

## DAFTAR PUSTAKA

- Abele, D., Heise, K., Portner, H.O., & Puntarulo, S. 2002. Temperature-dependence of mitochondrial function and production of reactive oxygen species in the intertidal mud clam *Mya arenaria*. *J. of Exp. Biology* 205, 1831-1841.
- Al-Banaw, A., R. Kenngott, J.M. Al-Hassan, N. Mehana & F. Sinowatz. 2010. Histochemical analysis of glycoconjugates in the skin of a catfish (*Ariustenuispinis*, Day). *J. of Vet. Medicine Seri C* 39 (1): 42-50.
- Amparyup, P., J. Sutthangkul, W. Charoensapsri, A. & Tassanakajon. 2012. Pattern recognition protein binds to lipopolysaccharide and  $\beta$ -1,3-glucan and activates shrimp prophenoloxidase system. *J. Biol. Chem.* 287: 10060-10069.
- Amparyup, P., W. Charoensapsri & A. Tassanakajon, 2013. Prophenoloxidase system and its role in shrimp immune responses against major pathogens. *Fish and Shellfish Immunology*, 34:990-1001.
- Anderson, R. (1989) Early warnings of stress. *New Scientist*, 7: 50-52.
- Archana, P.R., J. Aleena, P. Pragna, M.K. Vidya, P.A. Abdul Niyas, M. Bagath, G. Krishnan, A. Manimaran, V. Beena, E.K. Kurien, V. Sejian and R. Batta. 2017. Role of heat shock protein in livestock adaptation to heat stress. *J. of Dairy, Vet & Anim Research*. 5 (1): 13-19.
- Arctos, 2018. Collaborative Collection Management Solution. [https://www.arctos.database.museum/name/Haliotis\\_squamata](https://www.arctos.database.museum/name/Haliotis_squamata).
- Asada, K. 1992. Ascorbate peroxidase a hydrogen peroxide scavenging enzyme in plants. *Physiol. Plantarum* 85: 235-241.
- Asea, A.A.A. & P. Kaur. 2018. Regulation of Heat Shock Protein Responses. Springer. Heat Shock Protein 13. 461p.
- Ashida, M. & Soderhall, K. 1984. The Prophenoloxidase activating system in crayfish. *Comp. Biochem. Physiol.* 77B: 21-26.
- Avnimelech, Y., 1999. Carbon/nitrogen ratio as a control element in aquaculture systems. *Aquaculture* 176: 227-235. [https://doi.org/10.1016/S0044-8486\(99\)00085-X](https://doi.org/10.1016/S0044-8486(99)00085-X).
- Avnimelech, Y., P.D. Schryver, M. Emmereciano, D. Kuhn, A. Ray & N. Taw. 2012. Biofloc Technology. A Practical Guide Book. Second edition. World Aquac. Society. p.272.
- Bachère, E. 2000. Shrimp immunity and disease control. *Aquaculture*, 191:3-11.
- Baldwin, J., Wells, R. M. G., Low, M. and Ryder, J. M. 1992. Tauropine and L-lactate as metabolic stress indicators during transport and storage of live Paua, (New Zealand Abalone) *Haliotis iris*. *J. Food Sci.* 57:280-282.
- Bayne, C.J., Hahn, U.K. dan Bender, R.C. 2001. Mechanism of molluscan host resistance and of parasite strategies for survival. *Parasitology* 123: 159-167.

- Beltran, C.A., R. Searcy-Bernall, M. L. Lizarraga-partida, 1998. Pathogenic effects of *Vibrio alginolyticus* on larvae and postlarvae of the red abalone *Haliotis rufescens*. Diseases of aquatic org. Vol 33: 119-122.
- Ben kahla-Nakbi, A., K. Chaieb., A. Besbes., T. Zmantar., A. Bakhrouf., 2006. Virulence and enterobacterial repetitive intergenic consensus PCR of *Vibrio alginolyticus* strains isolated from Tunisian cultured gilthead sea bream and seabass outbreaks, Vet. Microbiology, Vol. 117: 321–327.
- Beveridge, M.C.M., Phillips, M.J., Clarke, R.M., 1991. A quantitative and qualitative assessment of wastes from aquatic animal production. In: Brune. D.E. Tomasso, J.R. (Eds). Advances in word aquaculture: Aquaculture and water quality. Vol 3. Pp. 506-533.
- Bigot, A., Doyen, P., & Vasseur, P., 2009. Metallothioneine coding sequence identification and seasonal mRNA expression of detoxification genes in bivalve *Corbicula fluminea*. Ecotox Environ Saf. 72: 382-387.
- Boarder, S.J. & Maguire, G.B. 1998. Evaluation of vitamin and mineral requirements for Greenlip abalone *Haliotis laevis* – a progress report. In: Hone, P. (Ed)., Proceedings of the 5th Annual Abalone Aquaculture Workshop, July, 1998, Hobart, Tasmania. Fish. Research and Develop. Corporation. pp 76-87.
- Boarder, S.J., Maguire, G.B. and Harris, J.O. 2000. Effect of salinity on survival and haemolymph parameters for greenlip abalone. In Burke, C.M., Harris, J.O., Hindrum, Edwards, S.J. and Maguire, G.B., 2000. Environmental Requirements of Abalone. Final Report Project 97/323. Fish. Research and Develop. Corporation, Canberra, Australia. Tasmanian Aquac and Fish Institute, Hobart. pp 97-109.
- Boardman, G.D., Starbuck, S.M., Hudgins, D.B., Li, X.Y., Kuhn, D.D., 2004. Toxicity of ammonia to three marine fish and three marine invertebrates. Environ. Toxicol. 19, 134–142.
- Boon, J.P., Lewis, W.E., Choy, M.R., Allchin, C.R., Law, R.J., De Boer, J., 2002. Level of polybrominated diphenyl ether (PBDE) flame retardants in animal representing different trophic levels of the north sea food web . Envir sci technol. 36: 4025-4032.
- Bosman, A.L. & P.A.R., Hockey. 1988. The influence of seabird guano on the biological structure of rocky intertidal communities on island of the west coast of Southern Africa. S.Aft. J. Mar Sci. 7:61-68.
- Bowler, K., 2005. Acclimation, heat shock and hardening. J. Therm Biol. 30 (2): 125-130.
- Breusegem, F., Van Montagu, M., Van Inze, D., Van Breusegem, F., Van Montagu, M., 1998. Engineering stress tolerance in maize. Outlook on Agriculture 27: 115-124.
- Brooks, A.S., and J.M. Bartos. 1984. Effects of free and combined chlorine and exposure duration on rainbow trout, channel catfish, and emerald shiners. Trans. Am. Fish. Soc. 113: 786-793.

