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References

Anderson, J. M. (2001). Biological responses to materials. Annual Review of Materials Research, 31:81–110. https://doi.org/10.1146/annurev.matsci.31.050801.093112.

Asher, C. (2017). Macrophages are the ultimate multitaskers. The Scientist, 31, 34–38. https://www.researchgate.net/publication/320539213_Macrophages_are_the_ultimate_multitaskers.

Bae, J. M., & Kim, H. S. (2013). Bone healing after fracture: Tissue engineering. Tissue Engineering Part B: Reviews, 19(1), 1–15.

Bell, R. S., Schatzker, J., Fornasier, V. L., & Goodman, S. B. (1985). A study of implant failure in the Wagner resurfacing arthroplasty. The Journal of bone and joint surgery. American volume, 67(8), 1165–1175.

Chan, J. K., Glass, G. E., Ersek, A., Freidin, A., Williams, G. A., Gowers, K., Espirito Santo, A. I., Jeffery, R., Otto, W. R., Poulsom, R., Feldmann, M., Rankin, S. M., Horwood, N. J., & Nanchahal, J. (2015). Low-dose TNF augments fracture healing in normal and osteoporotic bone by up-regulating the innate immune response. EMBO molecular medicine, 7(5), 547–561. https://doi.org/10.15252/emmm.201404487.

Einhorn, T. A., & Gerstenfeld, L. C. (2015). Fracture healing: mechanisms and interventions. Nature reviews. Rheumatology, 11(1), 45–54. https://doi.org/10.1038/nrrheum.2014.164.

Gerstenfeld, L. C., Cho, T. J., Kon, T., Aizawa, T., Cruceta, J., Graves, B. D., & Einhorn, T. A. (2001). Impaired intramembranous bone formation during bone repair in the absence of tumor necrosis factor-alpha signaling. Cells, tissues, organs, 169(3), 285–294. https://doi.org/10.1159/000047893.

Glass, G. E., Chan, J. K., Freidin, A., Feldmann, M., Horwood, N. J., & Nanchahal, J. (2011). TNF-alpha promotes fracture repair by augmenting the recruitment and differentiation of muscle-derived stromal cells. Proceedings of the National Academy of Sciences of the United States of America, 108(4), 1585–1590. https://doi.org/10.1073/pnas.1018501108.

Goodman S. B. (1994). The effects of micromotion and particulate materials on tissue differentiation. Bone chamber studies in rabbits. Acta orthopaedica Scandinavica. Supplementum, 258, 1–43. https://doi.org/10.3109/17453679409155227.

Goodman, S. B., Gibon, E., & Yao, Z. (2013). The basic science of periprosthetic osteolysis. Instructional course lectures, 62, 201–206.

Huang, E. E., Zhang, N., Ganio, E. A., Shen, H., Li, X., Ueno, M., Utsunomiya, T., Maruyama, M., Gao, Q., Su, N., Yao, Z., Yang, F., Gaudillière, B., & Goodman, S. B. (2022). Differential dynamics of bone graft transplantation and mesenchymal stem cell therapy during bone defect healing in a murine critical size defect. Journal of orthopaedic translation, 36, 64–74. https://doi.org/10.1016/j.jot.2022.05.010.

Kawai, T., Shanjani, Y., Fazeli, S., Behn, A. W., Okuzu, Y., Goodman, S. B., & Yang, Y. P. (2018). Customized, degradable, functionally graded scaffold for potential treatment of early stage osteonecrosis of the femoral head. Journal of orthopaedic research : official publication of the Orthopaedic Research Society, 36(3), 1002–1011. https://doi.org/10.1002/jor.23673.

Keeney, M., Waters, H., Barcay, K., Jiang, X., Yao, Z., Pajarinen, J., Egashira, K., Goodman, S. B., & Yang, F. (2013). Mutant MCP-1 protein delivery from layer-by-layer coatings on orthopedic implants to modulate inflammatory response. Biomaterials, 34(38), 10287–10295. https://doi.org/10.1016/j.biomaterials.2013.09.028.

Kumar, V., Abbas, A. K., & Aster, J. C. (2002). Robbins Basic Pathology (7th ed.). Elsevier - Health Sciences Division.

