

## DAFTAR PUSTAKA

- Aceto, J., Nourizadeh-Lillabadi, R., Marée, R., Dardenne, N., Jeanray, N., Wehenkel, L., Aleström, P., Van Loon, J. J. W. A., & Muller, M. (2015). Zebrafish bone and general physiology are differently affected by hormones or changes in gravity. *PLoS ONE*, 10(6), 1–42. <https://doi.org/10.1371/journal.pone.0126928>
- Al-Haddad, A., & Aziz, Z. A. C. A. (2016). Bioceramic-Based Root Canal Sealers: A Review. *International Journal of Biomaterials*, 2016. <https://doi.org/10.1155/2016/9753210>
- Amarnath, G., Muddugangadhar, B., Tripathi, S., Dikshit, S., & MS, D. (2011). Biomaterials for Dental Implants: An Overview. *International Journal of Oral Implantology & Clinical Research*, 2(1), 13–24. <https://doi.org/10.5005/jp-journals-10012-1030>
- Ana, I. D. (2019). Bone Substituting Materials in Dental Implantology. *Bone Management in Dental Implantology*. <https://doi.org/10.1007/978-3-319-78951-4>
- Ananth, H., Kundapur, V., Mohammed, H. S., Anand, M., Amarnath, G. S., & Mankar, S. (2015). A review on biomaterials in dental implantology. *International Journal of Biomedical Science*, 11(3), 113–120.
- Anil, S., Venkatesan, J., Shim, M. S., Chalisserry, E. P., & Kim, S. K. (2017). Bone response to calcium phosphate coatings for dental implants. In *Bone Response to Dental Implant Materials*. Elsevier Ltd. <https://doi.org/10.1016/B978-0-08-100287-2.00004-5>
- Anjaneyulu, U., Priyadarshini, B., Nirmala Grace, A., & Vijayalakshmi, U. (2017). Fabrication and characterization of Ag doped hydroxyapatite-polyvinyl alcohol composite nanofibers and its in vitro biological evaluations for bone tissue engineering applications. *Journal of Sol-Gel Science and Technology*, 81(3), 750–761. <https://doi.org/10.1007/s10971-016-4243-5>
- Ardhiyanto, H. B. (2016). Peran hidroksiapatit sebagai material. *Jurnal Unsyiah*, 13–15.
- Aspatwar, A., Hammaren, M. M., Parikka, M., & Parkkila, S. (2019). Rapid evaluation of toxicity of chemical compounds using zebrafish embryos. *Journal of Visualized Experiments*, 2019(150), 1–7. <https://doi.org/10.3791/59315>
- Atsuta, I., Ayukawa, Y., Kondo, R., Oshiro, W., Matsuura, Y., Furuhashi, A., Tsukiyama, Y., & Koyano, K. (2016). Soft tissue sealing around dental implants based on histological interpretation. *Journal of Prosthodontic Research*, 60(1), 3–11. <https://doi.org/10.1016/j.jpor.2015.07.001>
- Brennan, S. A., Fhoghlú, C. N., DeVitt, B. M., O'Mahony, F. J., Brabazon, D., &