- Bustamante, R.H., G.M. Branch, S. Eekhout, B. Robertson, P. Zoutendyk, M. Schleyer, A. Dye, N. Hanekom, D. Keats, M. Jurd & C. Mac Quaid. 1995. Gradients of intertidal primary productivity around the coast of South Africa and relationship with consumer biomass. *Oecologia* 102: 189-201.
- Calderwood, S.K., Y. Xie, X. Wang, M.A. Khaleque, S.D. Chou, A. Murshid, T. Prince and Y. Zhang. 2010. Signal transduction pathways leading to heat shock transcription. NIH. Public Access. *Sign Transduc. Insight*. 2: 13-24.
- Canesi L, Barmo C, Fabbri R, Ciacci C, Vergani L, Roch P, et al. 2010. Effects of vibrio challenge on digestive gland biomarkers and antioxidant gene expression in *Mytilus galloprovincialis*. *Comp Biochem Physiol*; 152: 399-406.
- Capinpin EC, Toledo JD, Encena VC, Doi M. 1998. Density dependent growth of the tropical abalone *Haliotis asinina* in cage culture. *Aquaculture*; 171: 227-235.
- Capinpin EC, Encena V, Bayona NC. 2000. Studies on the reproductive biology of the Donkey's ear abalone, *Haliotis asinina* Linne. *Aquaculture* 166:141–150.
- Capinpin Jr., E.C. 2013. Status of abalone fishery and experimental mariculture as a resource conservation strategy in Carot. *Anda.Sci.Diliman* 25 (1):50-69.
- Cardinaud, M., C. Offret, S. Huchette & D. Moraga. 2014. The impacts of handling and air exposure on immun parameters, gene expression, and susceptibility to vibriosis of European abalone *Haliotis tuberculata*. *Fish and Shellfish Immunol*. 36:1-8.
- Castillo, A.V., A. Sánchez-Paz, R. C. Longoria, M. A. López-Torres, & J. M. Grijalva-Chon, 2019. HSP70 function and polymorphism, its implications for mollusk aquaculture: a review. *Latin American Journal of Aquatic Research*, 47(2): 224-231.
- Cellura, C., M. Toubiana, N. Parrinello, & P. Rocha. 2006. HSP70 gene expression in *Mytilus galloprovincialis* hemocytes is triggered by moderate heat shock and *Vibrio anguillarum*, but not by *V. splendidus* or *Micrococcus lysodeikticus*. *Develop. and Compar. Immunol*. 30: 984–997.
- Chapman, P.M., Popham, J.D., Griffin, J., Leslie, D., Michaelson, J. 1987. Differentiation of physical from chemical toxicity in solid fish waste bioassay. *Water air soil polluted*. 33: 295-309.
- Charles A. Janeway, Jr. and Ruslan Medzhitov. 2002. Innate Immune Recognition. *Annu. Rev. Immunol*. 2002. 20:197–216.
- Chelikani, P., Fita, I., & Loewen, P.C. 2004. Diversity of structures and properties among catalase. *Cell. Mol. Life. Sci.* 61 (2): 192-208.
- Chen, M., Yang, H., & Delaporte, M. 2007. Immune Condition of *Chlamys farreri* in response to acute temperature challenge. *Aquaculture*. 271:479-87.
- Cheng, W., I-Shan Hsiao, J. Chu Chen. 2004. Effect of ammonia on the immune response of Taiwan abalone *Haliotis diversicolor supertexta* and its susceptibility to *Vibrio parahaemolyticus*. *Fish & Shellfish Immunology* 17: 193-202.

- Cheng, P., X. Liu, G. Zhang, & J. He. 2007. Cloning and expression analysis of a HSP70 gene from Pacific abalone (*Haliotis discus hannai*). *Fish & Shellfish Immunology* 22: 77-87
- Cheng,W., Hsiao IS, Hsu CH.,& Chen J.C. 2004. Change in water temperature on the immune response of Taiwan Abalone *Haliotis diversicolor supertexta* and its suceptibility to *Vibrio parahaemolyticus*. *Fish Shellfish. Immunol.*17:235-43
- Cheng,W.,C.H.Li, & J.C.Chen. 2004. Effect of dissolve oxygen on the immune respons of *Haliotis diversicolor supertexta* and its susceptibility to *Vibrio parahaemolyticus*. *Aquaculture* 323:103-115.
- Chinchar V.G., L. Bryan, U. Silphadaung , E. Noga, D. Wade & L. Rollins-Smith. 2004. Inactivation of viruses infecting ectothermic animals by amphibian and piscine antimicrobial peptides. *Virology* 323: 268-275.
- Chuang, K.H., Ho, S.H., Song, Y.L., 2007. Cloning and expression analysis of heat shock cognate 70 gene promoter in tiger shrimp (*Penaeus monodon*). *Gene* 405: 10–18.
- Close, D.A., Yun,S.S., Mc Cormick,S.D., Wildbill,A.J. and Li, W. 2010. 11-Deoxycortisolisa corticosteroid hormone in the lamprey. *Proc.Natl. Acad. Sci.U.S.A.*107:13942–13947.
- Cone, R.A. 2009. Barrier properties of mucus. *Advanced Drug Delivery Reviews*, 61(2): 75–85.
- Cook, P.A. & Gordon,H.R. 2010. World Abalone Supplay Markets and Pricing.*J. Shellfish Research* 29:569-571.
- Cottin, D., B. Shillito , T. Chertemps, A. Tanguy, N. Léger & J. Ravaux. 2010. Identification of differentially expressed genes in the hydrothermal vent shrimp *Rimicaris exoculata* exposed to heat stress. *Marine Genomics* 3: 71–78.
- Crow, T.P., R.C. Thompson, S.Bray & S.J. Hawkins. 2000. Impact of anthropogenic stress on rocky intertidal communities. *J. of Aquatic Ecosystem Stress and Recovery* 7: 273-297.
- Csermely,P. and Lazlo Vigh, 2007. Molecular Aspects of the Stress Response: Chaperones, Membranes and Networks. *Adance in Experimental and Medicine and Biology*. Vol. 594. Springer Science, Business Media, LLC.200p.
- Dang,VT.,Speck,P.,&Benkendorff,K. 2012. Influence of elevated temperatures on the immun respons of abalone, *Haliotis rubra*. *Fish Shellfish Immunol.* 32:732-740.
- Davies MS, Hawkins SJ. 1998. Mucus from marine mollusks. *Adv. Mar. Biol.* 34: 1-71.
- Davies MS, Jones HD, Hawkins S.J.,1990. Seasonal variation in the composition of pedal mucus from *Patella vulgata* L. *J. Exp. Mar. Biol. Ecol.* 144: 101-112.

- Davies, M.S., 1993. Energetic implications of variation in pedal mucus production by *Patella vulgata* Linnaeus, 1758. *Veliger*. Vol. 36: 203-208.
- De Zoysa, M., I. Whang, Y. Lee, S. Lee, J. S. Lee, & J. Lee. 2009. Transcriptional analysis of antioxidant and immune defense genes in disk abalone (*Haliotis discus discus*) during thermal, low-salinity and hypoxic stress. *Compar. Biochem. and Physiol. Part B* 154: 387-395.
- Dietrich JP, Van Gaest AL, Strickland SA, Arkoosh MR. 2014. The impact of temperature stress and pesticide exposure on mortality and disease susceptibility of endangered Pacific salmon. *Chemosphere*. 108:353-359.
- Easy, R.H. & N. W. Ross. 2009. Changes in Atlantic salmon (*Salmo salar*) epidermal mucus protein composition profiles following infection with sea lice (*Lepeophtheirus salmonis*). *Compar. Biochem. and Physiol. Part D* 4(3): 159-167.
- Edwards, S., 1996. 'Thermal preferences and tolerances of Greenlip and Blacklip abalone.' In: Hone, P. (Ed). *Proceedings of the 3rd Annual Abalone Aquaculture Workshop, August, 1996, Port Lincoln, South Australia*. Fish. Research and Develop. Corp. pp 60-62.
- Ekasari, J., M. H. Azhar, E. H. Surawidjaja, S. Nuryati, P. De Schryver, & P. Bossier, 2014. Immune response and disease resistance of shrimp fed biofloc grown on different carbon source. *Fish & Shellfish Immunology* 41: 332-339.
- Emerenciano, M., Cuzon, G., Arévalo, M., Gaxiola, G., 2013. Biofloc technology in intensive brood fish farming of the pink shrimp *Farfantepenaeus duorarum*: spawning performance, biochemical composition and fatty acid profile of eggs. *Aquac. Res.* [http:// dx.doi.org/10.1111/are.12117](http://dx.doi.org/10.1111/are.12117).
- Environment Canada. 1993. Chlorinated wastewater effluents Canadian Environmental Protection Act-priority substances list supporting document. Government of Canada. Health and Welfare Canada; Environment Canada, Ottawa, Ontario.
- Esteban, M.A. 2012. An Overview of the immunological defenses in fish skin. *ISRN. Immunology*.
- Fairweather, P.G., 1990. Sewage and the biota on seashores : Assessment of impact in relation to natural variability. *Environ. Monit. Asses.* 14: 197-201.
- Fallu, R. 1991. *Abalone Farming*. Fishing News Books. 192 p.
- Farcy, E., A. Serpentine, B. Fiévet & J.M. Lebel. 2007. Identification of cDNAs encoding HSP70 and HSP90 in the abalone *Haliotis tuberculata*: Transcriptional induction in response to thermal stress in hemocyte primary culture. *Compar Biochem and Physiol, Part B* 146: 540-550.
- Farcy, E., Voiseux, C., Lebel, J.M. & Fiévet, B. 2009. Transcriptional expression levels of cell stress marker genes in the Pacific oyster *Crassostrea gigas* exposed to acute thermal stress. *Cell Stress and Chaperones*, 14: 371-380.

