UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Acinas S G., V. Klepac-Ceraj, D.E. Hunt, C. Pharino, I. Ceraj, D. L. Distel & M.F. Polz. 2004. Fine-scale phylogenetic architecture of a complex bacterial community. Nature. 430: 551-554.

Agarwal V., A. A. El Gamal, K. Yamanaka, D. Poth, R. D. Kersten, M. Schorn, E. Allen, & B. S. Moore. 2014. Biosynthesis of polybrominated aromatic organic compounds by marine bacteria. Natural Chemical Biology. 10: 640–647. https://doi.org/10.1038/nchembio.1564.

Agrios G N. 2005. Control of plant diseases. Plant Pathology. Pages 293-353. https://doi.org/10.1016/B978-0-08-047378-9.50015-4

Alkhalili R. N. & B. Canbäck. 2018. Identification of putative novel class-i lanthipeptides in firmicutes: a combinatorial in silico analysis approach performed on genome sequenced bacteria and a close inspection of Z-geobacillin lanthipeptide biosynthesis gene cluster of the Thermophilic *Geobacillus* sp. strain ZGt-1. Internationa Joural Molecular Science. 19: 2650. Doi: 10.3390/ijms19092650

Altschul S. F., W. Gish, W. Miller, E. W. Myers, & D. J. Lipman. 1990. Basic local alignment search tool. Journal Molecular Biology. 215:403–410.

Andreyeva, I. N, & T. I. Ogorodnikova. 2015. Pigmentation of *Serratia marcescens* and spectral properties of prodigiosin. Microbiology. 84: 28−33.

Annamalai R, J. Bo, C. Zhenghua, M. C. Salete, Newton, & E. K. Phillip. 2004. Recognition of ferric catecholates by FepA. Journal of Bacteriology. 186: 3578-3589. Doi 10.1128/JB.186.11.3578-3589.2004.

Aoki T. 1992. Chemotherapy and drug resistance in fish farms in Jepang. In: Diseases in Asian aquaculture I. Fish Health Section, Shariff, M., Subasinghe, RP. & J.R. Arthur (Eds.). Asian Fisheries Society, Manila Philippines, ISBN: 9718709215, pp: 519-529.

Apriliani M, Sarjito & H. A. H. Condro. 2016. Keanekaragaman agensia penyebab vibriosis pada udang vaname (*Litopenaeus vannamei*) dan sensitivitasnya terhadap antibiotik. Journal of Aquaculture Management and Technology. 5: 98-107.

Aranda C P, C. Valenzuela, J. Barrientos, J. Paredes, P. Leal, M. Maldonado, F. A. Godoy, & C. G. Osorio. 2012. Bacteriostatic anti-*Vibrio parahaemolyticus* activity of *Pseudoalteromonas sp*. strains DIT09, DIT44 and DIT46 isolated from Southern Chilean intertidal *Perumytilus purpuratus*. World Journal of Microbiology and Biotechnology. 28: 2*366*–2374. doi: 10.1007/s11274-012-1044-z

Arivuselvan J, D. Silambarasan, T. Govindan, & K. Kathiresan. 2011. Antibacterial activity of mangrove leaf and bark extracts against human pathogens. Advanced Biological Research. 55: 251-4

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Arnison P G, M. J. Bibb, G. Bierbaum, A. A. Bowers, T. S. Bugni, G. Bulaj, J. A. Camarero, D. J. Campopiano, G. L. Challis, & J. Clardy. 2013. Ribosomally synthesized and post-translationally modified peptide natural products: Overview and recommendations for a universal nomenclature. Natural Product Report. 30: 108–160.

Atencio L A, D. G. Francesco, O. Y. Giannina, G. Ronnie G, M. G. Hector, S. Imke, C. M. Luis, & G. Marcelino. 2018. Antimicrobial producing *Pseudoalteromonas* from the marine environment of Panama shows a high phylogenetic diversity and clona structure. Journal Basic Microbiology. 58:747-769

Atencio L A, A. B. P. Cristopher, M. H. Christian, C. M. Luis, C. D. Pieter, & G. Marcelino. 2020. Genome mining, microbial interactions, and molecular networking reveals new dibromoalterochromides from strains of *Pseudoalteromonas* of Coiba National Park-Panama. Marine Drugs 19: 456-474. 10.3390/md18090456

Austin B, M. Stobie, P. A. W. Robertson, H. G. Glass, J. R. Stark & M. Mudarris. 1993. *Vibrio alginolyticus*: the cause of gill disease leading to progressive low-level mortalities among juvenile turbot, *Scophthalmus maximus* L., in a Scottish aquarium. Journal of Fish Disease. 16: 277-280.

Austin B & X. H. Zhang. 2006. *Vibrio harveyi*: a significant pathogen of marine vertebrates and invertebrates. Letters in Applied Microbiology. 43: 119-124.

Austin B & D. A. Austin. 2007. Bacterial fish pathogens: Disease of farmed and wild fish, 6th Ed. Springer Praxis Publishing, Chichester, United Kingdom, 552 pp

Austin B. 2010. *Vibrio* as causal agents of zoonoses. Veterinary Microbiology. 140: 310-317.

Austin B & D. A. Austin. 2016. Bacterial fish pathogens: Disease of farmed and wild fish, 6th edition. Springer International Publishing, Switzerland.

Balibar C. J & C. T. Walsh. 2006. In vitro biosynthesis of violacein from L-Tryptophan by the Enzymes VioA-E from *Chromobacterium violaceum*. Biochemistry. 45: 15444-15457.

Baticados M C L., C. R. Lavilla-Pitogo, E. R. Cruz Lacierda, L. D. de la Pena & N. A. Sunaz. 1990. Studies on the chemical control of luminous bacteria *Vibrio harveyi* and *V. splendidus* isolated from diseased *Penaeus monodon* larvae and rearing water. Disease of Aquatic Organisms. 9: 133-139. doi: 10.3354/dao009133

Batiha G E., A. Ali, B. I. Omotayo, A. S. Abdullah, I. Amany, F. H. Helal, & M. B. Amany. 2020. Avermectin derivatives, pharmacokinetics, therapeutic and toxic dosages, mechanism of action, and their biological effects. Pharmaceuticals. 13: 198. https://doi.org/10.3390/ph13080196

Baumann L., P. Baumann, M. Mandel, & R. D. Allen. 1972. Taxonomy of aerobic marine eubacteria. Journal of Bacteriology. 110: 402-429.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Bayer, A. S., A. W. Chow, J O Morisson, L B. Guze. 1980. Bactericidal synergy between penicillin or ampicillin and aminoglycosides against antibiotic-tolerant Lactobacilli. Antimicrobial agents and chemotheraphy. 17: 359-363.

Bellos G, P. Angelidis, & H. Miliou, 2015. Effect of temperature and seasonality principal epizootiological risk factor on vibriosis and photobacteriosis outbreaks for European sea bass in Greece (1998-2013). Journal of Aquaculture Research and Development. 6: 338

Bhattacharya S, J. D. Choudhury, R. Gachhui, & J. Mukherjee. 2018. A new collagenase enzyme of the marine sponge pathogen *Pseudoalteromonas agarivorans* NW4327 is uniquely linked with a TonB dependent receptor. International Journal of Biology and Macromolecules. 109: 1140–1146. doi:10.1016/j.ijbiomac.2017.11.1

Blin K, S. Simon, S. Katharina, V. Rasmus, Z. Nadine, Y.L. Sang, H. M. Marnix, & W. Tilmann. 2019. antiSMASH 5.0: updates to the secondary metabolite genome mining pipeline. Nucleic Acids Research. 47: 81–87. https://doi.org/10.1093/nar/gkz310

Bobzin S C., S. T. Yang, & T. P. Kasten. 2000. Application of liquid chromatography-nuclear magnertic resonance spectroscopy to the identification of natural product. Journal of Chromatography. 748: 259-267

Bonev B & J. Hooper. 2008. Principles of assessing bacterial susceptibility to antibiotics using the agar diffusion method. Journal of Antimicrobial Chemotherapy. 61: 1295–1301.

Borokhov O & S. David. 2007. Antimicrobial properties of boron derivatives. ACS Symposium Series; American Chemical Society: Washington, DC. Chapter 20: 1-24.

Bosi E, M. Fondi, V. Orlandini, E. Perrin, I. Maida, D. de Pascale, M. L. Tutino, E. Parrilli, A. Lo-Giudice, A. Filloux, & R. Fani. 2017. The pangenome of (Antarctic) *Pseudoalteromonas* bacteria: evolutionary and functional insights. BMC Genom. 18: 93. 10.1186/s12864-016-3382-y

Bowman J P. 2007. Bioactive compound synthetic capacity and ecological significance of marine bacterial genus *Pseudoalteromonas.* Marine Drugs. 5: 220-241

Boyer R F. 2012. Biochemistry Laboratory. Modern theory and Techniques. Pearson.