- Walsh, A. (2015). Instructional review: General orthopaedics silver nanoparticles and their orthopaedic applications. *Bone and Joint Journal*, 97-B(5), 582–589. <https://doi.org/10.1302/0301-620X.97B5.33336>
- Bronsert, M. R., Henderson, W. G., Valuck, R., Hosokawa, P., & Hammermeister, K. (2008). 基因的改变 NIH Public Access. *Bone*, 23(1), 1–7. <https://doi.org/10.1021/nn700048y>
- Brunello, G., Panda, S., Schiavon, L., Sivoilella, S., Biasetto, L., & Fabbro, M. Del. (2020). The impact of bioceramic scaffolds on bone regeneration in preclinical in vivo studies: A systematic review. *Materials*, 13(7), 1–26. <https://doi.org/10.3390/ma13071500>
- Burtscher, D., & Dalla Torre, D. (2021). Dental implant procedures in immunosuppressed organ transplant patients: a systematic review. *International Journal of Oral and Maxillofacial Surgery*, 4–11. <https://doi.org/10.1016/j.ijom.2021.06.008>
- Carnovali, M., Banfi, G., & Mariotti, M. (2019). Zebrafish Models of Human Skeletal Disorders: Embryo and Adult Swimming Together. *BioMed Research International*, 2019. <https://doi.org/10.1155/2019/1253710>
- Chai, W. L., Razali, M., Moharamzadeh, K., & Zafar, M. S. (2020). The hard and soft tissue interfaces with dental implants. In *Dental Implants*. Elsevier Ltd. <https://doi.org/10.1016/b978-0-12-819586-4.00010-x>
- Cohen, S. P., LaChappelle, A. R., Walker, B. S., & Lassiter, C. S. (2014). Modulation of estrogen causes disruption of craniofacial chondrogenesis in *Danio rerio*. *Aquatic Toxicology*, 152, 113–120. <https://doi.org/10.1016/j.aquatox.2014.03.028>
- de Medeiros, A. M. Z., Khan, L. U., da Silva, G. H., Ospina, C. A., Alves, O. L., de Castro, V. L., & Martinez, D. S. T. (2021). Graphene oxide-silver nanoparticle hybrid material: an integrated nanosafety study in zebrafish embryos. *Ecotoxicology and Environmental Safety*, 209. <https://doi.org/10.1016/j.ecoenv.2020.111776>
- Dos Santos, I. M. G., Barbosa, L. S. N. S., Resende, C. X., De Almeida Soares, G., & Dos Santos, E. A. (2015). Crystallographic aspects regarding the insertion of ag+ ions into a hydroxyapatite structure. *Materials Research*, 18(4), 881–890. <https://doi.org/10.1590/1516-1439.012515>
- Duan, J., Yu, Y., Shi, H., Tian, L., Guo, C., Huang, P., Zhou, X., Peng, S., & Sun, Z. (2013). Toxic Effects of Silica Nanoparticles on Zebrafish Embryos and Larvae. *PLoS ONE*, 8(9), 4–12. <https://doi.org/10.1371/journal.pone.0074606>
- Duraccio, D., Mussano, F., & Faga, M. G. (2015). Biomaterials for dental implants: current and future trends. *Journal of Materials Science*, 50(14), 4779–4812. <https://doi.org/10.1007/s10853-015-9056-3>
- Elabd, S., Jabeen, N. A., Gerber, V., Peravali, R., Bourdon, J. C., Kancherla, S.,