- Fernandes, M.N., Moron, S.E., Sakuragai, M.M. 2007. Gill morphological adjustment to environment and the gas exchange function. Enfield: science publishers. P93-120.
- Fernandes, M.N., Paulino, M.G., Sakuragai, M.M., Ramos, C.A., Pereira, C.D.S., Sadauskas, H. 2013. Organochlorines and metals induce changes in mitochondria rich cells of fish gills: an integrative field study involving chemicals, biochemicals and morphological analysis. *Aquat toxicol.* 126:180-190.
- Freeman, K.A. 2001. Aquaculture and related biological attributes of abalone species in Australia-a Review. *Fish Research Report.* No.128: 1-48.
- Frydman, J., 2001. Folding of Newly Translated Protein in vivo: the role of molecular chaperones. *Annu. Rev. Biochem* 70: 603-647.
- Gallardo, W.G. 2002. Mollusc Culture. Lecture Notes Responsible Aquaculture Development. JICA-TCTP-RAD.SEAFFDEC
- Gao, Q., L. Song, D. Ni, L. Wu, H. Zhang, & Y. Chang. 2007. cDNA cloning and mRNA expression of heat shock protein 90 gene in the hemocytes of Zhikong scallop *Chlamys farreri*. *Comparative Biochemistry and Physiology, Part B* 147: 704–715.
- Genedani S, Bernadi M, Ottaviani E, Franceschi C, Leung MK, Stefano G. 1994. Differential modulation of invertebrate haemocyte motility by CRF, ACTH and its fragments. *Peptides* 15:203-206.
- Giuseppe, L., Squadrito, Edward M., Postlethwait, & S. Matalon. 2010. Elucidating mechanisms of chlorine toxicity: reaction kinetics, thermodynamics, and physiological implications. *Am J Physiol Lung Cell Mol Physiol* 299: L289–L300.
- Gomez-Leon, J., L. Villamil, M. L. Lemos, B. Novoa, and A. Figueras, 2005. Isolation of *Vibrio alginolyticus* and *Vibrio splendidus* from Aquacultured Carpet Shell Clam (*Ruditapes decussatus*) Larvae Associated with Mass Mortalities. *Applied and Environmental Microbiology*, p. 98–104.
- Gonati, R., Papis, E., Rimoldi, S., Teoa, G., Saoglia, M., Bernardini, G., 2004. Rearing density influences the expression of stress related genes in sea bass (*Dicentrarchus labrax* L.) *Gene* 31:111-118.
- Gonzalez, S.F., M.O. Huisin & R. Stakauskas. 2007. Real-time gene expression analysis in carp (*Cyprinus carpio* L.) skin: inflammatory responses to injury mimicking infection with ectoparasites. *Developmental and Comparative Immunology* 31(3): 244–254.
- Grandiosa, R., F. Merien, K. Pillay, & A. Alfaro. 2016. Innovative application of classic and newer techniques for the characterization of haemocytes in the New Zealand black-footed abalone (*Haliotis iris*). *Fish & Shellfish Immunology* 48:175-184.
- Green, D.E. & P.K. Stumpf. 1946. A note on enzymatic methods of estimating chlorine. *J. Am. Water work Assoc.* 38: 1306-1308.

- Groethe D.R. & J.W. Eathon 1975. Chlorine-induced mortality in fish. *Trans. Am. Fish. Soc.* 104: 800-802.
- Grøsvik, B.E. & A. Goksøyr. 1996. Biomarker protein expression in primary cultures of salmon (*Salmo salar* L.) hepatocytes exposed to environmental pollutants. *Biomarkers*, 1: 45–53.
- Guldberg, O.H. & J. F. Bruno. 2010. The Impact of Climate Change on the World's Marine Ecosystems. [www.sciencemag.org](http://www.sciencemag.org) SCIENCE Vol. 328.
- Gunderson, L.H. & Holling, C.S., 2002. In: Island, Pr (Ed.), *Panarchy: understanding transformations in systems of humans and nature*. Island Press, Washington, DC.
- Guilan, Di., J.Ni, Z. Zhang, W. You, B. Wang and C. Ke., 2012. Types and distribution of mucous cells of the abalone *Haliotis diversicolor*. *African J. of Biotechnology* Vol. 11(37): 9127-9140.
- Guo, X., Yan He, L. Zhang, C. Lelong, & A. Jouaux. 2015. Immune and stress responses in oysters with insights on adaptation. *Fish & Shellfish Immunology* xxx : 1-13
- Hahn, K.O., 1989. *Handbook of Culture of Abalone and Other Marine Gastropods*. CRC Press, Inc. Boca Raton, Florida. 348 p.
- Haldane C. 2002. Measuring stress in greenlip abalone (*Haliotis laevigata*) using biochemical indicators. BSc. Honours thesis, Flinders University.
- Hall, C.M., Rhind, S.M., & Wilson, M.J. 2009. The Potential for Use of gastropods mollusk as bioindicators of endocrine disrupting compounds in the terrestrial environment. *J. of Envir Monit* 11: 491-7.
- Halliwell, B. & J.M.C. Gutteridge. 1986. Oxygen free radicals and iron in relation to biology and medicine: some problems and concepts. *Archive for Biochemistry and Biophysics*, 246: 501– 514.
- Handler, J., Carson, J., Donachie, L., Gabor, L., Taylor, D. 2005. Bacterial infection in Tasmanian farmed abalone: causes, pathology, farm factors and control options. In: Walker, P. Lester, R. Bondad-Reantoso, M.G. (Eds). *Diseases in Asian Aquaculture V. Fish Health Section*. Asian Fish Soc. Manila, pp. 289-299.
- Hartl, F.U., 1996. Molecular chaperone in cellular protein folding. *Nature* 381: 571-580.
- Hauton, C. 2012. The scope of crustacean immune system for disease control. *Journ of Invert Pathol*, 110: 251-260.
- Heise, K., Puntarulo, S., Portner HO., & Abele, D. 2003. Production of reactive oxygen species by isolated mitochondria of the Antarctic bivalve *Laternula elliptica* (King and Broderip) under heat stress. *Comp Biochem Physiol Part C Toxicol Pharmacol* 134: 79-90.
- Hellio, C., A. Bado-Nilles, B. Gagnaire, T. Renault, & H. Thomas-Guyon. 2007. Demonstration of a true phenoloxidase activity and activation of a ProPO