BPS. 2021. Produksi Perikanan Tangkap di Laut Menurut Komoditas Utama (Ton), 2017. https://www.bps.go.id/indicator/56/1515/1/produksi-perikanan-tangkap-di-laut-menurut-komoditas-utama.html.

Breinbauer R, I. R. Vetter, & H. Waldmann. 2002. From protein domains to drug candidates – natural products as guiding principles in the design and synthesis

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

of compound libraries. Angewandte Chemie International Edition. 1143002–3015

Breydo, L. 2013. Boron, Biologically Active Compound. Encyclopedia of Metalloproteins. DOI 10.1007/978-1-4614-1533-6,

Bruno D W, J. Griffiths, J. Petrie, & S. Hastings. 1998. *Vibrio viscosus* in farmed Atlantic salmon *Salmo salar* in Scotland: field and experimental observations. Disease of. Aquatic Organisms. 34: 161-166.

Bucchini F., D. C. Andrea, K. Łukaz, B. Alexander, V. Michiel & V. Klaas. 2020. TRAPID 2.0: a web application for taxonomic and functional analysis of de novo transcriptomes. Biorxyv. https://doi.org/10.1101/2020.10.19.345835.

Burkholder P., R. Pfister & F. Leitz. 1966. Production of a pyrrole antibiotic by a marine bacterium. Applied Microbiology. 14: 649-653.

Bush, K. 2017. Synergetic Antibiotic Combinations. Top Medical Chemistry. DOI: 10.1007/7355_2017_23

Busch J. 2018. The diversity, distribution, and biological activity of brominated natural products in the genus *Pseudoalteromonas*. Dissertasion. University of California San Diego.

Camp D., R.A. Davis, E. A. Evans-Illidge & R. J. Quinn. 2012. Guiding principles for natural product drug *disc*overy. Future Medicinal Chemistry. 4: 1067 - 1084

Caroll A R., R. C. Brent, A. D. Rohan, A. K. Robert & R. P. Mich. 2019. Marine natural products. Natural Product Report. 36: 122-173. doi: 10.1039/c8np00092a.

Castro A E & C. C. Salibay. 2018. Anti-methicillin resistant *Staphylococcus aureus* (MRSA) activity of *Pseudoalteromonas flavipulchra* isolated from marine waters of Batangas, Philippines. Walailak Journal Science and Technology. 17: 570-578.

Chellaram C, T. P. Anand, C. F. Shanthini, B. A. Kumar, & S. P. Sharma. 2013. Bioactive peptides from epibiotic *Pseudoalteromonas* strain P1. APCBEE Procedia 2: 37-42.

Choma, I M & E. M. Grzelak. 2011. Bioautography detection in thin layer chromatography. Journal of Chromatography. 1218: 2684-2691.

Chumpol S, K. Duangporn, R. Pattamarat, T. Salwa, N. Teruhiko, & K. Hiroshi. 2019. Optimization of culture conditions for production of anti*vibrio* compounds from probiotic purple nonsulfur bacteria against acute hepatopancreatic necrosis disease-causing *Vibrio parahaemolyticus* and *Vibrio* spp. Aquaculture. 505: 72-83. https://doi.org/10.1016/j.aquaculture.2019.02.040

Costa R A, L. A. Rayza, V. S. Oscarina, & H. S. F. V. Regine. 2015. Antibiotics resistant vibrios in farmed shrimp. Biomed Research International. 1-5

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Cremen P A & L. Zeng. 2002. High-throughput analysis of natural product compound libraries by parallel LC–MS evaporative light scattering detection. Analitical Chemistry. 74: 5492–5500.

Dachriyanus. 2004. Analisis struktur senyawa organik secara spektroskopi, Padang. Lembaga pengembangan teknologi informasi dan komunikasi universitas andalas.

Darabpour E, R. A. Mohammad, M. Hossein, & T. R. Mohammad. 2011. Isolation of broad spectrum antibiotic producer bacterium, *Pseudoalteromonas piscicida* PG-02, from the Persian Gulf. Bangladesh Journal of Pharmacology. 6: 74-83. doi: 103329/bjp.v62.8592.

Das B & S. Patra. 2017. Antimicrobial: Meeting the challenges of antibiotics resistance through nanotechnology. Book chapter. Nanostructure for antimicrobial therapy. Pages 1-22ISBN 978-0-323-46152-8

Davati N & M. H. Najafi. 2013. Overproduction strategies for microbial secondary metabolites. International of life science and pharma research. 3: 23-37.

Davis J J., R. W. Alice, K. A. Ramy, B. Thomas, B. Ralph, M. B. Rory, C. Philippe, C. Neal, D. Allan, M. D. Emily, L. G. Joseph, G. Svetlana, G. Andrew, W. K. Ronald, M. Dustin, M. Chunhong, M-O .Dan, N. Marcus, K. N. Eric, J. O. Gary, D. O. Robert, C. O. Jamie, O. Ross, P. Bruce, D. P. Gordon, S. Maulik, T. Chris, V. Margo, V. Veronika, S. W. Andrew, X. Fangfang, X. Dawen, Y. Hyunseung, & S. Rick. 2020. The PATRIC Bioinformatics Resource Center: expanding data and analysis capabilities. Nucleic Acids Resesarch. 48: 606-612. https://doi.org/10.1093/nar/gkz943

de Coster W D., S, D. T. Schultz, M. Cruts, & C. van Broeckhoven. 2018. NanoPack: visualizing and processing long-read sequencing data. Bioinformatics. 34: 2666-2669. https://doi.org/10.1093/bioinformatics/bty149.

Dehpour A A., B. Babakhani, S. Khazaei, & M. Asadi. 2011. Chemical composition of essential oil and antibacterial activity of extracts from flower of *Allium atroviolaceum*. Journal of Medicinal Plants Research. 5: 3667-3672.

Deinstrop H. 2007. Applied thin-layer chromatography. Weinheim: WileyVCH Verlag GmbH & Co. KGaA

Del Castillo C S., M. I. Wahid, T. Yoshikawa, & T. Sakata. 2008. Isolation and inhibitory effect of anti*Vibrio* substances from *Pseudoalteromonas sp*. A1-J11 isolated from the coastal seawater of Kagoshima Bay. Fisheries Science. 74: 174–179. https://doi.org/10.1111/j.1444-2906.2007.01507.x

Demain A L. 1999. Pharmaceutically active secondary metabolites of microorganisms. Applied of Microbiology and Biotechnology. 52: 455–463.

Deng Y, X. Liwen, C. Haoxiang, L. Songlin, G. Zhixun, C. Changhong, M. Hongling, & F. Juan. 2020. Prevalence, virulence genes, and antimicrobial resistance of

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Vibrio spesies isolated from diseased marine fish in South China. Scientific Report. 10: 14329. https://doi.org/10.1038/s41598-020-71288-0

Dong H T., S. Taengphu, P. Sangsuriya, W. Charoensapsri, K. Phiwsaiya, T. Sornwatana, P. Khunrae, T. Rattanarojpong, & S. Senapin. 2017. Recovery of *Vibrio harveyi* from scale drop and muscle necrosis disease in farmed barramundi, *Lates calcarifer* in Vietnam. Aquaculture. 473: 89–96.

Eaves L E & P. J. Ketterer. 1994. Mortalities in red claw crayfish *Cherax quadricarinatus* associated with systemic *Vibrio mimicus* infection. Disease of Aquatic Organisms. 19: 233-237.

Egan S, C. Holmström, & S. Kjelleberg. 2001. *Pseudoalteromonas ulvae* sp nov., a bacterium with antifouling activities isolated from the surface of a marine alga. Internatioanl Journal of Systematic Evolutionary Microbiology. 51: 1499–1504. doi: 10.1099/00207713-51-4-1499

Elmahdi S, L. V. Da Silva & S. Parveen. 2016. Antibiotic resistance of *Vibrio parahaemolyticus* and *Vibrio vulnificus* in various countries: A review. Food Microbiology. 57: 128-134.

Essam H M., G. S. Abdellrazeq, S. I. Tayel, H. A. Torky & A. H. Fadel. 2016. Pathogenesis of *Photobacterium damselae* subspesies infections in sea bass and sea bream. Microbology and Pathology. 99: 41-50.

Esteve C, C. Amaro, E. G. Biosca & E. Garay. 1995. Biochemical and toxigenic properties of *Vibrio*

Fangming L, W. Yibin, Q. Changfeng, Z. Zhou, M. Jinlai, X. Hua & X. Tian. 2017. The complete genome of hydrocarbon-degrading *Pseudoalteromonas sp*. NJ289 and its phylogenetic relationship. Acta Oceanologica Sinica. 36: 88–93.