- Vallone, D., & Blattner, C. (2019). Delay in development and behavioural abnormalities in the absence of p53 in zebrafish. *PLoS ONE*, 14(7), 1–18. <https://doi.org/10.1371/journal.pone.0220069>
- Eraković, S., Janković, A., Matić, I. Z., Juranić, Z. D., Vukašinović-Sekulić, M., Stevanović, T., & Miskovic-Stankovic, V. (2013). Investigation of silver impact on hydroxyapatite/lignin coatings electrodeposited on titanium. *Materials Chemistry and Physics*, 142(2–3), 521–530. <https://doi.org/10.1016/j.matchemphys.2013.07.047>
- Filipović, U., Dahmane, R. G., Ghannouchi, S., Zore, A., & Bohinc, K. (2020). Bacterial adhesion on orthopedic implants. *Advances in Colloid and Interface Science*, 283, 1–12. <https://doi.org/10.1016/j.cis.2020.102228>
- Fitriani, C., ... A. W.-D. J. M. K. G., & 2019, undefined. (2019). Biokompatibilitas Material Titanium Implan Gigi. *Journal.Umy.Ac.Id*, 8(November), 53–58. <https://journal.umy.ac.id/index.php/di/article/view/7834>
- Fu, W., Zhang, J., Xu, W., He, S., Long, M., Liao, Q., Liu, J., Peng, L., Liu, W., & Xiao, Y. (2021). Characteristics of hatching enzymes and egg envelope in cross progenies from crucian carp (*Carassius auratus* var.) and zebrafish (*Barchydanio rerio* var.). *Reproduction and Breeding*, 1(2), 81–88. <https://doi.org/10.1016/j.repbre.2021.04.001>
- Futrega, K., Mosaad, E., Chambers, K., Lott, W. B., Clements, J., & Doran, M. R. (2018). Bone marrow-derived stem/stromal cells (BMSC) 3D microtissues cultured in BMP-2 supplemented osteogenic induction medium are prone to adipogenesis. *Cell and Tissue Research*, 374(3), 541–553. <https://doi.org/10.1007/s00441-018-2894-y>
- Gherde, C., Dhattrak, P., Nimbalkar, S., & Joshi, S. (2020). Materials Today : Proceedings A comprehensive review of factors affecting fatigue life of dental implants. *Materials Today: Proceedings*, xxxx. <https://doi.org/10.1016/j.matpr.2020.08.414>
- Gierten, J., Pylytiuk, C., Hammouda, O. T., Schock, C., Stegmaier, J., Wittbrodt, J., Gehrig, J., & Loosli, F. (2020). Automated high-throughput heartbeat quantification in medaka and zebrafish embryos under physiological conditions. *Scientific Reports*, 10(1), 1–12. <https://doi.org/10.1038/s41598-020-58563-w>
- Granito, R. N., Renno, A. C. M., Yamamura, H., de Almeida, M. C., Ruiz, P. L. M., & Ribeiro, D. A. (2018). Hydroxyapatite from fish for bone tissue engineering: A promising approach. *International Journal of Molecular and Cellular Medicine*, 7(2), 80–90. <https://doi.org/10.22088/IJMCM.BUMS.7.2.80>
- Grigoraviciute-Puroniene, I., Stankeviciute, Z., Ishikawa, K., & Kareiva, A. (2020). Formation of calcium hydroxyapatite with high concentration of homogeneously distributed silver. *Microporous and Mesoporous Materials*, 293(October 2019), 109806.

<https://doi.org/10.1016/j.micromeso.2019.109806>

Guidelines, O., The, F. O. R., & Of, T. (2013). OECD guidelines for testing of chemicals. *Dermatotoxicology*, July, 509–511. <https://doi.org/10.3109/9781841848570-66>

Gunawan, Dan, A. A., & Hidayat, A. N. (2018). Fabrikasi Keramik Hidroksiapatit Berpori Dengan Menggunakan Space Holder Alami. In *Prosiding SNTTM XVII*.

Hanawa, T. (2018). Transition of surface modification of titanium for medical and dental use. In *Titanium in Medical and Dental Applications*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-812456-7.00005-6>

Henggu, K. U., Ibrahim, B., & Suptijah, P. (2019). Hidroksiapatit dari cangkang sotong sebagai sediaan biomaterial perancah tulang. *Jphpi*, 22, 1–13.

Henn, K., & Braunbeck, T. (2011). Dechoriation as a tool to improve the fish embryo toxicity test (FET) with the zebrafish (*Danio rerio*). *Comparative Biochemistry and Physiology - C Toxicology and Pharmacology*, 153(1), 91–98. <https://doi.org/10.1016/j.cbpc.2010.09.003>

Hosen, M. J., Vanakker, O. M., Willaert, A., Huysseune, A., Coucke, P., & Paepe, A. De. (2013). Zebrafish models for ectopic mineralization disorders: Practical issues from morpholino design to post-injection observations. *Frontiers in Genetics*, 4(MAY). <https://doi.org/10.3389/fgene.2013.00074>

Huang, D., Li, H., He, Q., Yuan, W., Chen, Z., & Yang, H. (2018). Developmental Toxicity of Diethylnitrosamine in Zebrafish Embryos/Juveniles Related to Excessive Oxidative Stress. *Water, Air, and Soil Pollution*, 229(3). <https://doi.org/10.1007/s11270-018-3739-8>

