 15-23.
- Tang, H., Shi X., and Wang X. 2016. Enviromental controls over actinobacteria communities in ecological sensitive Yanshan Mountains zone. Microbiologi Journal 10(4):77-89.
- Thangapandian V, Philip Ruban A.C, Prabhu D, and Lingakumar, K. 2011. Isolation and characterization of antibiotiks producing actinomycetes from soil samples of senbagadaruvi in Western Ghats. Bioresearch Bulletin 4: 254-259.
- Ulfah, M., N. Khasanah, & N.S Handayani. 2017. Bioactivity and genetic screening of marine actinobacteria associated with red algae *Gelidiella acerosa*. Indonesian Journal of Biotechnology 22(1):13-21.
- Yanong, R. 2013. Use of antibiotics in ornamental fish aquaculture. Florida University. Florida.
- Yuhui, W., Shi J. Tang L, Zhang Y, Zhang Y, Wang X, and Zhang X. 2021. Evaluation of RPF protein of *Micrococcus luteus* for cultivation of soil actinobacteria. Systematic and Applied Microbiology Journal. 44(2021):1-8.

Zhu, W., Zhou S., and Chu W. 2020. Comparative proteomic analysis of sensitive and multi-drug resistant *Aeromonas Hydrophila* isolated from diseased fish. *Microbial Pathogenesis* 113(1):1-22.