

References

- Abcam. (2023). Cell Counting Kit 8 (WST-8 / CCK8) (ab228554). Retrieved from
<https://www.abcam.com/products/assay-kits/cell-counting-kit-8-wst-8--cck8-ab228554.html>
- Alfian, R., Krishna, Y., Sari, F. M., Kahfi, K. (2021). Menanti Geliat 'Kapal Induk' Riset Indonesia [Waiting for the Movement of the Indonesian Research 'Mothership']. *ValidNews*.
<https://www.validnews.id/ekonomi/menanti-geliat-kapal-induk-riset-indonesia>
- ATCC (n.d.). Primary Dermal Fibroblast Normal; Human, Neonatal (HDFn).
<https://www.atcc.org/products/pcs-201-010>
- Berridge, M. V., Herst, P. M., & Tan, A. S. (2005). Tetrazolium dyes as tools in cell biology: New insights into their cellular reduction. *Biotechnology Annual Review*, 127–152.
[https://doi.org/10.1016/s1387-2656\(05\)11004-7](https://doi.org/10.1016/s1387-2656(05)11004-7)
- Bose, S., Dasgupta, S., Tarafder, S., & Bandyopadhyay, A. (2010). Microwave-processed nanocrystalline hydroxyapatite: Simultaneous enhancement of mechanical and biological properties. *Acta Biomaterialia*, 6(9), 3782–3790. <https://doi.org/10.1016/j.actbio.2010.03.016>
- Boyd, A. R., Rutledge, L., Randolph, L. D., & Meenan, B. J. (2015). Strontium-substituted hydroxyapatite coatings deposited via a co-deposition sputter technique. *Materials Science and Engineering: C*, 46, 290–300. <https://doi.org/10.1016/j.msec.2014.10.046>
- Badan Riset dan Inovasi Nasional. (2023). PUSAT RISET MATERIAL MAJU.
<https://brin.go.id/ornm/prmm/page/tugas-dan-fungsi-4>
- Badan Riset dan Inovasi Nasional. (2022). Organization Structure.
<https://www.brin.go.id/en/page/23/struktur-organisasi>

Badan Riset dan Inovasi Nasional. (2022). Visi, Misi, Tujuan, dan Sasaran Strategis BRIN [BRIN's Vision, Mission, Goals and Strategic Targets]. <https://www.brin.go.id/page/7/visi-misi-tujuan-dan-sasaran-strategis-brin-1>

Cai, L., Qin, X., Xu, Z., Song, Y., Jiang, H., Wu, Y., Ruan, H., & Chen, J. (2019). Comparison of cytotoxicity evaluation of anticancer drugs between real-time cell analysis and CCK-8 Method. *ACS Omega*, 4(7), 12036–12042. <https://doi.org/10.1021/acsomega.9b01142>

Cao, L., Ullah, I., Li, N., Niu, S., Sun, R., Xia, D., Yang, R., & Zhang, X. (2019). Plasma spray of biofunctional (Mg, sr)-substituted hydroxyapatite coatings for titanium alloy implants. *Journal of Materials Science & Technology*, 35(5), 719–726. <https://doi.org/10.1016/j.jmst.2018.10.020>

DetikNews. (2021). BRIN, Mimpi Megawati yang Diwujudkan Jokowi [BRIN, Megawati's Dream that Jokowi Realizes]. *detiknews*. <https://news.detik.com/berita/d-5530434/brin-mimpi-megawati-yang-diwujudkan-jokowi>

Erwanti, M. O. (2019). Megawati Minta Jokowi Bangun Badan Riset dan Inovasi Nasional [Megawati asks Jokowi to build a National Research and Innovation Agency] *detiknews*. <https://news.detik.com/berita/d-4378610/megawati-minta-jokowi-bangun-badan-riset-dan-inovasi-nasional>

Giannoudis, P. V., Dinopoulos, H., & Tsiridis, E. (2005). Bone Substitutes: An update. *Injury*, 36(3). <https://doi.org/10.1016/j.injury.2005.07.029>