FAO SOFIA. 2020. The state of world fisheries and aquaculture. Rome. https://doi.org/10.4060/ca9229en

Farmer, J.J. & J.M. Janda. 2006. Bergey's Manual of Systematic Bacteriology. 2nd ed. Vol 2. The Protobacteria. Part B Gammaprotobacteria. Springer. USA. 1127 p

Faruque A S G. 2007. Emergence of multidrug resistant strain *Vibrio cholera* O I in Bangladesh and reversal of their susceptibility to tetracycline after two years. Letter to the editor. Journal of Health Population Nutrition. 25: 241-243.

Fehér D., R. S. Barlow, P. S. Lorenzo, & T. K. Hemscheidt. 2008. A 2-substituted Prodiginine, 2-(p-hydroxybenzyl) prodigiosin, from *Pseudoalteromonas rubra*. Journal of Natural Product. 71: 1970–1972.

Felix F., T. N. Titania, S. Sila & O. Yuslina. 2011. Skrining bakteri *Vibrio* sp. asli Indonesia sebagai penyebab penyakit udang berbasis tehnik 16s ribosomal DNA. Jurnal Ilmu dan Teknologi Kelautan Tropis. 3: 85-99

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Fessenden R J & J. S. Fessenden. 1982. Kimia Organik, diterjemahkan oleh Pudjaatmakan, A. H. Edisi Ketiga. Jilid 1. Penerbit Erlangga, Jakarta.

Fouz B., J. L. Larsen & C Amaro. 2006. *Vibrio vulnificus* serovar A: an emerging pathogen in *European* anguillid culture. Journal of Fish Disease. 29: 285-291.

Franks A, S. Egan, C. Holmstrom, S. James, & H. Lappin-Scott, S. Kjelleberg. 2006. Inhibition of fungal colonization by *Pseudoalteromonas tunicata* provides a competitive advantage during surface colonization. Applied of Environmental and Microbiology. 72: 6079–6087. doi: 10.1128/AEM.00559-06

Frans I, C. W. Michiels, P. Bossier, K. A. Willems, B. Lievens & H. Rediers. 2011. *Vibrio anguillarum* as a fish pathogen: virulence factors, diagnosis and prevention. Journal of Fish Disease. 34: 643-661.

GAA 2013. Cause of EMS shrimp disease identified. In: GAA News Releases, Available: http://www.gaalliance.org/newsroom, Accessed date: 29 September 2021.

Gao X, L. Ying, L. Er-Wei, H. Ting-Ting, & L. Zhi-Pei. 2017. Mechanism of anti-*Vibrio* activity of marine probiotic strain *Bacillus pumilus* H2, and characterization of the active substance. AMB Express. 7: 23. Doi: 10.1186/s13568-017-0323-3

Garrity G M. 2005. Bergey's Manual of Systematic Bacteriology. 2nd ed. Vol 2. The Protobacteria, Springer. USA. 313 p

Gauthier M J & G. N. Flatau. 1976. Antibacterial activitiy of marine violet pigmented *Alteromonas* with special reference to the production of brominated compounds. Can. Journal of Microbiology. 22: 1612-1619.

Gauthier M J & V. A. Breittmayer. 1979. A new antibiotic-producing bacterium from seawater: *Alteromonas aurantia sp.nov*. International Journal of Systematical Bacteriology. 29: 366–372

Gauthier M J. 1982. Validation of the name *Alteromonas luteoviolacea*. International Journal of Systematical Bacteriology. 32: 82–86

Gauthier G., M. Gauthier & R. Christen. 1995. Phylogenetic analysis of the genus *Alteromonas*, *Shewanella*, and *Moritella* using genes coding for small-subunit rRNA sequences and division of the genus *Alteromonas* into two genera, *Alteromonas* (Emended) and *Pseudoalteromonas* gen. nov., and proposal of twelve new spesies combinations. International Journal of Systematical Bacteriology. 45: 755-761

Gharpure S. J. & L. N. Nanda. 2017. Application of oxygen/nitrogen substituted donor-acceptor cyclopropanes in the total synthesis of natural products. Tetrahedron Letters. 58: 711-720. http://dx.doi.org/10.1016/j.tetlet.2017.01.033

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Gibbons S. 2006. An Introduction to Planar Chromatography. In S. D. Sarker, Z. Latif, & A. I. Gray, Methods in Biotechnology Vol 20. Natural Products Isolation, Second Edition. Totowa, New Jersey: Humana Press Inc: 77.

Gokulan K., S. Khare, & C. Cerniglia. 2014. Metabolic Pathways: Production of Secondary Metabolites of Bacteria. In: Batt, C.A., Tortorello, M.L. (Eds.), Encyclopedia of Food Microbiology, vol 2. Elsevier Ltd, Academic Press, pp. 561–569.

Hall B G. 2013. Building phylogenetic trees from molecular data with Mega. *M*olecular Biology and Evolution*.* 30: 1229–1235,

Hamdillah A, A. Isnansetyo, I. Istiqomah, I. D. Puspita, D. P. Handayani & K. Takushi. 2019. Antibacterial activity of coastal plan and marine sponge from Kei Kecil Island Indonesia against bacterial fish pathogen. Pharmacognosy Journal. 11: 1-4

Hameed A S S., K. H. Rahaman, A. Alagan, & K. Yoganandhan. 2003. Antibiotics resistance in bacteria isolated from hatchery-reared larvae and post larvae of *macrobrachium rosenbergii*. Aquaculture. 217: 39-48

Handoyo D & A. Rudiretna. 2001. Prinsip umum dan pelaksanaan polimerase chain Reaction (PCR). Unitas. 9: 17-29.

Harborne J B. 1984. Phytochemical methods: A guide to modern techniques of plant analysis second edition. New York: Chapman and Hall.

Hassan S W M, A. E. Nermeen., E. A. Abeer & A. A. Mohamed. 2017 Statistical optimization and valuable applications of bioactive compounds produced by marine *Pseudoalteromonas piscicida.* Journal of Applied Pharmaceutical Science.7: 084-093. doi: 10.7324/JAPS.2017.71012

Hatmanti A, L Puspita, J. Widada, & S. Wahyuono. 2018. Potency of actinomycetes from deepsea sediment of Makassar Strait for producing antimicrobial substances. Squalen Bull of Mar. and Fish. Postharvest and Biotech. 13: 45-56

Hayashida-Soiza G, A. Uchida, N. Mori, Y Kuwahara, & Y, Ishida. 2008. Purification and characterization of antibacterial substances produced by a marine bacterium *Pseudoalteromonas haloplanktis* strain. Journal of Appled Microbiology 105: 1672–1677

Heather J M, B. Chain. 2016. The sequence of sequencers: The history of sequencing DNA. Genomics. 107: 1–8.

Hickey M. E. & J. L. Lee. 2017. A comprehensive review of *Vibrio (Listonella) anguillarum*: ecology, pathology and prevention. Reviews in Aquaculture. 10: 1-26.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Higgs R E, A. Z James, D G. Jeffrey & D H Matthew. 2001. Rapid method to estimate the presence of secondary metabolites in microbial extracts. Applied and Environmental Microbiology. 67: 371-376

Hikmawati F, A Susilowati, & R Setyaningsih. 2019. Deteksi jumlah dan uji patogenitas Vibrio spp. pada kerang hijau (Perna viridis) dikawasan wisata Pantai Yogyakarta. Prosiding Seminar Nasional Masyarakat Biodiversitas Indonesia. 5: 334-339

Hussain S Z & K Maqbool. 2014, GC-MS: Principle, Technique and its application in Food Science. International Journal of Current Science. 131: 116-126.

Igbinosa E O. 2016. Detection and antimicrobial resistance of Vibrio isolates in aquaculture environments: Implications for public health. Microbial Drug Resistance. 22: 238–245. doi: 10.1089/mdr.2015.0169.

Ishimaru K, M Akagawa-Matsushita & K Muroga. 1995. *Vibrio penaeicida* sp. nov., a pathogen of kuruma prawns (*Penaeus japonicus*). International Journal of Systematic Evolutionary and Microbiology. 45: 134-138.