Januariyasa, I. K., Ana, I. D., & Yusuf, Y. (2020). Nanofibrous poly(vinyl alcohol)/chitosan contained carbonated hydroxyapatite nanoparticles scaffold for bone tissue engineering. *Materials Science and Engineering C*, 107(October 2019), 110347. <https://doi.org/10.1016/j.msec.2019.110347>

Javed, F., Akram, Z., Khan, J., & Zafar, M. S. (2020). Growth factors and guided bone regeneration. In *Dental Implants*. Elsevier Ltd. <https://doi.org/10.1016/b978-0-12-819586-4.00008-1>

Jeevanandam, J., Chan, Y. S., & Danquah, M. K. (2019). Zebrafish as a Model Organism to Study Nanomaterial Toxicity. *Emerging Science Journal*, 3(3), 195–208. <https://doi.org/10.1016/j.ymeth.2013.04.012>

Khotimah, H., & Ali, M. M. (2020). Ikan Zebra (*Danio rerio*) sebagai Binatang Model pada Penelitian Biomedis dan Cara Pemeliharaannya. *Sanus Medical Journal*.

Kim, K.-T., & Tanguay, R. L. (2014). The role of chorion on toxicity of silver nanoparticles in the embryonic zebrafish assay. *Environmental Health and*

*Toxicology*, 29, e2014021. <https://doi.org/10.5620/eh.t.e2014021>

- Kimmel, C. B., Ballard, W. W., Kimmel, S. R., Ullmann, B., & Schilling, T. F. (1995). Zebrafish as an alternative vertebrate model for investigating developmental toxicity—the triadimefon example. *International Journal of Molecular Sciences*, 18(4), 97403–125. <https://doi.org/10.3390/ijms18040817>
- Lemons, J. E., Misch-Dietsh, F., & McCracken, M. S. (2015). Biomaterials for Dental Implants. In *Dental Implant Prosthetics* (Second Edi). Elsevier Inc. <https://doi.org/10.1016/B978-0-323-07845-0.00004-X>
- Li, J., Jansen, J. A., Walboomers, X. F., & van den Beucken, J. J. (2020). Mechanical aspects of dental implants and osseointegration: A narrative review. *Journal of the Mechanical Behavior of Biomedical Materials*, 103(November 2018), 103574. <https://doi.org/10.1016/j.jmbbm.2019.103574>
- Lin, K., & Chang, J. (2015). Structure and properties of hydroxyapatite for biomedical applications. In *Hydroxyapatite (Hap) for Biomedical Applications* (Vol. 4214, Issue 8). Elsevier Ltd. <https://doi.org/10.1016/b978-1-78242-033-0.00001-8>
- Luo, S., Yang, Y., Chen, J., Zhong, Z., Huang, H., Zhang, J., & Cui, L. (2016). Tanshinol stimulates bone formation and attenuates dexamethasone-induced inhibition of osteogenesis in larval zebrafish. *Journal of Orthopaedic Translation*, 4, 35–45. <https://doi.org/10.1016/j.jot.2015.07.002>
- Marvin, J. C., Gallegos, S. I., Parsaei, S., & Rodrigues, D. C. (2019). In Vitro Evaluation of Cell Compatibility of Dental Cements Used with Titanium Implant Components. *Journal of Prosthodontics*, 28(2), e705–e712. <https://doi.org/10.1111/jopr.12784>
- Morgan, E. F., Unnikrisnan, G. U., & Hussein, A. I. (2018). Bone Mechanical Properties in Healthy and Diseased States. *Annual Review of Biomedical Engineering*, 20, 119–143. <https://doi.org/10.1146/annurev-bioeng-062117-121139>
- Mork, L., Crump, G., & Angeles, L. (2016). Zebrafish Craniofacial Development: A Window into Early Patterning. *Curr Top Dev Biol.*, 115, 1–30. <https://doi.org/10.1016/bs.ctdb.2015.07.001.Zebrafish>
- Muraina, I. A., Maret, W., Bury, N. R., & Hogstrand, C. (2020). Hatching gland development and hatching in zebrafish embryos: A role for zinc and its transporters Zip10 and Znt1a. *Biochemical and Biophysical Research Communications*, 528(4), 698–705. <https://doi.org/10.1016/j.bbrc.2020.05.131>
- Nikita, E. (2017). The Human Skeleton. In *Osteoarchaeology*. <https://doi.org/10.1016/b978-0-12-804021-8.00001-2>
- Ogle, O. E. (2015). Implant Surface Material, Design, and Osseointegration. *Dental Clinics of North America*, 59(2), 505–520.