- cascade in Pacific oyster, *Crassostrea gigas* (Thunberg) in vitro. *Fish & Shellfish Immunol.* 22: 433-440.
- Hellio, C., A.M. Pons, C. Beaupoil, N. Bourgougnon & Y.L. Gal. 2002. Antibacterial, antifungal and cytotoxic activities of extracts from fish epidermis and epidermal mucus. *Internat J. of Antimic Agents* 20: 214-219.
- Heath, A. G. 1977. Toxicity of intermittent chlorination to freshwater fish: Influence of temperature and chemical form. *Hydrobiologia.* 56: 39-47.
- Hochachka, P.W., & Somero, G.N., 2002. *Biochemical Adaptation: Mechanism and Process in Physiological Evolution.* Oxford University Press, New York.
- Holmgren, J. & C. Czerkinsky. 2005. Review: Mucosal immunity and vaccines. *Nature Medicine* 11: S45-S53.
- Hommel, D.W., M.P. Peppelenbosch, S.J. van Deventer. 2002. Mitogen activated protein (MAP) kinase signal transduction pathways and novel anti-inflammatory targets. *Gut.* 52: 144-151.
- Hone, P.W. & Fleming, A.E., 1998. 'Abalone.' In: K. Hyde, (Ed), 1998. *The new rural industries. A handbook for farmers and investors.* Rural Industries and Develop. Corporation, Canberra. 85-92.
- Hooper, C., R. Day, R. Slocombe, J. Handler, & K. Benkendorff. 2007. Stress and immune responses in abalone: Limitations in current knowledge and investigative methods based on other models. *Fish & Shellfish Immunol.* 22: 363-379.
- Hooper, C., R. Day, R. Slocombe, K. Benkendorff, J. Handler, & J. Goulias. 2014. Effects of severe heat stress on immune function, biochemistry and histopathology in farmed Australian abalone (hybrid *Haliotis laevis* × *Haliotis rubra*). *Aquaculture* 432: 26–37.
- Horn, P.L., 1986. Energetics of *Chiron pelliserpenis* (Quoy & Gaimard, 1835) (Mollusca: Polyplacophora) and the importance of mucus in its energy budget. *J. Exp. Mar. Biol. Ecol.* Vol. 101: 119-141.
- Hsieh, S.L., Y.H. Ruan, Y.C. Li, P.S. Hsieh, C.H. Hu, & C.M. Kuo. 2008. Immune and physiological responses in Pacific white shrimp (*Penaeus vannamei*) to *Vibrio alginolyticus*. *Aquaculture* 275: 335–341.
- Hsu, T.H. & J. C. Gwo. 2017. Genetic diversity and stock identification of small abalone (*Haliotis diversicolor*) in Taiwan and Japan. *PLoS ONE.* 12(6): 179-181. <https://doi.org/10.1371/journal.pone.0179818>.
- Hutchinson N, Davies MS, Ng JSS, Williams GA. 2007. Trail following behaviour in relation to pedal mucus production in the intertidal gastropod *Monodonta labio* (Linnaeus). *J Exp. Mar. Biol. Ecol.* 349: 313-322.
- Idler, D. R., Freeman, H. C. and Truscott, B. 1967a. Biological activity and protein-binding of 1 $\alpha$ -hydroxycorticosterone: an interrenal steroid in elasmobranch fish. *Gen. Comp. Endocrinol.* 9: 207–213.

- Idler, D. R., Freeman, H. C. and Truscott, B. 1967b. A preliminary communication on the biological activity of 1 $\alpha$ -hydroxycorticosterone isolated from cartilaginous fish. *J. Fish. Res. Bd. Can.* 24: 205–206.
- Idler, D. R. and Sangalang, G. B. 1970. Steroids of a chondrosteian: in-vitro steroidogenesis in yellow bodies isolated from kidneys and along the posterior cardinal veins of the American Atlantic sturgeon. *Acipenser oxyrinchus* Mitchell. *J. Endocrinol.* 48: 627–637.
- Ingerson, T., T. Flowers & J. Todd. 2007. Code of Practice for the environmental management of the South Australian Abalone Aquaculture Industry. 39p
- Islam, S.M., & M. Tanaka. 2004. Impacts of pollution on coastal and marine ecosystems including coastal and marine fisheries and approach for management : a review and synthesis. *Marine Pollution Bulletin* 48. 624-649.
- Isnansetyo, A. dan Kurniastuty. 1995. Teknik kultur phytoplankton dan zooplankton. Kanisius. Yogyakarta. Halaman 22-25.
- Jaishankar, M., T. Tseten, N. Anbalagan, B. B. Mathew, & K. N. Beeregowda. 2014. Toxicity, mechanism and health effects of some heavy metals. *Interdiscip Toxicol.* Vol. 7(2): 60–72.
- Janeway Jr., C.A. & R. Medzhitov. 2002. Innate immune recognition. *Annual Review of Immunology* 20: 197-216.
- Kania, P.W., R.R. Sorensen, C. Koch, J. Brandt, A. Kliem, L. Vitved, S. Hansen & K. Skjodt. 2010. Evolutionary conservation of mannan-binding lectin (MBL) in bony fish: Identification, characterization and expression analysis of three bona fide collectin homologues of MBL in the rainbow trout (*Onchorhynchus mykiss*). *Fish & Shellfish Immunology* 29: 910-920.
- Kakkar, P. & Singh, B.K. 2007. Mitochondria : A hub of redox activities and cellular distress control. *Mol cell biochem.* 305: 235-253.
- Kehrer, J.P. 1993. Free radicals as mediators of tissue injury and disease. *Critical Reviews in Toxicology*, 23: 21–48.
- Kementerian PPN/Bappenas, 2013. Pembangunan Kelautan Dan Perikanan Dalam Prioritas Pembangunan Nasional 2015-2019. Deputi Bidang Sumber Daya Alam dan Lingkungan Hidup Jakarta.
- Kim, K.Y., S. Y. Lee, Y. S. Cho, I. C. Bang, K. H. Kim, D. S. Kim, & Y. K. Nam. 2007. Molecular characterization and mRNA expression during metal exposure and thermal stress of copper/zinc and manganese superoxide dismutases in disk abalone, *Haliotis discus discus*. *Fish & Shellfish Immunol.* 23: 1043-1059.
- Kim, J.H., S.K. Kim, Y. B. Hur. 2019. Hematological parameters and antioxidant responses in olive flounder *Paralichthys olivaceus* in biofloc depend on water temperature. *J of Thermal Biology.* 82: 206-212. C acid in juvenile rockfish: antioxidant responses, MT gene expression, and neurotransmitters. *Chemosphere* 171: 572-527.
- Kim, J.H., Kang, J.C., 2017. Effect of sub-chronic exposure to lead (Pb) and ascor

- Koppang, E.O., U. Fischer, L. Moore, M.A. Tranulis, J.M. Dijkstra, B. Kollner, L. Aune, E. Jirillo & I. Hordvik. 2010. Salmonid T cells assemble in the thymus, spleen and in novel interbranchial lymphoid tissue. *J. Anat.* 217: 728-739.
- Kose, S. & N. Imamoto. 2014. Nucleocytoplasmic transport under stress conditions and its role in HSP70 chaperone systems. *Biochimica et Biophysica Acta* 1840: 2953–2960.
- Kwak, H.J., C.D. Jun, H.O. Pae, J.C. Yoo, Y.C. Park, B.M. Choi, Y.G. Na, R.K. Park, H.T. Chung, H.Y. Chung, W.Y. Park & J.C. Seo. 1998. The role of inducible 70-kDa heat shock protein in cell cycle control, differentiation, and apoptotic cell death of the human myeloid leukemic HL-60 cells. *Cellular Immunology*, 187: 1–12.
- Lacoste, A., De Cian, M.C., Cueff, A., Poulet, S.A. 2003. Noradrenaline and alpha-adrenergic signalling induce the HSP70 gene promoter in mollusk immune cells. *J. Cell Sci.* 114: 3557–3564.
- Lafarga de la Cruz & F. Gallardo E.C. 2011. Intraspecies and Interspecies hybrids in *Haliotis*: Natural and experimental evidence and its impact on abalone aquaculture. *Rev Aquac* 3:74-99.
- Lajnef, R., M. Snoussi., J.L. Romalde., C. Nozha., A. Hassen., 2012. Comparative study on the antibiotic susceptibility and plasmid profiles of *Vibrio alginolyticus* strains isolated from four Tunisian marine biotopes, *World J Microb. Biotech.* Vol. 28(12): 3345-63.
- Lawrence, C. 1995. Greenlip, brownlip and Roe's abalone. *Aquaculture WA*, No. 7. Fisheries Department of Western Australia. 4-pp.
- Lawrence, A. & K. Hemingway, 2004. *Effect of Pollution on Fish. Molecular Effect and Population Responses.* Blackwell Science. 362 p.
- Le Pennec, G., Le Pennec, M. 2003. Induction of glutathione S transferase in primary cultured digestive gland acini from mollusk bivalve *Pecten maximus* (L) : application of new cellular model in biomonitoring studies. *Aqua Toxicol* 64: 131-142.
- Leaf, R.T. 2005. *Biology of the red abalone, Haliotis rufescens*, in northern California. A Thesis Presented to The Faculty of the Department of Marine Science San Jose State University. p 96.
- Lee KK, Liu PC, Chen CY, Huang C.Y. 2001. The implication of ambient temperature with outbreak of vibriosis in cultured small abalone *Haliotis diversicolor supertexta* Lischke. *J. Therm. Biol.* 26: 585-587.
- Lee, M.H., T. Osaki, J.Y. Lee, M.J. Baek, R. Zhang, J.W. Park, S. Kawabata, K. Soderhäll & B.L. Lee. 2004. Peptidoglycan recognition proteins involved in 1,3-β-D-glucan-dependent prophenoloxidase activation system of insect. *J. Biol. Chem.* 279: 3218-3227.
- Lee, K.K., 1995. Pathogenesis studies on *Vibrio alginolyticus* in the grouper, *Epinephelus malabaricus* Bloch et Schneider, *Microb Pathog*, Vol. 19: 39–48.