Ishimaru K, M Akagawa-Matsushita & K Muroga. 1996. *Vibrio ichthyoenteri* sp. nov., a pathogen of Jepangese flounder (*Paralichthys olivaceus*) larvae. International Journal of Systematic Evolutionary and Microbiology. 46: 155-159

Islam N, S A Parveen, N Nakazawa, A Marston & K Hostettmann. 2003. Bioautography with the fungus *Valsa ceratosperma* in the search for antimycotic agents. Pharmaceutical Biology. 41: 637-640

Isnansetyo A & Y Kamei. 2003. MC21-A, a bactericidal antibiotic produced by a new marine bacterium, *Pseudoalteromonas phenolica* sp. nov. O-BC30^T, against methicillin resistant *Staphylococcus aureus*. Antimicrob. Agents Chemotheraphy. 47: 480-488

Isnansetyo A, I. Istiqomah, Muhtadi, S Shofihar, K H Rudi, Triyanto & J. Widada. 2009. A potential bacterial biocontrol agent, strain S2V2 against pathogenic marine Vibrio in aquaculture. World Journal of Microbiology and Biotechnology. 25: 1103–1113

Isnansetyo A, Muhtadi, I. Istiqomah, H N M Kamiso & Triyanto. 2011. Selective medium for in vitro activity evaluation of bacterial biocontrol against pathogenic *vibrio*. Hayati journal of biosciences. 18: 129-134

Istiqomah I, Sukardi, Murwantoko, & A. Isnansetyo. 2020. Vibriosis management in Indonesian marine fish farming. E3S Web of Conferences. 147. 01001.

Ivanova E P, T Sawabe, Y V Alexeeva, A M Lysenko, N M Gorshkova, K Hayashi, N V Zukova, R Christen, & V V Mikhailov. 2002. *Pseudoalteromonas issachenkonii* sp. nov., a bacterium that degrades the thallus of the brown alga *Fucus evanescens*. International Journal of Systematic Evolutionary and Microbiology. 52: 229–234

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Ivanova E P, M G Nataliya, N. V. Zhukova, M L Anatolii, Elena a Zelepuga, G P Nina, V M Valery, V Nicolau, & C. Richard. 2004. Characterization of *Pseudoalteromonas Distincta*-like seawater isolates and description of *Pseudoalteromonas aliena* sp. nov. International Journal of Systematic and Evolutionary Microbiology 54: 1431– 37.

Jawetz, M. 2010. Mikrobiologi Kedokteran. Buku Kedokteran EGC. Jakarta.

Jensen S, O B Samuelsen, K Andersen, L Torkildsen, C Lambert, Choquet, G Paillard C & Ø Bergh. 2003. Characterization of strains of *Vibrio splendidus* and *V. tapetis* isolated from corkwing wrasse *Symphodus melops* suffering vibriosis. Disease of Aquatic Organism. 53: 25-31.

Ji R, W Zou, S Hu & Q Yan. 2008. Vaccination in three different ways against vibriosis of *Seriola dumerili* caused by *Vibrio hollisae*. Chin. Journal of Oceanology and Limnology. 26: 233-237.

Jimenez C. 2018. Marine natural products in medicinal chemistry. ACS Medicinal Chemistry Letters. 9: 959–961. Doi: 10.1021/acsmedchemlett.8b00368

Jin, S, G Wang, Q Zhao, T Zheng, & Y Chen. 2004. Epidemiology of vibriosis in large yellow croaker *Pseudosciaena crocea* (Richardson) in marine cage culture. Fisheries Science. 24: 17–19.

Judoamidjojo M. 1990. Teknologi fermentasi. IPB-Press. Bogor.

Jun L & N Y S Woo. 2003. Pathogenicity of vibrios in fish: An overview. Journal of Ocean Univ. China. 2: 117-128

Kallies R, K Bärbel, S Matthias, G Nawras, Z Jakob, H Jörg, H Hauke, Y W Lukas, & C Antonis. 2019. Complete genome sequence of *Pseudoalteromonas* virus vB_PspP-H6/1 that infects *Pseudoalteromonas sp*. strain H6. Marine genomic. https://doi.org/10.1016/j.margen.2019.03.002

Kamiso H N, A Isnansetyo, Triyanto, I Istiqomah, & M Murdjani. 2005. Isolation, identification and characterization of pathogenic *Vibrio* spp. causative agents of vibriosis in grouper at brackish water aquaculture development center, Situbondo. Journal of Fisheries Science. 7: 80-94

Kan, S. B. J., R. D. Lewis, K Chen, & F H Arnold. 2016. Directed evolution of cytochrome *c* for carbon–silicon bond formation: Bringing silicon to life. Science. 354: 1048–1051.

Kan, S B J., X. Huang, Y Gumulya, K Chen & F H Arnold. 2017. Genetically programmed chiral organoborane synthesis. Letter Nature. doi:10.1038/nature24996

Kang C H, Y Shin, S Jang, Y Jung & J S So. 2016. Antimicrobial susceptibility of *Vibrio alginolyticus* isolated from oyster in Korea. Environmental and Science Pollution Research. 23: 21106-21112.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Kang C H, Y Shin, S Jang, H Yu, S Kim, S An, K Park, & J S So. 2017. Characterization of *Vibrio parahaemolyticus* isolated from oysters in Korea: Resistance to various antibiotics and prevalence of virulence genes. Marine Pollution Bulletin. 118: 261–266

Kasanah N & M Hamann. 2004. Development of antibiotics and the future on marine microorganism to stem the tide of antibiotics resistance. Current Opinion and Investigation Drugs. 5: 827–837

Kim S R, L Nonaka, M J Oh, C Lavila-Pitogo, & S Suzuki. 2003. Distribution of oxytetracycline resistant determinat *tet* 34 among marine bacterial isolate of *Vibrio* spesies. Microbes and Environment. 18: 74-81.

Kim H J, J W, Jun, S S Giri, C Chi, S Yun, S G Kim, & W T Oh. 2019. Application of the bacteriophage pVco-14 to prevent *Vibrio coralliilyticus* infection in Pacific oyster (*Crassostrea gigas*) larvae. Journal of Invertebrate Pathology. 167: 107244.

KKP. 2021. Data produksi perikanan. Diakses pada https://statistik.kkp.go.id/home.php?m=prod_ikan_prov&i=2, tanggal 12 Desember 2021.

Klesius P H & J W Pridgeon. 2011. Development and efficacy of novobiocin and rifampicin-resistant *Aeromonas hydrophila* as novel vaccines in channel catfish and Nile tilapia. Vaccine. 29: 7896–7904. doi: 10.1016/j.vaccine.2011.08.082

Knerr P J & W A van der Donk. 2012. *Disc*overy, biosynthesis, and engineering of lantipeptides. Annual Reviews of Biochemistry. 81: 479-505

Kolmogorov M, J Yuan, Y Lin, & P Pevzner. 2019. Assembly of Long Error-Prone Reads Using Repeat Graphs. Natural Biotechnology. 37: 540-546. https://doi.org/10.1038/s41587-019-0072-8

Kreig, N K & H S Peter. 1984. Bergeys Manual of Determinate Bacteriology. 9th ed. The Williams and Wilkins Company. Baltimore

Krupesha–Sharma S R, G Rathore, D K Verma, N Sadhu, & K K Philipose. 2012. *Vibrio alginolyticus* infection in Asian seabass (*Lates calcarifer*, Bloch) reared in open sea floating cages in India. Aquaculture Research. 44: 86–92.

Kumar S, G Stecher & K Tamura. 2016. MEGA7: Molecular evolutionary genetic analysis version 7 for bigger datasets. Molecular biology and evolution. 33: 1870-1874

Kumar V, A Vivek, S Saurab, K Jitendra, K Anil, Patel, & R S Reeta. 2021. Recent developments on solid-state fermentation for production of microbial secondary metabolites: Challenges and solutions. Bioresource Technology. 323: 124566. https://doi.org/10.1016/j.biortech.2020.124566

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Kusmarwati A, I Hermana, Y Yusma & W Singgih. 2016. Keberadaan *Vibrio parahaemolyticus* patogenik pada udang tambak yang berasal dari pantai utara jawa. Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan. 11: 41-54

Krawczyk B & J Kur. 2018. Molecular identification and genotyping of staphylococci: genus, species, strains, clones, lineages, and interspecies exchanges. Book Chapter. Pet-To-Man Travelling Staphylococci. Pages 199-223. https://doi.org/10.1016/B978-0-12-813547-1.00016-9

Lattasch H & R H Thomson. 1983. A revised structure for cycloprodigiosin. Tetrahedron Letters. 24: 2701–2704. https://doi.org/10.1016/S0040-4039(00)87981-2

Labella A, M Vida, M C Alonso, C Infante, S Cardenas, S Lopez-Romalde, M Manchado & J J Borrego. 2006. First isolation of *photobacterium damselae* ssp. *damselae* from cultured red banded seabream, *Pagrus auriga* Valenciennes, in Spain. Journal of Fish Disease. 29: 175-179.

Lagana P, G Caruso, E Minutoli, R Zaccone & S Delia. 2011. Susceptibility to antibiotics of *Vibrio* spp. and *photobacterium damsela* spp. *Piscicida* starins isolated from Italian aquaculture farms. New Microbiologica. 34: 53-63

Lageiro M M, M J Moura, A Reis, & M J C Ferreira. 2007. Microbial proteases application in leather industry. Journal of Biotechnology. 131: 239–240

Lander, E.S., L. M. Linton, & B. Birren, et al., 2001.Initial sequencing and analysis of the human genome. Nature. 409: 860–921.