<https://doi.org/10.1016/j.cden.2014.12.003>

- Pajor, K., Pajchel, L., & Kolmas, J. (2019). Hydroxyapatite and fluorapatite in conservative dentistry and oral implantology-a review. *Materials*, 12(7). <https://doi.org/10.3390/ma12172683>
- Park, H., Yun, B. H., Lim, W., & Song, G. (2021). Dinitramine induces cardiotoxicity and morphological alterations on zebrafish embryo development. *Aquatic Toxicology*, 240(April), 105982. <https://doi.org/10.1016/j.aquatox.2021.105982>
- Parng, C., Seng, W. L., Semino, C., & McGrath, P. (2002). Zebrafish: a preclinical model for drug screening. *Assay and Drug Development Technologies*, 1(1 Pt 1), 41–48. <https://doi.org/10.1089/154065802761001293>
- Paterson, T. E., Shi, R., Tian, J., Harrison, C. J., De Sousa Mendes, M., Hatton, P. V., Li, Z., & Ortega, I. (2020). Electrospun scaffolds containing silver-doped hydroxyapatite with antimicrobial properties for applications in orthopedic and dental bone surgery. *Journal of Functional Biomaterials*, 11(3), 1–17. <https://doi.org/10.3390/jfb11030058>
- Pathak, N. H., & Barresi, M. J. F. (2019). Zebrafish as a model to understand vertebrate development. In *The Zebrafish in Biomedical Research: Biology, Husbandry, Diseases, and Research Applications*. Elsevier. <https://doi.org/10.1016/B978-0-12-812431-4.00045-2>
- Pereira, A. C., Gomes, T., Ferreira Machado, M. R., & Rocha, T. L. (2019). The zebrafish embryotoxicity test (ZET) for nanotoxicity assessment: from morphological to molecular approach. *Environmental Pollution*, 252, 1841–1853. <https://doi.org/10.1016/j.envpol.2019.06.100>
- Pratama, S. F., Ana, I. D., & Retnoaji, B. (2021). The Effect of Carbonate Hydroxyapatite (CHA) Dental Implant Material on the Early Development of Zebrafish Embryos (*Danio rerio*) . *Proceedings of the 3rd KOBICONGRESS, International and National Conferences (KOBICINC 2020)*, 14(Kobicinc 2020), 307–312. <https://doi.org/10.2991/absr.k.210621.052>
- Pu, S. Y., Hamid, N., Ren, Y. W., & Pei, D. S. (2020). Effects of phthalate acid esters on zebrafish larvae: Development and skeletal morphogenesis. *Chemosphere*, 246, 125808. <https://doi.org/10.1016/j.chemosphere.2019.125808>
- Pujari-Palmer, S., Lu, X., & Ott, M. K. (2017). The influence of hydroxyapatite nanoparticle morphology on embryonic development in a zebrafish exposure model. *Nanomaterials*, 7(4). <https://doi.org/10.3390/nano7040089>
- Qiang, L., Arabeyyat, Z. H., Xin, Q., Paunov, V. N., Dale, I. J. F., Mills, R. I. L., Rotchell, J. M., & Cheng, J. (2020). Silver nanoparticles in Zebrafish (*Danio rerio*) embryos: Uptake, growth and molecular responses. *International Journal of Molecular Sciences*, 21(5), 1–14.