Hämmerle CH, Karring T. Guided bone regeneration at oral implant sites. *Periodontol 2000*. 1998;17:151-175

Hassan, M., Khaleel, A., Karam, S. M., Al-Marzouqi, A. H., ur Rehman, I., & Mohsin, S. (2023). Bacterial inhibition and osteogenic potentials of Sr/Zn co-doped nano-hydroxyapatite-plga composite scaffold for bone tissue engineering applications. *Polymers*, 15(6), 1370. <https://doi.org/10.3390/polym15061370>

H. Müller, K., Kulkarni, J., Motskin, M., Goode, A., Winship, P., Skepper, J. N., Ryan, M. P., & Porter, A. E. (2010). Ph-dependent toxicity of high aspect ratio zno nanowires in macrophages due to intracellular dissolution. *ACS Nano*, 4(11), 6767–6779. <https://doi.org/10.1021/nn101192z>

ISO. (2009). ISO 10993-5:2009 Biological evaluation of medical devices — Part 5: Tests for in vitro cytotoxicity. <https://www.iso.org/standard/36406.html>

Ishiyama, M., Tominaga, H., Shiga, M., Sasamoto, K., Ohkura, Y., & Ueno, K. (1996). A combined assay of cell viability and in vitro cytotoxicity with a highly water-soluble tetrazolium salt, neutral red and crystal violet. *Biological and Pharmaceutical Bulletin*, 19(11), 1518–1520. <https://doi.org/10.1248/bpb.19.1518>

Ito, A., Kawamura, H., Otsuka, M., Ikeuchi, M., Ohgushi, H., Ishikawa, K., Onuma, K., Kanzaki, N., Sogo, Y., & Ichinose, N. (2002). Zinc-releasing calcium phosphate for stimulating bone formation. *Materials Science and Engineering: C*, 22(1), 21–25. [https://doi.org/10.1016/s0928-4931\(02\)00108-x](https://doi.org/10.1016/s0928-4931(02)00108-x)

John Hopkins Medicine. (2023). Bone Grafting.<https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/bone-grafting>

Kumar, P., Vinitha, B., & Fathima, G. (2013). Bone Grafts in Dentistry. *Journal of Pharmacy And Bioallied Sciences*, 5(5), 125. <https://doi.org/10.4103/0975-7406.113312>

Nel, A., Xia, T., Mädler, L., & Li, N. (2006). Toxic potential of materials at the Nanolevel. *Science*,

311(5761), 622–627. <https://doi.org/10.1126/science.1114397>

Rizky, F. (2021). Soal Perpres 33/2021, Ini Penjelasan Kepala BRIN [Regarding Presidential Decree

33/2021, this is the explanation from the Head of BRIN]. *SindoNews*.

<https://nasional.sindonews.com/read/419906/12/soal-perpres-332021-ini-penjelasan-kepala-brin-1620273927>

Rodriguez, A., & Nowzari, H. (2019). The long-term risks and complications of bovine-derived

xenografts: A case series. *Journal of Indian Society of Periodontology*, 23(5), 487.

https://doi.org/10.4103/jisp.jisp_656_18

Rohmadi, R., Harwijayanti, W., Ubaidillah, U., Triyono, J., Diharjo, K., & Utomo, P. (2021). In vitro

degradation and cytotoxicity of eggshell-based hydroxyapatite: A systematic review and meta-analysis. *Polymers*, 13(19), 3223. <https://doi.org/10.3390/polym13193223>

Rybchyn, M. S., Slater, M., Conigrave, A. D., & Mason, R. S. (2011). An Akt-dependent increase in

canonical Wnt signaling and a decrease in sclerostin protein levels are involved in strontium ranelate-induced osteogenic effects in human osteoblasts. *Journal of Biological Chemistry*, 286(27), 23771–23779. <https://doi.org/10.1074/jbc.m111.251116>

Sasidharan, A., Chandran, P., Menon, D., Raman, S., Nair, S., & Koyakutty, M. (2011). Rapid dissolution

of ZnO nanocrystals in acidic cancer microenvironment leading to preferential apoptosis.