Lang G, N A Mahyudin, M I Mitova, L Sun, S Van der san, J W Blunt, Cole A L J, G. Ellis, H Laatsch & M H G Munro. 2008. Evolving trends in the dereplication of natural product extract: New Methodology for rapid small-scale investigation of natural product extract. Jornal of Natural Product. 71:1595-1599

Lasa A, R Avendaño-Herrera, J M Estrada & J L Romalde. 2015. Isolation and identification of *Vibrio toranzoniae* associated with diseased red conger eel (*Genypterus chilensis*) farmed in Chile. Veterinary Microbiology. 179: 327-331.

Lattasch H & R H Thomson. 1983. A revised structure for cycloprodigiosin. Tetrahedron Letters. 24: 2701–2704. https://doi.org/10.1016/S0040-4039(00)87981-2

Le T S, T H Nguyen, H P Vo, V C Doan, H L Nguyen, M T Tran, T T Tran, P C Southgate, & D I Kurtböke. 2018. Protective effects of bacteriophages against *Aeromonas hydrophila* causing motile aeromonas septicemia (MAS) in striped catfish. Antibiotics. *7*: 16

Le T S, C S Paul, O Wayne, V V Sang, & D K Ipek. 2020. Application of bacteriophages to control *Vibrio alginolyticus* contamination in oyster (*Saccostrea glomerata*) larvae. Antibiotics. 9: 415; doi: 10.3390/antibiotics9070415

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Leaño E M, C R Lavilla-Pitogo & M G Paner. 1998. Bacterial flora in the hepatopancreas of pond-reared *Penaeus monodon* juveniles with luminous vibriosis. Aquaculture. 164: 367-374.

Lee T S & I Kurtböke. 2019. Bacteriophages as biocontrol agents in aquaculture. Microbiology Australia. Page. 37–41. 10.1071/MA19003

Lee T V, R D Johnson, V L Arcus & J S Lott. 2015. Prediction of the substrate for nonribosomal peptide synthetase (NRPS) adenylation domains by virtual screening. Proteins: Structure, Function, and Bioinformatics. 83: 2052-2066.

Li K, C Jian, S Ziqi, Y Bin, L Yonghong, Z Xuefeng, H Jingxia, & T Huaming. 2020. Glycosylated natural products from marine microbes. Frontiers Chemistry. 7: 879. doi: 10.3389/fchem.2019.0087

Liang B, F Jiang, S Zhang, X Yue, H Wang, & B Liu. 2017. Genetic variation in Vibrio resistance in the clam *Meretrix petechialis* under the challenge of *Vibrio parahaemolyticus*. Aquaculture 468: 458-463.

Lindquist N & W Fenical. 1991. New Tambjamine Class Alkaloids from the Marine Ascidian Atapozoa Sp. and its Nudibranch Predators. Origin of the Tambjamines in Atapozoa. 504–6

Liu C H, W Cheng, J P Hsu & J C Chen. 2004. *Vibrio alginolyticus* infection in the white shrimp *Litopenaeus vannamei* confirmed by polymerase chain reaction and 16S rDNA sequencing. Disease of Aquatic Organisms. 61: 169-174.

Liu Q, H Yuye, W Dongxu, W Qi, L Xinxin, L Yan, S Xue, W Min, J Yong, M Zhexuan, S Hongbing, & M Andrew. 2018. Complete genomic sequence of bacteriophage J2-1: A novel *Pseudoalteromonas phenolica* phage isolated from the coastal water of Qingdao, China. Marine Genomics. 39: 15-18. https://doi.org/10.1016/j.margen.2017.12.001

Long R A, Q Asfia, D J Faulkner, & A Farooq. 2003. 2-n-pentyl-4-quinolinol produced by a marine *Alteromonas* sp. and its potential ecological and biogeochemical roles. Applied Environmental and Microbiology. 69: 568–576. doi: 10.1128/AEM.69.1.568–576.2003

Longeon A, J Peduzzi, M Barthélemy, S Corre, J Nicolas & M Guyot. 2004. Purification and partial identification of novel antimicrobial protein from marine bacterium *Pseudoalteromonas* spesies strain X153. Marine Biotechnology. 6: 633-641.

McCarthy S A, R M Johnson, D Kakimoto, & T Sakata. 1985. Effects of various agents on the pigment (violacein) and antibiotic production of *Alteromonas luteoviolacea*. Bull. Japan Society of Science and. Fisheries. 51: 115–1121. https://doi.org/10.2331/suisan.51.1115

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Madigan T M, J M Martinko, K.S Bender, D H Buckley & D A Stahl. 2015. Brock Biology Microorganism, 14th Ed. Pearson Education. United States of America.

Maeda M., K Nogami, M Kanematsu, & K Hirayama. 1997. The concept of biological control methods in aquaculture. Hydrobiologia. 358: 285–290

Maitland P D & D P Maitland. 2010. Chromatography: Are we getting it right. Journal of Biological Education. 37: 6-8

Marston A. 2010. Thin layer Chromatography with biological detection in phytochemistry. Journal of chromatography. 1218: 83-89.

Martines-Luiz S, J. Ballesteros, & M. Guiterrez. 2011. Antibacterial constituent from the octocoral associated bacterium *Pseudoalteromonas sp.* Revlationamer. 39: 73-85

Menezes F G R, T T R Marina, C T Fatima, R Rosa, A C Renata, V S Oscarina, H S F Regine & H Ernesto. 2017. Pathogenic *Vibrio* spesies isolated from estuarine environments (Ceará, Brazil) - antimicrobial resistance and virulence potential profiles. Annals Brazil Academia Science. 89: 1175-1188. http://dx.doi.org/10.1590/0001-3765201720160191.

Miller C S, K M Handley, K C Wrighton, K R Frischkorn, B C Thomas, & J F Banfield. 2013. Short-read assembly of full-length 16S amplicons reveals bacterial diversity in subsurface sediments. PloS one 8: 1-11. doi: 10.1371/journal.pone.0056018.

Mohamad N, N A A Mohammad, S M Ina, Z S Mohammad, S N Nurrul, A Nurhidayu, M Sayaka, & S Tomoo. 2019. Vibriosis in cultured marine fishes: a review. Aquaculture. 512: 1–17.

Montaudo G. & R P Lattimer. 2001. Mass Spectrometry of Polymers, CRC Press, Boca Raton, FL.

Moorthie S., C. J. Mattocks, & C F Wright. 2011. Review of massively parallel DNA sequencing technologies. The HUGO Journal. 5: 1–12. http://doi.org/10.1007/s11568- 011-9156-3.

Morgensztern D, D Siddhartha, M Tetsuya, M Christopher, & G Ramaswamy. 2018. Mutational events in lung cancer: present and developing technologies. IASLC Thoracic Oncology (Second Edition). Pages 95-103. https://doi.org/10.1016/B978-0-323-52357-8.00011-1

Morisaka H, K Yoshimi, Y Okuzaki, P Gee, Y Kunihiro, E Sonpho, H Xu, N Sasakawa, Y Naito, S Nakada, T Yamamoto, S Sano, A Hotta, J Takeda, & T Mashimo. 2019. CRISPR-Cas3 induces broad and unidirectional genome editing in human cells. Nature Communication. 10: 5302. https://doi.org/10.1038/s41467-019-13226-x.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Nakayama T, E Ito, N Nomura & M Matsumura. 2006. Comparison of *Vibrio harveyi* strains isolated from shrimp farms and from culture collection in terms of toxicity and antibiotics resistance. FEMS Microbiology Letters. 258: 194-199

Nalisha I, M Muskhazli & T Farizan. 2006. Production of Bioactive Compounds by *Bacillus subtilis* against *Sclerotium rolfsii*. Malaysian journal of microbiology. 2: 19-23.

Nam Y.-D, H -W Chang, J R Park, H-Y Kwon, Z.-X Quan, Y-H Park, J-S Lee, Yoon J-H & J-W Bae. 2007. *Pseudoalteromonas marina* sp. nov., a marine bacterium isolated from tidal flats of the Yellow Sea, and reclassification of *Pseudoalteromonas sagamiensis* as Algicola sagamiensis comb. nov. International Journal of Systematic Evolutionary and Microbiology. 57: 12–18.

NCCLS-CLSI. 2010. Performance standards for antimicrobial susceptibility testing; 20th informational supplement. CLSI Document M100-S20. CLSI, Wayne, PA: Clinical and Laboratory Standard Institute.