<https://doi.org/10.3390/ijms21051876>

- Ratnerman, S. T., Metz, J. R., Wagener, F. A. D. T. G., & Von den Hoff, J. W. (2020). Zebrafish Models of Craniofacial Malformations: Interactions of Environmental Factors. *Frontiers in Cell and Developmental Biology*, 8(November), 1–16. <https://doi.org/10.3389/fcell.2020.600926>
- Reinhardt, B., & Beikler, T. (2014). Dental Implants. In *Advanced Ceramics for Dentistry*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-394619-5.00004-3>
- Retnoaji, B., Akiyama, R., Matta, T., Bessho, Y., & Matsui, T. (2014). Retinoic acid controls proper head-to-trunk linkage in zebrafish by regulating an anteroposterior somitogenetic rate difference. *Development (Cambridge)*, 141(1), 158–165. <https://doi.org/10.1242/dev.097568>
- Rothenbücher, T. S. P., Ledin, J., Gibbs, D., Engqvist, H., Persson, C., & Hulsart-Billström, G. (2019). Zebrafish embryo as a replacement model for initial biocompatibility studies of biomaterials and drug delivery systems. *Acta Biomaterialia*, 100, 235–243. <https://doi.org/10.1016/j.actbio.2019.09.038>
- Sampurna, B. P., Audira, G., Juniardi, S., Lai, Y. H., & Hsiao, C. Der. (2018). A simple ImageJ-based method to measure cardiac rhythm in zebrafish embryos. *Inventions*, 3(2), 1–11. <https://doi.org/10.3390/inventions3020021>
- Sano, K., Inohaya, K., Kawaguchi, M., Yoshizaki, N., Iuchi, I., & Yasumasu, S. (2008). Purification and characterization of zebrafish hatching enzyme - An evolutionary aspect of the mechanism of egg envelope digestion. *FEBS Journal*, 275(23), 5934–5946. <https://doi.org/10.1111/j.1742-4658.2008.06722.x>
- Sarasamma, S., Varikkodan, M. M., Liang, S. T., Lin, Y. C., Wang, W. P., & Hsiao, C. Der. (2017). Zebrafish: a premier vertebrate model for biomedical research in indian scenario. *Zebrafish*, 14(6), 589–605. <https://doi.org/10.1089/zeb.2017.1447>
- Sari, M., Hening, P., Chotimah, Ana, I. D., & Yusuf, Y. (2021). Porous structure of bioceramics carbonated hydroxyapatite-based honeycomb scaffold for bone tissue engineering. *Materials Today Communications*, 26(October 2020), 102135. <https://doi.org/10.1016/j.mtcomm.2021.102135>
- Senra, M. R., Lima, R. B. de, Souza, D. de H. S., Marques, M. de F. V., & Monteiro, S. N. (2020). Thermal characterization of hydroxyapatite or carbonated hydroxyapatite hybrid composites with distinguished collagens for bone graft. *Journal of Materials Research and Technology*, 9(4), 7190–7200. <https://doi.org/10.1016/j.jmrt.2020.04.089>
- Senra, M. R., Vieira Marques, M. de F., & de Holanda Saboya Souza, D. (2020). Ultra-high molecular weight polyethylene bioactive composites with carbonated hydroxyapatite. *Journal of the Mechanical Behavior of Biomedical Materials*, 110(May). <https://doi.org/10.1016/j.jmbbm.2020.103938>