- Leighton, D.L. 2000. The Biology and Culture of the California abalones. Pittsburg,PA.Dorrance Publishing Co.Inc.216pp.
- Lewis,S., R.D.Handy,B.Cordi,Z.Billinghurst, & M.H.Depledge.1999. Stress proteins (HSP's) : Methods of Detection and Their Use as an Environmental Biomarker.Kluwer Academic Publisher,Boston. 351 p.
- Li,F. & Xiang,J. 2013. Recent advances in reaserches on the innate immunity of shrimp in China, Develop. and compar. immunol. 39: 11-26.
- Li,H., Xi. Sun, Z. Cai, G. Cai, K. Xing. 2010. Identification and analysis of a Cu/Zn superoxide dismutase from *Haliotis diversicolor* supertexta with abalone juvenile detached syndrome. J. of Invertebrate Pathology 103:116–123
- Liang,S., X. Luo, W. You, L. Luo, C. Ke. 2014. The role of hybridization in improving the immune response andthermal tolerance of abalone. Fish & Shellfish Immunol. 39: 69-77.
- Lindquist, S. & E.A. Craig. 1988. The heat-shock proteins. Annual Reviews in Genetics, 22: 631–677.
- Liu J, Yang W-J, Zhu X-J, Karouna-Renier NK, Rao RK. 2004. Molecular cloning and expression of two HSP70 genes in the prawn, *Macrobrachium rosenbergii*. Cell Stress Chaperones.9:313–323.
- Livak, K.J., Schmittgen, T.D., 2001. Analysis of relative gene expression data using real-time quantitative PCR and the 2 (Delta Delta C (T)) method. Methods 25: 402–408.
- Livingstone, D.R., P. García Martínez & G.W. Winston. 1989. Menadione-stimulated oxyradical formation in digestive gland microsomes of the common mussel, *Mytilus edulis* L. Aquatic Toxicology,15: 213–236.
- Livingstone, D.R., S. Archibald, J.K. Chipman & J.W. Marsh.1992. Antioxidant enzymes in liver of dab, *Limanda limanda* from the North sea. Marine Ecology Progress Series. 91(1–3): 97–104.
- Lo W-Y, Liu K-F, Liao I-C, Song Y-L. 2004. Cloning and molecular characterization of heat shock cognate 70 from tiger shrimp (*Penaeus monodon*) Cell Stress Chaperones. 9:332–343.
- Lopez-Gappa, J.J.,A.Tablado & N. H. Magaldi. 1990. Influence of sewage pollution on a rocky intertidal community dominated by the mytilid *Brachidontes rodriguezii*.Mar Ecol.Prog.Ser.63:163-175.
- Lorenzon, S., Francese, M., Smith, V. J. & Ferrero, E.A. 2001. Heavy metals affect the circulating haemocyte number in the shrimp *Palaemon elegans*. Fish & Shellfish Immunol. 11: 459-472.
- Lushchak, V.I., 2011. Environmentally induced oxidative stress in aquatic animals. Aquatic Toxicology 101 : 13-30.
- Lyer, L., J. Vadivelu., & S.D. Puthuchear, 2000.Detection of virulence associated genes, haemolysin andprotease amongst *Vibrio cholerae* isolated in Malaysia,Epidemiol Infect, Vol. 125: 27–34.

- Maftuch, E. Prasetyo, A. Sudianto, M. Rozik, R. Nurdiyani, E. Sanusi, H. Nursyam, F. Fariedah, Marsoedi & Murachman. 2013. Improvement of innate immune responses and defense activity in tiger shrimp (*Penaeus monodon* Fab.) by intramuscular administration of the outer membrane protein *Vibrio alginolyticus*. Springer Plus. 2:432.
- Maillard, V.M., Boardman, G.D., Nyland, J.E., Kuhn, D.D., 2005. Water quality and sludge characterization at raceway-system trout farms. Aquacult. Eng. 33, 271–284.
- Martello, L.B., and R.S. Tjeerdema. 2001. Combined effects of pentachlorophenol and salinity stress on chemiluminescence activity in two species of abalone. Aquat. Toxicol. 51:351–362.
- Martins, A.C.S., J. A. Flores, C. Porto, W. W. Junior & J. M. Monserrat. 2015. Antioxidant and oxidative damage responses in different organs of Pacific white shrimp *Litopenaeus vannamei* (Boone, 1931) reared in a biofloc technology system. Marine and Freshwater Behav and Physiol, Vol. 48, No. 4: 279–288. <http://dx.doi.org/10.1080/10236244>.
- Matsuyama T, Fujiwara A, Nakayasu C, Kamaishi T, Oseko N, Tsutsumi N, 2007. Microarray analysis of gene expression in Japanese flounder *Paralichthys olivaceus* leucocytes during monogenean parasite *Neoheterobothrium hirame* infection. Dis Aquat Org. 75:79-83.
- Menge, B.A., B.A. Daley, P.A. Wheeler, E. Dahlhoff, E. Sandford & P.T. Strub, 1997. Benthic-pelagic links and rocky intertidal communities : Bottom up effect on top-down control. Proc Nat. Acad. Sci. 94:14530-14535.
- Metozzo, V., Marin MG. 2011. Bivalve Immun Responses and Climate Changes: is there a relationship. Invertebrate survival J. 8:70-7.
- May, T and Sol, J., 2000. 14-3-3 proteins form a guidance complex with chloroplast precursor protein in plants. Plant cell 12, 53-64.
- Mejdi, S., E. Noumi., D. Usai., L. A. Sechi., S. Zanetti., A. Bakhrouf., 2008. Distribution of some virulence related-properties of *Vibrio alginolyticus* strains isolated from Mediterranean seawater (Bay of Khenis, Tunisia): investigation of eight *Vibrio cholerae* virulence genes, World J. of Microb. And Biotech. Vol. 24: 2133–2141.
- Mgaya, Y.D. 1995. Synopsis of Biological Data on The European Abalone (Ormer), *Haliotis tuberculata* Linnaeus, 1758 (Gastropoda: Haliotidae). FAO. Rome.
- Miernyk, J.A., 1997. The 70kDa stress-related proteins as molecular chaperones. Trends Plant Science 2:180-187.
- Miller, D. 1989. Heat-shock proteins to the rescue. New Scientist, 7, 47–50.
- Minisini, M.P., S. Kantengwa & B.S. Polla. 1994. DNA damage and stress protein synthesis induced by oxidative stress proceed independently in the human premonocytic line U937. Mutation Research, 315: 169–179.