Nguyen H N K, T T H Van & P J Coloe, 2016. Antibiotic resistance associated with aquaculture in Vietnam. Microbiology of Australia. 37: 108–111

Nigam P S. 2009. Production of bioactive secondary metabolites. in: Biotechnology for agro-industrial residues utilization. Springer pp. 129-145

Nonaka L, K Ikeno & S. Suzuki. 2007. Distribution of oxytetracycline resistance genes, tet (M) in Gram positive and Gram Negatif bacteria isolated from sediment and seawater at coastal aquaculture side in Jepang. Microbes and Environment. 22: 335-364.

Offret C, F Desriac, L C Patrick, M Jerome, J Camille & F Yannick. 2016. Spotlight on Antimicrobial Metabolites from the Marine Bacteria *Pseudoalteromonas*: Chemodiversity and Ecological Significance. Marine Drugs. 14: 129-155. doi: 10.3390/md14070129.

Ortega M A & W A van der Donk. 2016. New insights into the biosynthetic logic of ribosomally synthesized and post-translationally modified peptide natural products. Cell Chemistry and Biology. 23: 31-44. 10.1016/j.chembiol.2015.11.012

Otsuka H. 2006. Purification by Solvent Extraction Using Partition Coefficient, In S. D. Sarker, Z. Latif, & A. I. Gray. Methods in Biotechnology Vol 20, Natural Products Isolation. Second Edition. Totowa. New Jersey. Humana Press Inc: 269

Pabinger S, A Dander, M Fischer, R Snajder, M Sperk, M Efremova, B Krabichler, M R Speicher, J Zschocke & Z Trajanoski. 2014. A surveyof tools for variant analysis of nextgeneration genome sequencing data. Brief. Bioinformatic. 15: 256–278

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Parks D H, M Imelfort, C T Skennerton, P Hugenholtz, & G W Tyson, 2014. Assessing the quality of microbial genomes recovered from isolates, single cells, and metagenomes. Genome Research. 25: 1043-1055. https://doi.org/10.1101/gr.186072.114.

Parrilli E. *et al.* 2019. The art of adapting to extreme environments : The model system *Pseudoalteromonas*'. Physics of Life Reviews. doi: 10.1016/j.plrev.2019.04.003.

Paulsen S S, M L Strube, P K Bech, L Gram, & E C Sonnenschein. 2019. Marine chitinolytic *Pseudoalteromonas* represents an untapped reservoir of bioactive potential. MSystems 4: e00060-19.10.1128/mSystems.00060-19.

Paulsen S K, I Thomas, K Markus, B Yannick, L S Mikael, S C Eva, O L Thomas, & G Lone. 2020. Production of the antimicrobial compound tetrabromopyrrole and the Pseudomonas quinolone system precursor, 2-heptyl-4-quinolone, by a novel marine spesies *Pseudoalteromonas galatheae* sp. nov. Scientific Reports. 10: 21630. https://doi.org/10.1038/s41598-020-78439-3

Pedersen K, H F Skall, M A Lassen-Nielsen, L Bjerrum & N J Olesen. 2009. *Photobacterium damselae* subsp. *damselae*, an emerging pathogen in Danish rainbow trout, *Oncorhynchus mykiss* (Walbaum), mariculture. Journal of Fish Disease. 32: 465-472

Petersen L, Y K Mathias & P J Schupp. 2020. Secondary Metabolite of marine microbes: from natural product chemistry to chemical ecology. Youmares. 9: 159-180

Pine S H, J B Hendrickson, D J Cram, & G S Hammond. 1988. Kimia Organik. Penerbit ITB. Bandung.

Prado S, J Dubert, J L Romalde, A. E Toranzo & J. L Barja. 2014. *Vibrio ostreicida* sp. nov., a new pathogen of bivalve larvae. International Journal of Systematic Evolutionary and Microbiology. 64: 1641-1646.

Pratiwi, S T. 2008. Mikrobiologi Farmasi. Erlangga, Jakarta

Qin Q, L Yang, Z Yan-Jiao, Z Zhe-Min, Z Wei-Xin, C Xiu-Lan, Z Xi-Ying, Z Bai-Cheng, Lei W & Z Yu-Zhong. 2011. Comparative genomics reveals a deep-sea sediment-adapted life style of *Pseudoalteromonas* sp. SM9913. The ISME Journal. 5: 274-284.

Raharja N I, Widanarni, & T W Aris. 2019. Marine sponge-associated bacteria as biocontrol agents of vibriosis on whiteleg shrimp caused by *Vibrio parahaemolyticus.* Biodiversitas. 20: 3164-3169. doi: 10.13057/biodiv/d201108

Ramachandran G, R Govindan, M Muthuchamy & M Natesan. 2018. Isolation and identification of antibacterial compound from marine endophytic Actinomycetes against multi drug resistant bacteria. Annals of Microbiology and Immunology. 1: 1003-1008.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Ransangan J. M. Tamrin, & H A Ahmed. 2012. Characterization and experimental infection of *Vibrio harveyi* isolated from diseased Asian seabass (*Lates calcarifer*). Malaysia Journal of Microbiology. 8: 104–115. doi:10.21161/mjm.03512.

Raszl S M, B A Froelich, C R Vieira, D A Blackwood, & R T Noble. 2016. *Vibrio parahaemolyticus* and *Vibrio vulnificus* in South America: water, seafood, and human infections. Journal of Applied Microbiology. 121: 1201–1222.

Rattanachuay P, D Kantachote, M Tantirungkij, & T Nitoda, *et al.* 2010. Inhibition of shrimp pathogenic vibrios by extracellular compounds from a proteolytic bacterium *Pseudomonas* sp. W3. Electron. Journal of Biotechnology. 13: 1–11.

Raven P H & G B Johnson. 2002. Biology. 6th ed. McGraw-Hill Company, Inc. New York. 1239p

Reid R G & S D Sarker. 2006. Isolation of Natural Products by Low-Pressure Column Chromatography, In S. D. Sarker, Z. Latif, & A. I. Gray, Methods in Biotechnology Vol 20. Natural Products Isolation. Second Edition. Totowa. New Jersey: Humana Press Inc: 117

Richards G P, W Michael, S David & P F Johna. 2017. Mechanisms for *Pseudoalteromonas piscicida*-Induced Killing of Vibrios and Other Bacterial Pathogens. Applied in Environmental and Microbiology. 83:e00175- 17. https://doi.org/10.1128/AEM.00175-17

Rizzatti G, L R Lopetuso, G Gibiino, C Binda & A Gasbarrini. 2017. Proteobacteria: A common factor in human diseases. BioMed Research International. 1-8.

Robinson T. 2000. Solid state fermentation: a promising microbial technology for secondary metabolite production. Applied Microbiology and Bitechnology. 55: 284-289

Romanenko, A Lyudmila, V Z Natalia, M L Anatoly, V M Valery, & S Erko. 2003. Assignment of *Alteromonas marinoglutinosa* NCIMB 1770 to *Pseudoalteromonas Mariniglutinosa* sp. nov., nom. rev., comb. nov. International Journal of Systematic and Evolutionary Microbiology. 53: 1105–9.

Rusmana I, Isramilda, & A Alina. 2021. Characteristics of anti-*Vibrio harveyi* compounds produced by *Bacillus* spp. isolated from shrimp ponds. Biodiversitas 22: 4872-4879.

Rong R, H Lin, J Wang, M N Khan, & M Li. 2014. Reductions of *Vibrio parahaemolyticus* in oysters after bacteriophage application during depuration. Aquaculture. 418: 171–176

Rosmadi A & T H T A Hamid. 2020. Pigmented *Pseudoalteromonas* sp. isolated from marine sponge with anti-microbial activities against selected human pathogens.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

European Journal of Biology and Biotechnology. 1: 1-5. Doi: 10.24018/ejbio.2020.1.5.87

Saitou N & M Nei. 1987. The neighbor-joining method: a new method for reconstructing phylogenetic trees. Molecular Biology and Evolution. 4: 406–425

Sakai-Kawada F E, K A Hagiwara, & J D. Awaya 2019. Biosynthesis and bioactivity of prodiginine analogs in marine bacteria, *Pseudoalteromonas*: A mini review. Frontiers in Microbiology. 10: 1715− 1715.

Sakata T, K Sakaguchi, & D Kakimoto. 1982. Antiobiotic production by marine pigmented bacteria. Antibacterial effect of *Alteromonas luteoviolaceus*. Memo of Fact Fisheries. Kagoshima Univ. 31: 243-250

Sakata T, K Sakaguchi, & D Kakimoto. 1986. Antiobiotic production by marine pigmented bacteria. II. Purification and characterization of antibiotic substances of *Alteromonas luteoviolacea.* Memo of Fact Fisheries. Kagoshima Univ. 35:29-37.

Saraswathy N & P Ramalingam. 2011. Concepts and techniques in genomics and proteomics. Engineering. DOI:10.1533/9781908818058.