- Shanmugam, K., & Sahadevan, R. (2018). Bioceramics-An introductory overview. In *Fundamental Biomaterials: Ceramics*. Elsevier Ltd. <https://doi.org/10.1016/B978-0-08-102203-0.00001-9>
- Siccardi, A. J., Padgett-Vasquez, S., Garriss, H. W., Nagy, T. R., D'Abramo, L. R., & Watts, S. A. (2010). Dietary strontium increases bone mineral density in intact zebrafish (*Danio rerio*): A potential model system for bone research. *Zebrafish*, 7(3), 267–273. <https://doi.org/10.1089/zeb.2010.0654>
- Simonetti, R. B., Marques, L. S., Jr, D. P. S., & Oberst, E. R. (2015). ZEBRAFISH (*Danio rerio*): THE FUTURE OF ANIMAL MODEL IN BIOMEDICAL RESEARCH. *Journal of Fisheries Sciences*, 9(3), 39–45. <https://www.fisheriessciences.com/abstract/zebrafish-danio-rerio-the-future-of-animal-model-inbiomedical-research-6681.html>
- Soni, R. S., & Singh, V. P. (2020). Fabrication and experimental analysis of hydroxyapatite based composite materials for medical implants. *Materials Today: Proceedings*, 42, 536–540. <https://doi.org/10.1016/j.matpr.2020.10.485>
- Staal, Y. C. M., Meijer, J., van der Kris, R. J. C., de Bruijn, A. C., Boersma, A. Y., Gremmer, E. R., Zwart, E. P., Beekhof, P. K., Slob, W., & van der Ven, L. T. M. (2018). Head skeleton malformations in zebrafish (*Danio rerio*) to assess adverse effects of mixtures of compounds. *Archives of Toxicology*, 92(12), 3549–3564. <https://doi.org/10.1007/s00204-018-2320-y>
- Strecker, R., Weigt, S., & Braunbeck, T. (2013). Cartilage and bone malformations in the head of zebrafish (*Danio rerio*) embryos following exposure to disulfiram and acetic acid hydrazide. *Toxicology and Applied Pharmacology*, 268(2), 221–231. <https://doi.org/10.1016/j.taap.2013.01.023>
- Surmenev, R. A., Surmeneva, M. A., & Ivanova, A. A. (2014). Significance of calcium phosphate coatings for the enhancement of new bone osteogenesis - A review. *Acta Biomaterialia*, 10(2), 557–579. <https://doi.org/10.1016/j.actbio.2013.10.036>
- Tavares, B., & Santos Lopes, S. (2013). The importance of Zebrafish in biomedical research. *Acta Medica Portuguesa*, 26(5), 583–592. <https://doi.org/10.20344/amp.4628>
- Teixidó, E., Kießling, T. R., Krupp, E., Quevedo, C., Muriana, A., & Scholz, S. (2019). Automated Morphological Feature Assessment for Zebrafish Embryo Developmental Toxicity Screens. *Toxicological Sciences*, 167(2), 438–449. <https://doi.org/10.1093/toxsci/kfy250>
- Tomecka, M. J., Ethiraj, L. P., Sánchez, L. M., Roehl, H. H., & Carney, T. J. (2019). Clinical pathologies of bone fracture modelled in zebrafish. *DMM Disease Models and Mechanisms*, 12(9). <https://doi.org/10.1242/dmm.037630>
- Tonelli, F., Bek, J. W., Besio, R., De Clercq, A., Leoni, L., Salmon, P., Coucke, P.