- Molina, A., Biemar, F., Müller, F., Iyengar, A., Prunet, P., Maclean, N., Martial, J.A., Muller, M., 2000. Cloning and expression analysis of an inducible HSP70 gene from tilapia fish. *FEBS Lett.* 474: 5–10.
- Monari, M., J. Foschi, R. Rosmini, M. G. Marin, & G. P. Serrazanetti. 2011. Heat shock protein 70 responds to physical and chemical stress in *Chamelea gallina*. *Journal of Experimental Marine Biology and Ecology* 397:71-78.
- Morse, A.D. & Morse, D.E. 1984. Recruitment and metamorphosis of *Haliotis* larvae induced by molecules uniquely available at the surface of crustose red algae. *J. Exp. mar. Biol. Ecol.* 75:191-215.
- Mosser, D.D. 1997. Role of the human heat shock protein HSP70 in protection against stress induced apoptosis. *Mol cell biol.* 17: 5317p.
- Mosser, D.D. 2000. The chaperone function of HSP70 is required for protection against stress induced apoptosis. *Mol cell biol.* 20: 7146p.
- Mottet, M.G. 1978. A review of fishery biology of abalones. Wash. Dept. Fish. Tech. Rep. (37) : 81p.
- Mozqueira, A. 1996. 'Site selection for land based abalone farming.' In: Forster, A. (Ed). *Proceedings of the Abalone Aquaculture Workshop*, Albany, Western Australia. Aquaculture Development Council and Fisheries Department of Western Australia. pp 17-21.
- Morris, J.G., & R.E. Black., 1985. Cholera and other vibrioses in the United States. *N Engl J Med*, Vol. 312(6): 343-350.
- Mukono, H.J. 2005. *Toxicologi Lingkungan*. Airlangga University Press. 318 hal.
- Najmudeen, T.M & A.C.C. Victor. 2004. Seed production and juvenile rearing of the tropical abalone *Haliotis varia* Linnaeus 1758. *Aquaculture* 234: 277-292.
- Narjol Gonzalez-Escalona., George M. Blackstone., D.P. Angelo., 2006. Characterisation of a *Vibrio alginolyticus* strain, isolated from Alaskan Oysters, carrying a hemolysin gene similar to the thermostable direct hemolysin-related hemolysin gene (trh) of *Vibrio parahaemolyticus*, *Applied and Environ Microb.*, Vol. 72: 7925-7929.
- Nathan, C. & M.U. Shiloh. 2000. Reactive oxygen and nitrogen intermediates in the relationship between mammalian hosts and microbial pathogens. *Proc. Natl. Acad. Sci. U.S.A.* 97: 8841-8848.
- Navarro, A., M. Faria, C. Barata, & B. Piña. 2011. Transcriptional response of stress genes to metal exposure in zebra mussel larvae and adults. *Environmental Pollution* 159: 100-107.
- Naylor, E. 1965. Biological Effects Of A Heated Effluent In Docks At Swansea, S. Wales. *Journal of Zoology*. Volume 144, (2):253–268.
- Nikapitiya, C., M. De Zoysa, & J. Lee. 2008. Molecular characterization and gene expression analysis of a pattern recognition protein from disk abalone, *Haliotis discus discus*. *Fish & Shellfish Immunology* 25: 638–647.

- Noakes, D.L.G. and Jones, K.M.M. 2016. Cognition Learning and Behavior. In Fish Physiology - Biology of Stress in Fish, Vol. 35 (eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), San Diego, CA: Academic Press.
- Nohl, H. & D. Hegner. 1978. Do mitochondria produce oxygen radicals in vivo? European Journal of Biochemistry. 82: 563–567.
- Nybakken, J.W. 1988. Biologi Laut suatu pendekatan ekologis. Penerbit PT.Gramedia Jakarta. 459 p.
- NCBI, 2017. National Centre for Biotechnology Information. <<https://www.ncbi.nlm.nih.gov/taxonomy/Browser/wwwtax.cgi?id=2017615>.
- Oliver, J.D., and J.B. Kaper.,1997. *Vibrio* species In: Doyle et al. (eds) Food Microbiology Fundamentals and Frontiers. ASM Press, Washington D.C.: 228-264.
- Olsen, M.M., P.W. Kania, R.D. Heinecke, K. Skjoedt, K.J. Rasmussen & K. Buchmann. 2011. Cellular and humoral factors involved in the response of rainbow trout gills to *Ichthyophthirius multifiliis* infections: molecular and immunohistochemical studies. Fish Shellfish Immunol. 30: 859-869.
- Okuda, S.M., 1991. The Instructional Enhancement of the Flexibility and Originality Scores of Divergent Thinking Tests. Applied Cognitive Psychology 5(5): 435 – 441.
- OMOE (Ontario Ministry of the Environment). 1990. In-situ fish bioassay : a grand river MISA component study. Ontario Ministry of the Environment, Toronto, Ontario (unpublished).
- OMOE (Ontario Ministry of the Environment). 1991. Evaluation of acute and chronic toxicity of Ontario sewage plant effluents. A report prepared by Beak Consultants and CH2M W Engineering Limited for the MISA Municipal Section, Water Resources Branch, Toronto, Ontario
- OMOE (Ontario Ministry of the Environment). 1992. Six month monitoring data report - Organic chemical manufacturing sector (October 1, 1989 to March 31, 1990). Water Resources Branch, Municipal/Industrial Strategy for Abatement. (ISBN: 0-7729-8922-2).
- Opresko, D.M. 1980. Review of open literature on effects of chlorine on aquatic organisms. Ecological Effects Program (Electrical Power Research Institute). Oak Ridge Laboratory. Oak Ridge, Tenn.
- Ottaviani, D., I. Bacchiocchi., L. Masini., F. Leoni., A. Carraturo., M. Giammarioli., S. Giovanni., 2001. Antimicrobial susceptibility of potentially pathogenic halophilic vibrios isolated from seafood. Int J Antimicrob Agents, Vol. 18: 135–140.
- Palaksha, K.J., G.W. Shin, Y. R. Kim & T. S. Jung. 2008. Evaluation of nonspecific immune components from the skin mucus of olive flounder (*Paralichthys olivaceus*). Fish and Shellfish Immunology 24(4): 479–488.
- Pan LQ, Hu FW, Jing FT, Liu HJ. 2008. The effect of different acclimation temperatures on the prophenoloxidase system and other defence

parameters in *Litopenaeus vannamei*. *Fish & Shellfish Immunology*.25:137-142.

- Pankhurst, N. W. 2016. Reproduction and Development. In *Fish Physiology - Biology of Stress in Fish*, Vol. 35 (eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), San Diego, CA: Academic Press.
- Park, K., J. Sick Lee, J.C. Kang, J. W. Kimand & I.S. Kwak. 2015. Cascading effects from survival to physiological activities, and gene expression of heat shock protein 90 on the abalone *Haliotis discus hannai* responding to continuous thermal stress. *Fish & Shellfish Immunol.* 42: 233-240.
- Parsell, D.A. and Lindquist, S. 1993. The function of heat-shock proteins in stress tolerance: degradation and reactivation of damaged proteins. *Annual Rev. of Genetics*, 27: 437-496. doi:10.1146/annurev.ge.27.120193.002253.
- Patino, R., Redding, J. M. and Schreck, C. B. 1987. Interrenal secretion of corticosteroids and plasma cortisol and cortisone concentrations after acute stress and during seawater acclimation in juvenile coho salmon (*Oncorhynchus kisutch*). *Gen. Comp. Endocrinol.* 68:431–439.
- Pedrajas, J.R., J. López-Barea & J. Peinado. 1996. Dieldrin induces peroxisomal enzymes in fish (*Sparus aurata*) liver. *Comp. Biochem. and Physiology*, 115C(2): 125–131.
- Peck, L.S. & L.W. Bullough, 1993. Growth and population structure in the infaunal bivalve *Yoldia eightsi* (Couthouy) in relation to iceberg activity at Signy Island, Antarctica. *Mar. Biol.* (in press).
- Perez, D.G. & C.S. Fontanetti. 2011. Hemocytical responses to environmental stress in invertebrates: a review. *Environ Monit Assess* 177:437-447.
- Peters, L.D., C. Porte, J. Albaigés & D.R. Livingstone. 1994. 7-Ethoxyresorufin O-deethylase (EROD) and antioxidant enzyme activities in larvae of sardine (*Sardina pilchardus*) from the North Coast of Spain. *Marine Pollution Bulletin*, 28: 299–304.
- Piano, A., S. Franzellitti, F. Tinti, & E. Fabbri. 2005. Sequencing and expression pattern of inducible heat shock gene products in the European flat oyster, *Ostrea edulis*. *Gene* 361:119–126.
- Pipe, R.K. & Coles, J.A. 1995. Environmental contaminants influencing immune function in marine bivalve mollusks. *Fish and Shellfish Immunology*. 5: 581-595.
- Pratt, W.B., 2001. HSP90 binding immunophilins in plants : the protein movers. *Trends plants. Sci Plants*.6: 54-58.
- Qian, Z., X. Liu, L. Wang, X. Wang, Y. Li, J. Xiang, & P. Wang. 2012. Gene expression profile of four heat shock proteins in response to different acute stresses in shrimp, *Litopenaeus vannamei*. *Comparative Biochemistry and Physiology. Part C* 156: 211-220.
- Raffaelli, D. & S. Hawkins. 1996. *Intertidal Ecology*. Chapman and Hall. London.