Sarjito, M Apriliani, D Afriani & A C H Haditomo. 2015. Agensia penyebab vibriosis pada udang vaname (*Litopenaeus vannamei)* yang dibudidayakan secara intensif di Kendal. Jurnal Kelautan Tropis. 18: 189-196

Sarker S D, Z Latif & A I Gray. 2006. Natural product isolation an overview, In S. D. Sarker, Z. Latif, & A. I. Gray, Methods in Biotechnology Vol 20, Natural Products Isolation, Second Edition. Totowa. New Jersey: Humana Press Inc: 1

Schinke C, M Thamires, C N Q Sonia, S M Itamar & G R R Felix. 2017. Antibacterial Compounds from Marine Bacteria, 2010-2015. Journals of natural product. 80:1215-1228

Schuster, S.C. 2008. Next-generation sequencing transforms today's biology. Nature Methods. 5: 16–18.

Sekurova O N, O Schneider, & S B Zotchev. 2019. Novel bioactive natural products from bacteria via bioprospecting, genome mining and metabolic engineering. Microbial Biotechnology. 12: 828-844. 10.1111/1751-7915.13398

Setiawati A. 2015. Peningkatan Resistensi Kultur Bakteri Staphylococcus aureus terhadap Amoxicillin Menggunakan Metode Adaptif Gradual. Jurnal farmasi Indonesia. 7: 190-194

Setiyono E, A S A Marcelinus, I Renny, N U P Monika, S Yuzo & H P B Tatas. 2020. An Indonesian Marine Bacterium, *Pseudoalteromonas rubra*, Produces Antimicrobial Prodiginine Pigments. ACS Omega. 5: 4626-4635

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Seyedsayamdost, M. R. 2019. Toward a global picture of bacterial secondary metabolism. Journal of Industrial Microbiology Biotechnology. 46: 301-311. doi: 10.1007/s10295-019-02136-y

Shahverdi A R, F Abdolpour, H R Monsef-Esfahani & H Farsam. 2007. A KLT bioautographic assay for the detection of nitrofurantoin resistance reversal compound. Journal of Chromatography. 850: 528–530.

Shan K, W Chunlei, L Wenlin & L Kai. 2018. Genome sequence and transcriptomic profiles of a marine bacterium, *Pseudoalteromonas agarivorans* Hao 2018. Scientific Data. DOI:10.1038/s41597-019-0012-y

Shivasubramanian K, S Ravichandran, & M Vijayapriya. 2011. Antagonistic activity of marine bacteria *Pseudoalteromonas tunicata* against microbial pathogens. African Journal of Microbiology Research. 5: 562-567

Silva G L, I Lee, & A D Kinghorn. 1998. Special problems with the extraction of plants. In: Cannell, R.J.P. (ed) Methods in biotechnology, 4 edition: natural products isolation. Humana, Totowa, NJ.

Silva-Rubio A, C Acevedo, B Magariños, B Jaureguiberry, A E Toranzo & R Avendaño-Herrera. 2008. Antigenic and molecular characterization of *Vibrio ordalii* strains isolated from Atlantic salmon *Salmo salar* in Chile. Disease Aquatic Organisms. 79: 27-35.

Silverstein R M, F X Webster & D J Kiemle. 1981. Spectrometric Identification of Organic Compounds. United States of America: John Wiley & Sons.

Simao F A, R M Waterhouse, P Ioannidis, E V Krivensteva, & E M Zdobnov. 2015. BUSCO: assessing genome assembly and annotation completeness with single-copy orthologs. Bioinformatics 31: 3210-3212. https://doi.org/10.1093/bioinformatics/btv351.

Slatko, B E, L. M. Albright, S. Tabor, & J. Ju. 2001. DNA sequencing by the dideoxy method. Current Protocols in Molecular Biology. 4–7.

Sneddon J. S Masuram & J C Richert. 2007. Gas Chromatography-Mass Spectrometry-Basic Principles, Instrumentation and Selected Applications for Detection of Organic Compounds. Analytical Letters. 40: 1003-1012

Sobolevskaya M P, O F Smetanina, M Speitling, L S Shevchenko, P S Dmitrenok, H Laatsch, T A Kuznetsova, E P Ivanova, & G B Elyakov. 2005. Controlling production of brominated cyclic depsipeptides by *Pseudoalteromonas maricaloris* KMM 636T. Letter Applied Microbiology. 40: 243–248.

Speitling M, O F Smetanina, T A Kuznetsova, & H Laatsch. 2007. Bromoalterochromides A and A', unprecedented chromopeptides from a marine *Pseudoalteromonas maricaloris* strain KMM 636T. Journal of Antibiotic. 60: 36–42.

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Srinivasan R, A Kannappan, C Shi, & X Lin. 2021. Marine bacterial secondary metabolites: a treasure house for structurally unique and effective antimicrobial compounds. Marine Drugs. 19: 530. https://doi.org/10.3390/md19100530

Stackebrandt, E & B. M. Goebel. 1994. Taxonomic Note: A Place for DNA-DNA Reassociation and 16s rRNA Sequence Analysis in the Present Species Definition in Bacteriology. International Journal of Systematic Bacteriology. 44: 846-849

Strieker M, Tanovic A, & M A Marahiel.2010. Nonribosomal peptide synthetases: structures and dynamics. Current Opinion of Structural Biology. 20: 234–40.

Sulieman F, A Ahmad, G Usup, & L C Kuang. 2018. Diketopiperazine from marine bacterium *Pseudoalteromonas ruthenica* KLPp3. Journal of Biological Research. 91: 7197

Sunaryanto, R. 2011. Isolasi, Purifikasi, Identifikasi dan Oprtimasi Medium fermentasi Antibiotik yang Dihasilkan oleh Aktinomisetes Laut. Disertasi. Sekolah pascasarjana. IPB. Bogor

Supardy N A, I Darah, R M N Sharifah, & N M N Wan. 2019. Bioactive compounds of *Pseudoalteromonas* sp. IBRL pd4.8 inhibit growth of fouling bacteria and attenuate biofilms of *Vibrio alginolyticus* FB3. Polandia Journal of Microbiology. 68: 21–33. doi: 10.21307/pjm-2019-003

Tamura K, J Dudley, M Nei & S Kumar. 2007. MEGA4: Molecular Evolutionary Genetics Analysis (MEGA) software version 4.0. Molecular Biology and Evolution. 24: 1596

Tanizawa Y, T Fujisawa, E Kaminuma, Y Nakamura, & M Arita. 2016. DFAST and DAGA: web-based integrated genome annotation tools and resources. Bioscience Microbiota, Food and Health 35: 173-184. https://doi.org/10.12938/bmfh.16-003.

Tenriesa, L. & F. Hamis. 2019. Buku panduan kerja keterampilan teknik pembuatan preparat apus, pewarnaan Gram (gram staining) dan pengamatan hasil pewarnaan Gram. Fakultas kedokteran. Universitas Hasanuddin. Makassar.

Thatoi H, B C B Behera, R R Mishra, & S K Dutta. 2013. Biodiversity and biotechnological potential of microorganisms from mangrove ecosystems: a review. Annals Microbiology. 63: 1–19. DOI 10.1007/s13213-012-0442-7.

Thøgersen, S. Mariane, W Marina, Delpin, M Jette, K Mogens, M Maria, B Boyke, S Cathrin, O Jörg, F N Kristian & G Lone. 2016. Production of the bioactive compounds violacein and indolmycin is conditional in a maea mutant of *Pseudoalteromonas Luteoviolacea* S4054 Lacking the Malic Enzyme. Frontiers in Microbiology 7: 1–11

Thomas T, F E Flavia, S David, M Anne, B Catherine, & P Anahit*, et al*. 2008. Analysis of the *Pseudoalteromonas tunicata* Genome Reveals Properties of a Surface-

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Associated Life Style in the Marine Environment. PLoS one 3, e3252. https://doi.org/10.1371/journal.pone.0003252

Thiru, P & R.J. Rundell. 2008. Creating Phylogenetic Trees with. Philos. Trans. R. Soc. Lond. B. Biology and Science. 363: 3401–3412.