- J., Willaert, A., & Forlino, A. (2020). Zebrafish: A Resourceful Vertebrate Model to Investigate Skeletal Disorders. *Frontiers in Endocrinology*, 11(July). <https://doi.org/10.3389/fendo.2020.00489>
- Vallet-Regí, M., & Salinas, A. J. (2019). Ceramics as bone repair materials. In *Bone Repair Biomaterials* (Second Edi). Elsevier Ltd. <https://doi.org/10.1016/b978-0-08-102451-5.00006-8>
- Veldman, M. B., & Lin, S. (2008). Zebrafish as a Developmental Model Organism for. *Pediatric Research*, 64(5), 470–476.
- Vimalraj, S., Yuvarashree, R., Hariprabu, G., Subramanian, R., Murali, P., Veeraiyan, D. N., & Thangavelu, L. (2021). Zebrafish as a potential biomaterial testing platform for bone tissue engineering application: A special note on chitosan based bioactive materials. *International Journal of Biological Macromolecules*, 175, 379–395. <https://doi.org/10.1016/j.ijbiomac.2021.02.005>
- Wang, J., Gong, X., Hai, J., & Li, T. (2018). Synthesis of silver–hydroxyapatite composite with improved antibacterial properties. *Vacuum*, 152, 132–137. <https://doi.org/10.1016/j.vacuum.2018.03.015>
- Wassarman, P. M., Capel, B., Soriano, P., Zernicka-goetz, M., Allfrey, V. G., Cohen, S. S., Davis, B. D., Ebert, J. D., Edds, M. V, Fell, D. H. B., Kendrew, J. C., Spiegelman, S., & Wolff, E. (1966). *CURRENT TOPICS IN* (Vol. 1).
- Weigele, J., & Franz-Odenaal, T. A. (2016). Functional bone histology of zebrafish reveals two types of endochondral ossification, different types of osteoblast clusters and a new bone type. *Journal of Anatomy*, 229(1), 92–103. <https://doi.org/10.1111/joa.12480>
- Wyatt, M. C., Foxall-Smith, M., Robertson, A., Beswick, A., Kieser, D. C., & Whitehouse, M. R. (2019). The use of silver coating in hip megaprotheses: a systematic review. *HIP International*, 29(1), 7–20. <https://doi.org/10.1177/1120700018811070>
- Xia, G., Liu, T., Wang, Z., Hou, Y., Dong, L., Zhu, J., & Qi, J. (2016). The effect of silver nanoparticles on zebrafish embryonic development and toxicology. *Artificial Cells, Nanomedicine and Biotechnology*, 44(4), 1116–1121. <https://doi.org/10.3109/21691401.2015.1011803>
- Xu, Z., Zhang, Y. L., Song, C., Wu, L. L., & Gao, H. W. (2012). Interactions of hydroxyapatite with proteins and its toxicological effect to zebrafish embryos development. *PLoS ONE*, 7(4), 1–9. <https://doi.org/10.1371/journal.pone.0032818>
- Yalcin, H. C., Amindari, A., Butcher, J. T., Althani, A., & Yacoub, M. (2017). Heart function and hemodynamic analysis for zebrafish embryos. *Developmental Dynamics*, 246(11), 868–880. <https://doi.org/10.1002/dvdy.24497>
- Yan, Y., Zhang, X., Li, C., Huang, Y., Ding, Q., & Pang, X. (2015). Preparation

and characterization of chitosan-silver/hydroxyapatite composite coatings onTiO 2 nanotube for biomedical applications. *Applied Surface Science*, 332, 62–69. <https://doi.org/10.1016/j.apsusc.2015.01.136>

Yin, I. X., Zhang, J., Zhao, I. S., Mei, M. L., Li, Q., & Chu, C. H. (2020). The antibacterial mechanism of silver nanoparticles and its application in dentistry. *International Journal of Nanomedicine*, 15, 2555–2562. <https://doi.org/10.2147/IJN.S246764>

Yuniarto, A., Sukandar, E. Y., Fidrianny, I., & Adnyana, I. K. (2017). Aplikasi Zebrafish (*Danio rerio*) pada Beberapa Model Penyakit Eksperimental. *Media Pharmaceutica Indonesiana (MPI)*, 1(3), 116. <https://doi.org/10.24123/mpi.v1i3.215>

Zeng, X.-X. I., & Zhong, T. P. (2018). Zebrafish. *Encyclopedia of Cardiovascular Research and Medicine*, 759–770. <https://doi.org/10.1016/b978-0-12-809657-4.99583-8>

Zhang, Y., Yin, Q. S., Zhao, H. F., Li, J., Wei, Y. T., Cui, F. Z., & Huang, H. Y. (2010). Antibacterial and biological properties of silver-loaded coralline hydroxyapatite. *Frontiers of Materials Science in China*, 4(4), 359–365. <https://doi.org/10.1007/s11706-010-0112-2>