Nanoscale, 3(9), 3657. <https://doi.org/10.1039/c1nr10272a>

- Sirait, M., Sinulingga, K., Siregar, N., Doloksaribu, M. E., & Amelia. (2022). Characterization of hydroxyapatite by cytotoxicity test and bending test. *Journal of Physics: Conference Series*, 2193(1), 012039. <https://doi.org/10.1088/1742-6596/2193/1/012039>
- Sogo, Y., Ito, A., Fukasawa, K., Sakurai, T., & Ichinose, N. (2004). Zinc containing hydroxyapatite ceramics to promote osteoblastic cell activity. *Materials Science and Technology*, 20(9), 1079–1083. <https://doi.org/10.1179/026708304225019704>
- Stockert, J. C., Horobin, R. W., Colombo, L. L., & Blázquez-Castro, A. (2018). Tetrazolium salts and Formazan products in Cell Biology: Viability assessment, fluorescence imaging, and labeling perspectives. *Acta Histochemica*, 120(3), 159–167. <https://doi.org/10.1016/j.acthis.2018.02.005>
- Temprom, L., Suphasinee, L. S., Tippayawat, P., Suwanna, P. (2015). Bioactivity, Cytotoxicity and Antibacterial Evaluation of Undoped, Zn-doped, Sr-doped, and Zn/Sr-codoped Hydroxyapatites Synthesized by a Sol-gel Method. *Chiang Mai Journal of Science*, 44(2), 630-639. <https://www.thaiscience.info/journals/Article/CMJS/10985642.pdf>
- Teresia, A. & Saleh, F. Jokowi Teken Perpres 33/2021, Ini Tugas dan Fungsi BRIN [Jokowi Signs Presidential Decree 33/2021, These are BRIN's Duties and Functions]. *kumparanNEWS*. <https://kumparan.com/kumparannews/jokowi-teken-perpres-33-2021-ini-tugas-dan-fungsi-brin-1vgTEsV9O86/full>
- Ullah, I., Siddiqui, M. A., Kolawole, S. K., Liu, H., Zhang, J., Ren, L., & Yang, K. (2020). Synthesis, characterization and in vitro evaluation of zinc and strontium binary doped hydroxyapatite for biomedical application. *Ceramics International*, 46(10), 14448–14459. <https://doi.org/10.1016/j.ceramint.2020.02.242>

Ullah, I., Xu, Q., Jan, H. U., Ren, L., & Yang, K. (2022). Effects of strontium and zinc substituted plasma sprayed hydroxyapatite coating on bone-like apatite layer formation and cell-material interaction. *Materials Chemistry and Physics*, 275, 125219.
<https://doi.org/10.1016/j.matchemphys.2021.125219>

Xia, T., Zhao, Y., Sager, T., George, S., Pokhrel, S., Li, N., Schoenfeld, D., Meng, H., Lin, S., Wang, X., Wang, M., Ji, Z., Zink, J. I., Mädler, L., Castranova, V., Lin, S., & Nel, A. E. (2011). Decreased dissolution of ZnO by iron doping yields nanoparticles with reduced toxicity in the rodent lung and zebrafish embryos. *ACS Nano*, 5(2), 1223–1235. <https://doi.org/10.1021/nn1028482>

Zhang, S., Prabhakaran, M. P., Qin, X., & Ramakrishna, S. (2015). Biocomposite scaffolds for bone regeneration: Role of chitosan and hydroxyapatite within poly-3-hydroxybutyrate-co-3-hydroxyvalerate on mechanical properties and in vitro evaluation. *Journal of the Mechanical Behavior of Biomedical Materials*, 51, 88–98. <https://doi.org/10.1016/j.jmbbm.2015.06.032>