Thirumurugan, D., A. Cholarajan, S. S. S. Raja & R Vijayakumar. 2018. An Introductory Chapter: Secondary Metabolites. http://dx.doi.org/10.5772/intechopen.79766

Tran L, L Nunan, R M Redman, L L Mohney, C R Pantoja, K Fitzsimmons, & D V. Lightner 2013. Determination of the infectious nature of the agent of acute hepatopancreatic necrosis syndrome affecting penaeid shrimp. Disease Aquatic Organisms. 105: 45–55

Ulfah M, N. Kasanah, & W Nastiti. 2021. Antivibriosis and cytotoxicity of *Actinobacteria* associated with red seaweed *Gelidiella acerosa*. Aquaculture Research. 00: 1–9. https://doi.org/10.1111/are.15495

Van djik E L, H Auger, Y Jaszczyszyn & C Thermes. 2014. Ten years of next-generation sequencing technology. Trends Genetics. 30: 418–426. doi: 10.1016/j.tig.2014.07.001

Van heel A J, D Anne, S Chunxu, H V Jakob, K, Jan & P K Oscar. 2018. BAGEL4: a user-friendly web server to thoroughly mine RiPPs and bacteriocins. Nucleic Acid Research. doi: 10.1093/nar/gky383

Vynne N G, M Mansson, K F Nielsen, & L Gram. 2011. Bioactivity, chemical profiling, and 16S rRNA-based phylogeny of *Pseudoalteromonas* strains collected on a global research cruise. Marine Biotechnology. 13: 1062–1073

Wan X, H Shen, L Wang & Y Cheng. 2011. Isolation and characterization of *Vibrio metschnikovii* causing infection in farmed *Portunus trituberculatus* in China. Aquaculture International. 19: 351-359

Wang R X, J Y Wang, Y C Sun, B L Yang & A L Wang. 2015. Antibiotic resistance monitoring in *Vibrio* spp. isolated from rearing environment and intestines of abalone *Haliotis diversicolor*. Marine Pollution Bulletin. 101: 701-706

Wang H, W Chundi, T Yang, S Bochao, H Jie & S Xiaoling. 2018. *Pseudoalteromonas* probiotics as potential biocontrol agents improve the survival of Penaeus vannamei challenged with acute hepatopancreatic necrosis disease (AHPND)-causing *Vibrio parahaemolyticus.* Aquaculture. 494: 30-36.

Wang J, P Li-Hua, G Xing-Pan, Y Asami, O Kiyoshi, L Yi-Feng, Y Jin-Long, & L Xiao. 2019. Complete genome of *Pseudoalteromonas atlantica* ECSMB14104, a Gammaproteobacterium inducing mussel settlement. Marine Genomics. 46: 54-57. https://doi.org/10.1016/j.margen.2018.11.005.

Watanakunakorna, C & C Glotzbecker. 1976. Synergism with aminoglycqsides o f penicillin, ampicillin and vancomycin against nqn-enterococcal group-d

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

streptococci and viridans Streptococci. Journal Medical Microbiology. 10: 133-138.

WHO. 2000. WHO Global principles for the containment of antimicrobial resistance in animals intended for food. Report of a WHO Consultation with the participation of the Food and Agriculture Organization of the United Nations and the Office International des Epizooties. Geneva, Switzerland. http://whqlibdoc.who.int/hq/2000/WHO_CDS_CSR_APH_2000.4.pdf

Wick R R, L M Judd, & K E Holt. 2019. Performance of neural network basecalling tools for Oxford Nanopore sequencing. Genome Biology. 20:129.

Willey J M, L M Sheerwood &. C J Woolverton. 2008. Prescott, Harley, and Klein's Microbiology, 7th Ed. Mc-Graw Hill Companies. New York. United States of America.

Williamson N R, P C Fineran, F J Leeper, & G P C Salmond. 2006. The biosynthesis and regulation of bacterial prodiginines. Natural Review of Microbiology. 4: 887−899

Wilson, B R, A R Bogdan, M Miyazawa, K Hashimoto, & Y Tsuji. 2016. Siderophore in iron metabolism: from mechanism to therapy potensial. Cell Pres. 22: 1077-1099. http://dx.doi.org/10.1016/j.molmed.2016.10.005

Woese, C. R & G. E. Fox. 1977. Phylogenetic structure of the prokaryotic domain: The primary kingdoms. Prociding National Academia Science (PNAS). 74: 5088-5090.

Woese, C. R. 1987. Bacterial Evolution. Microbiological Reviews. 51:521-571.

Wu J, W Mengmeng, C Ting, & J Rui. 2016. Whole genome sequencing and its applications in medical genetics. Quantitative Biology. 4: 115–128. Doi: 10.1007/s40484-016-0067-0

Xu Y, C Wang, G Zhang, J Tian, Y Liu, X Shen, & J Feng. 2017. ISCR2 is associated with the dissemination of multiple resistance genes among *Vibrio* spp. and *Pseudoalteromonas* spp. isolated from farmed fish. Archive in Microbiology. 199: 891–896.

Xu, X., G Yuan, Y Wang, Y Qu, M Zhou. 2018. Synergistic combination of two antimicrobial agents closing each other's mutant selection windows to prevent antimicrobial resistance. Scientific Reports. 8:7237. DOI:10.1038/s41598-018-25714-z

Xu L, D Zhaobin, F Lu, L Yongjiang, W Zhaoyuan, G Hailong, Z Guoqing, Q G Yong, C Devin, X Qingyou, & W Yi. 2019. OrthoVenn2: a web server for whole-genome comparison and annotation of orthologous clusters across multiple spesies. Nucleic Acids Research. 47: 52-58. 10.1093/nar/gkz333

Yang S S & S S Yuan. 1990. Oxytetracyline production by *Strepmyces rimosus* in solid substrate cultivation. Journal of Applied Bacteriology. 80: 545-550

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Yano Y, K Hamano, M Satomi, I Tsutsui & M Ban. 2014. Prevalence and antimicrobial susceptibility of vibrio spesies related to food safety isolated from shrimp cultured at inland ponds in Thailand. Food Control. 38: 30–36

Yin R., C K Kwoh, & J. Zheng. 2018. Whole Genome Sequencing Analysis: Computational Pipelines and Workflows in Bioinformatics. Encyclopedia of Bioinformatics and Computational Biology. doi:10.1016/B978-0-12-809633-8.20095-2

Yip C.-H, O Yarkoni, J Ajioka, K.-L Wan, & S Nathan. 2019. Recent advancements in high-level synthesis of the promising clinical drug, prodigiosin. Applied Microbial Biotechnology. 103: 1667−1680.

Yoon V & J R Nodwell. 2014. Activating secondary metabolism with stress and chemicals. Journal of Industrial Microbiology and Biotechnology. 41: 415–424. DOI 10.1007/s10295-013-1387-y

Yu X, S G. Hallett, J. Sheppard, & A. K. Wasrom. 1997. Application of the Plackett–Burman experimental design to evaluate nutritional requirements for the production of *Colletotrichum coccodes* spores. Applied Microbiology Biotechnology. 47: 301-305.

Yu M, W Junfeng, T Kaihao, S Xiaochong, W Shushan, Z Wei-ming & Z Xiao-hua. 2012. Purification and characterization of antibacterial compounds of *Pseudoalteromonas flavipulchra* JG1. Microbiology. 158: 835-842

Zaenuddin, A., Y L., Nuraini, & A Faries. 2019. Pengendalian penyakit vibriosis pada ikan kakap putih. Jurnal perekayasaan budidaya air payau dan laut. 14: 77-83

Zhang L, A Rong, W Jinping, S Nuo, Z Si, H Jiangchun & K Jun. 2005. Exploring novel bioactive compound from marine microbes. Current Opinion in Microbiology. 8: 276–281.

Zhang X, Y W Li, Z Q Mo, X C Luo, H Y Sun, P Liu, A X Li, S M Zhou, & X M Dan. 2014. Outbreak of a novel disease associated with *Vibrio mimicus* infection in freshwater cultured yellow catfish, *Pelteobagrus fulvidraco*. Aquaculture. 432: 119–124.

Zhao C, L Jing-Jing, G Ting, H Xiang-Ling, Y De-Zan & L Zhu-hua. 2014. *Pseudoalteromonas xiamenensis* sp. nov., a marine bacterium isolated fromcoastal surface water. International journal of systematic and evolutionary microbiology. 64: 444-448.

Zhong Z, B He, J Li, & Y Li. 2020. Challenges and advances in genome mining of ribosomally synthesized and post-translationally modified peptides (RiPPs). Synthetic and Systems Biotechnology. 5: 155–172. https://doi.org/10.1016/j.synbio.2020.06.002

Zhu X M, H Stefanie, N T Maulik, K Lindsay, & W Claudia, *et al.* 2015. Biosynthesis of the Fluorinated Natural Product Nucleocidin in *Streptomyces calvus* is

UNIVERSITAS
GADJAH MADA
Isolasi, Karakterisasi, Aktivitas anti-Vibrio dan Klaster Gen Penyandi Senyawa Bioaktif dari Pseudoalteromonas xiamenensis STKMTI.2
DESY PUTRI HANDAYANI, Dr. Ir. Alim Isnansetyo, M.Sc; Indah Istiqomah, S.Pi., M.Si., Ph.D; Prof. Drs. Jumina, Ph.
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

Dependent on the bldA-Specified Leu-tRNAUUA Molecule. Chem Bio Chem. 16: 2498-2506. https://doi.org/10.1002/cbic.201500402.