- Rahmawati, R., Rusdi, I., dan Susanto, B. 2009. Keragaan pertumbuhan benih abalone *Haliotis squamata* Reeve, 1846) Hasil keturunan F1. Seminar Moluska II. Institut Pertanian Bogor. 13 Hal.
- Rand G.M, & S. R. Petrocelli. 1985. Fundamentals of aquatic toxicology. Hemisphere. Publishing. U.S.A pp. 1-28.
- Ranjan, P., J.B. Bowzard, J.w. Schwerzmann, V. Jeisy-Scott, T. Fujita & S. Sambhara. 2009. Cytoplasmic nucleic acid sensors in antiviral immunity. *Trens Mol Med* 15:359-368.
- Richards, E.H., E. Hickey, L. Weber & J.R. Master. 1996. Effect of overexpression of the small heat shock protein HSP27 on the heat and drug sensitivities of human testis tumor cells. *Cancer Research*,56: 2446–2451.
- Richter,K and Buchner,J., 2001. HSP90: chaperonin signal transduction. *J.Cell. Physiol.* 188: 281-290.
- Roberts, B. W., Didier, W., Rai, S., Johnson, N. S., Libants, S., Yun, S.-S., 2014.Regulation of a putative corticosteroid, 17,21-dihydroxypregn-4-ene,3,20-one, in sealamprey, *Petromyzon marinus*. *Gen. Comp. Endocrinol.* 196: 17–25.
- Rodnick, K. J. and Planas, J. V. 2016. The Stress and Stress Mitigation Effects of Exercise:Cardiovascular, Metabolic, and Skeletal Muscle Adjustments. In *Fish Physiology - Biology of Stress in Fish*, Vol. 35 (eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), SanDiego, CA: Academic Press.
- Rodriguez-Ariza A, Peinado J, Pueyo C, & Lpez-Barea J. 1993. Biochemical indicators of oxidative stress in fish from polluted littoral areas. *Can J Fish Aquat Sci* 50: 2568-2573.
- Roffi Grandiosa,R., F. Merien, K. Pillay, &A. Alfaro. 2016. Innovative application of classic and newer techniques for the characterization of hemocyte in the New Zealand blackfooted abalone (*Haliotis irris*). *Fish & Shellfish Immunol.* 48: 175-184.
- Rusdi, I., B. Susanto dan R. Rahmawati. 2010. Penerapan berbagai jenis pakan makroalga terhadap perkembangan gonad abalone *H. squamata*. *Prosiding Seminar Nasional Perikanan Indonesia, Sekolah Tinggi Perikanan, Jakarta.* 154-160p.
- Rusdi, I., B. Susanto, R. Rahmawati dan I.N.A Giri. 2011. Petunjuk Teknis Perbenihan Abalone, *Haliotis squamata*. Balai Besar Penelitian dan Pengembangan Kelautan dan Perikanan. Kementerian Kelautan dan Perikanan. 34p.
- Russo,J.,Brehelin,M. & Cartoon,Y. 2001.Hemocyte changes in resistant and susceptible strains of *D. melanogaster* caused by virulent and avirulent strains of the parasitic wasp *leptopilina boulardi*.*J. of Insect Physiol.*47:167-172.
- Sabir, M., M.M. Ennaji., B. Bouchrif., N. Cohen., 2012.Characterization of *Vibrio alginolyticus*Trh positive from mediterranean environment of Tamouda Bay (Morocco),*World Environment*, Vol. 2: 76-80.

- Sadoul, B. and Vijayan, M. M. 2016. Stress and Growth. In Fish Physiology - Biology of Stress in Fish, Vol. 35 (eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), San Diego, CA: Academic Press.
- Samali, A. & T.G. Cotter .1996. Heat shock proteins increase resistance to apoptosis. *Experimental Cell Research*, 223(1): 163–170.
- Scarfe, A.D., C.S. Lee & P.J. O'Bryen. 2006. Aquaculture biosecurity prevention, control and eradication of aquatic animal disease. World aquaculture society. Blackwell Publishing. 182p.
- Scheffel, J.M., K. Ashkar., C. Boeri., H. Monteil., 2006. Phlegmon au doigt à *Vibrio alginolyticus* consécutif à une blessure chez un patient de retour du Maroc, Journées Francophones de Microbiologie des Milieux Hydriques, pp. 23-24.
- Setyabudi, H., G. Garnawansyah, A. Supriyanto, M. Imanuddin & A. Yana. 2013. Petunjuk Teknis Produksi Benih Abalone Hybrid (Ninamata). Balai Budidaya Laut Lombok, Ds. Gili Genting Sekotong Barat, Lombok Barat.
- Shikongo, Nambabi, M.N.N.N., N.P. Petrus., M. B. Schneider., 2012. The role, isolation and identification of *Vibrio* species on the quality and safety of seafood, *Biotech and Molecular Biol Rev.*, Vol. 7 (2): 16-30.
- Shruti, C. & S. Haldar, 2012. *Vibrio* Related Diseases in Aquaculture and Development of Rapid and Accurate Identification Methods. *J. of Marine Science: Research & Development*. ISSN: 2155-9910.
- Sharrer, M.J., Tal, Y., Ferrier, D., Hankins, J.A., Summerfelt, S.T., 2007. Membrane biological reactor treatment of a saline backwash flow from a recirculating aquaculture system. *Aquacult. Eng.* 36: 159–176.
- Shuhong W, Yilei W, Zhaoxia Z, Jack R, Zhaohong W, Zhihua Z, Ziping Z (2004) Response of innate immune factors in abalone *Haliotis diversicolor supertexta* to pathogenic or nonpathogenic infection. *Journal of Shellfish Research* 23:1173-1177.
- Sindermann, C.J., 2006. Coastal Pollution Effects on Living Resources and Humans. CRC Press Taylor & Francis Group. 280p.
- Smit, B., Wandel, J., 2006. Adaptation, adaptive capacity and vulnerability. *Global Environmental Change* 16 (3): 282–292.
- Snyder MJ, Girvetz E, Mulder EP. 2001. Induction of marine mollusc stress proteins by chemical or physical stress. *Arch. Environ. Contam. Toxicol.* 41: 22-29.
- Soderhall, K., 2010. Invertebrate Immunity. *Advances in Experimental Medicine and Biology* 708. Springer. 360 p.
- Soldatov, A.A., Gostiukhina, & O.L., Golovina IV. 2007. Antioxidant enzyme complex of tissue of the bivalve *Mytilus galloprovincialis* Lam. Under normal and oxidative stress condition. *a Review : Biokhim Mikrobiol* 43: 621-628.
- Song, L., L. Wang, L. Qiu, & H. Zhang. 2010. Bivalve Immunity in : *Invertebrate Immunity*, edited by Kenneth Soderhall. pp 44-65.

- Song, Y.L. & Hsieh, Y.T. 1994. Immunostimulation of Tiger Shrimps (*Penaeus monodon*) hemocyte for generation of microbicidal substances : analysis of reactive oxygen species. *Dev Comp Immunol* 18:201-9.
- Spriggs, K.A., Bushell, M. & Willis, A.E. 2010. Translational regulation of gene expression during conditions of cell stress. *Molecular Cell*, 40: 228-237.
- Sritunyalucksana, K. & Söderhäll, K. 2000. The proPo and clotting system in crustaceans. *Aquaculture*, 191:53-69.
- Squadrito, G.L., E.M. Postlethwait, and S. Matalon, 2010. Elucidating mechanisms of chlorine toxicity : reaction kinetics, thermodynamics, and physiological implications. *Am. J. Physiol Lung cell mol. Physiol* 299: 289-300.
- Stevens, M., 2003. Cultured Abalone (*Haliotis* spp.). *Seafood Watch, Seafood Report*. Final Report. Fisheries Research Analyst.
- Sung, D.Y., 2001. Plant HSP70 Molecular chaperones: protein structure gene family, expression and function. *Physiol Plant* 113: 443-451.
- Takei, Y. and Hwang, P. P. 2016. Homeostatic Responses to Osmotic Stress. In *Fish Physiology - Biology of Stress in Fish*, Vol. 35 (eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), San Diego, CA: Academic Press.
- Tassanakajon, A., Somboonwivat, K., Supungul, P., & Tang, S. 2013. Discovery of immune molecule and their crucial functions in shrimp immunity, *Fish and Shellfish Immunology*, 34: 954-967.
- Thiele, J. 1929. *Hanbuch der systematischen weich tierkunde, Erster Teil loricata / Gastropoda. I. Prosobranchia (Vonderkiemer)* Stuttgart, Gustav Fischer Verlag. 376 p.
- Thornton, D.J. & J. K. Sheehan. 2004. From mucins to mucus: toward a more coherent understanding of this essential barrier. *Proceedings of American Thoracic Society* 1(1): 54-61.
- Timmons, M.B., Ebeling, J.M., Wheaton, F.W., Summerfelt, S.T., Vinci, B.J., 2002. *Recirculating Aquaculture Systems* 2nd Ed. Cayuga Aqua Ventures, Ithaca, New York, USA.
- Truscott, R. & White, K.N. 1990. The influence of metal and temperature stress on the immune system of crabs. *Functional Ecology*. 4: 455-461.
- U.S. Environmental Protection Agency. 1990. Staff Report: numeric chlorine and ammonia standards. *Off Water: Off. Water Res. Stand., Criteria/Stand. Div.* Washington, DC.
- Valko, M., D. Leibfritz, J. Moncol, Mark T.D. Cronin, M. Mazur, & J. Telser. 2005. Free radicals and antioxidants in normal physiological functions and human disease. *The International Journal of Biochemistry & Cell Biology* 39: 44-84.
- Vandeppeer, M., R. van Barneveld & A. Fleming. 2003. *Abalone Aquaculture Subprogram: Adaptation of nutritional technologies developed for greenlip*

abalone for the production of suitable manufactured feeds for blacklip abalone. SARDI.38p.

- Van der Oost R, Beyer J, Vermeulen NPE., 2003. Fish bioaccumulation and biomarkers in environmental risk assessment: a review. *Environ Toxicol Pharmacol*; 13:57-149.
- Vardas, K., Iliia, S., Serteaki, A., Charmandari, E., Briassouli, E., Goukos, D., Apostoulo, D., Pssara, K., Botoula, E., Tsagarakis, S. 2017. Increased glucocorticoid receptor expression in sepsis is related to heat shock protein, cytokine, and cortisol, and is associated with increased mortality. *Int. care Med Experimental*. 5:10.
- Vosloo, D., L. van Rensburg, & A. Vosloo. 2013. Oxidative stress in abalone: The role of temperature, oxygen and L-proline supplementation. *Aquaculture* 416–417: 265–271.
- Wahid, A., S. Gelani, M. Ashraf, M.R. Foolad. 2007. Heat tolerance in plants: An overview. *Environ and Experimen Botany* 61: 199–223.
- Wan, Q., I. Whanga & J. Lee. 2012. Molecular and functional characterization of HdHSP20: A biomarker of environmental stresses in disk abalone *Haliotis discus discus*. *Fish & Shellfish Immunology* 33: 48-59.
- Wang, S., Wang, Y., Zhang, Z., Ralph, J., Weng, Z., Zou, Z., Ziping, Z., 2004. Response of innate immune factors in abalone *Haliotis diversicolor supertexta* to pathogenic or non-pathogenic infection. *J. Shellfish Res.* 23: 1173–1177.
- Wang, K.J., H.L. Ren, D.D. Xu, L. Cai & M. Yang. 2008. Identification of the up-regulated expression genes in hemocytes of variously colored abalone (*Haliotis diversicolor* Reeve, 1846) challenged with bacteria. *Develop and Compar Immun* 32: 1326-1347.
- Wang, N., I. Wang & J.S. Lee. 2011. Molecular characterization and expression analysis of heat shock protein 90 gene disk abalone (*Haliotis discus*). *Mol Biol Rep* 38: 3055-3060.
- Wang, L., F. Yue, X. Song & L. Song. 2015. Maternal immune transfer in mollusk. *Develop and Compar Immun* 48: 354–359.
- Webb, M. A. H., Allert, J. A., Kappenman, K. M., Marcos, J., Feist, G. W., Schreck, C. B. 2007. Identification of plasma glucocorticoids in pallid sturgeon in response to stress. *Gen. Comp. Endocrinol.* 154: 98–104.
- Wetzel, R.G., 2001. *Limnology: Lake and River Ecosystems*, 3rd edition. Academic Press, San Diego, California, US.
- Winston, G.W., M.N. Moore, I. Straatsburg & M.A. Kirchin. 1991. Decreased stability of digestive gland lysosomes from the common mussel *Mytilus edulis* L. by in vitro generation of oxygen-free radicals. *Archives of Envir Contam and Toxic*, 21: 401–408.
- Wootton, J.T. 1991. Direct and indirect effect on nutrients on intertidal community structure: Variable consequences of seabird guano. *J. Exp. Mar. Biol. Ecol.* 151:139-153.

- Wu, C., Zhang W, Mai K, Xu W, Zhong X. 2011. Effects of dietary zinc on gene expression of antioxidant enzymes and heat shock proteins in hepatopancreas of abalone *Haliotis discus hannai*. *Comp Biochem Physiol C Toxicol Pharmacol*: 154:1-6.
- Wu,C., J. Wang, W. Xu, W. Zhang, & K. Mai. 2014. Dietary ascorbic acid modulates the expression profile of stress protein genes in hepatopancreas of adult Pacific abalone *Haliotis discus hannai* Ino. *Fish & Shellfish Immunology* 41: 120-125.
- Wu,X., J. Tana, M. Cai, & X. Liu. 2014. Molecular cloning, characterization, and expression analysis of a heat shock protein (HSP) 70 gene from *Paphia undulate*. *Gene* 543: 275–285.
- Wu, Y.S.,T.Yu. Tseng, F.H. Nan, 2016. Beta-1,3-1,6-glucan modulate the non-specific immune response to enhance the survival in the *Vibrio alginolyticus* infection of Taiwan abalone (*Haliotis diversicolor supertexta*). *Fish & Shellfish Immunology* 54: 556-563.
- Xu, S.L., D.L. Wang, C.Y. Jia, S. Jin, C.L. Wang & X. Zou. 2013. Effect of *Vibrioalginolyticus* infection on immune-related enzyme activities and ultrastructure of *Charybdis japonica* gills. *Aquaculture* 396-399: 82-88.
- Xue,Q.G.,Renault,T.,Chilmonezyk,S. 2001. Flow Cytometry Assesment of hemocyte sub-population in the European Flat Oyster, *Ostrea edulis*, hemolymph. *Fish Shellfish Immunology* 11: 557-67.
- Yada, T. and Tort, L. 2016. Stress and Disease Resistance: Immune System andImmunoendocrine Interactions. In *Fish Physiology - Biology of Stress in Fish*, Vol. 35(eds. C. B. Schreck, L. Tort, A. P. Farrell and C. J. Brauner), San Diego, CA: AcademicPress.
- Yang, J.,Wang,L., Zhang, H.,Qiu,L., Wang,H., & Song,L. 2011. C-Type lectin in *Chlamys farreri* (CfLec-1) mediating immune recognition and opsonization. *Plos One* 6(2): 17-89.
- Yang, C.Y., M.T. Sierp, C.A. Abbott,Yan Li,J.G.Qin. 2016. Responses to thermal and salinity stress in wild and farmed Pacific oysters *Crassostrea gigas*.*Compar Biochem and Physiol, Part A*. 201: 22–29.
- Young,J.C.2001. HSP90 a specialized but essential protein folding tool. *J.Cell Biology* 154: 267-273.
- Zhang,Z.,2003.Characterisation of plant homolog of Hop of a co-chaperone of HSP90.*Plant Physiol*.131: 525-535.
- Zhou, J., Wei-Na W., Wen-Yin He, Yin Z., Lei W., Yu X., Yuan L., An-Li W. 2010. Expression of HSP60 and HSP70 in white shrimp, *Litopenaeus vannamei* response to bacterial challenge. *Jour of Invert Pathol* 103: 170–178.