Lasorda, Tommy. (n.d.). AZQuotes.com. https://www.azquotes.com/quote/547230.

Lin, T., Pajarinen, J., Nabeshima, A., Lu, L., Nathan, K., Yao, Z., & Goodman, S. B. (2017). Establishment of NF-κB sensing and interleukin-4 secreting mesenchymal stromal cells as an "on-demand" drug delivery system to modulate inflammation. Cytotherapy, 19(9), 1025–1034. https://doi.org/10.1016/j.jcyt.2017.06.008.

Lin, T. H., Gibon, E., Loi, F., Pajarinen, J., Córdova, L. A., Nabeshima, A., Lu, L., Yao, Z., & Goodman, S. B. (2017). Decreased osteogenesis in mesenchymal stem cells derived from the aged mouse is associated with enhanced NF-κB activity. Journal of orthopaedic research : official publication of the Orthopaedic Research Society, 35(2), 281–288. https://doi.org/10.1002/jor.23270.

Lin, Z., Li, Z., Li, E. N., Li, X., Del Duke, C. J., Shen, H., Hao, T., O'Donnell, B., Bunnell, B. A., Goodman, S. B., Alexander, P. G., Tuan, R. S., & Lin, H. (2019). Osteochondral Tissue Chip Derived From iPSCs: Modeling OA Pathologies and Testing Drugs. Frontiers in bioengineering and biotechnology, 7, 411. https://doi.org/10.3389/fbioe.2019.00411.

Loi, F., Córdova, L. A., Zhang, R., Pajarinen, J., Lin, T. H., Goodman, S. B., & Yao, Z. (2016). The effects of immunomodulation by macrophage subsets on osteogenesis in vitro. Stem cell research & therapy, 7, 15. https://doi.org/10.1186/s13287-016-0276-5.

Mantovani, A., Sica, A., Sozzani, S., Allavena, P., Vecchi, A., & Locati, M. (2004). The chemokine system in diverse forms of macrophage activation and polarization. Trends in immunology, 25(12), 677–686. https://doi.org/10.1016/j.it.2004.09.015.

Maruyama, M., Moeinzadeh, S., Guzman, R. A., Zhang, N., Storaci, H. W., Utsunomiya, T., Lui, E., Huang, E. E., Rhee, C., Gao, Q., Yao, Z., Takagi, M., Yang, Y. P., & Goodman, S. B. (2021). The efficacy of lapine preconditioned or genetically modified IL4 over-expressing bone marrow-derived mesenchymal stromal cells in corticosteroid-associated osteonecrosis of the femoral head in rabbits. Biomaterials, 275, 120972. https://doi.org/10.1016/j.biomaterials.2021.120972.

Schmidt-Bleek, K., Schell, H., Schulz, N., Hoff, P., Perka, C., Buttgereit, F., Volk, H. D., Lienau, J., & Duda, G. N. (2012). Inflammatory phase of bone healing initiates the regenerative healing cascade. Cell and tissue research, 347(3), 567–573. https://doi.org/10.1007/s00441-011-1205-7.

Ueno, M., Lo, C. W., Barati, D., Conrad, B., Lin, T., Kohno, Y., Utsunomiya, T., Zhang, N., Maruyama, M., Rhee, C., Huang, E., Romero-Lopez, M., Tong, X., Yao, Z., Zwingenberger, S., Yang, F., & Goodman, S. B. (2020). Interleukin-4 overexpressing mesenchymal stem cells within gelatin-based microribbon hydrogels enhance bone healing in a murine long bone critical-size defect model. Journal of biomedical materials research. Part A, 108(11), 2240–2250. https://doi.org/10.1002/jbm.a.36982.

Utsunomiya, T., Zhang, N., Lin, T., Kohno, Y., Ueno, M., Maruyama, M., Huang, E., Rhee, C., Yao, Z., & Goodman, S. B. (2021). Suppression of NF-κB-induced chronic inflammation mitigates inflammatory osteolysis in the murine continuous polyethylene particle infusion model. Journal of biomedical materials research. Part A, 109(10), 1828–1839. https://doi.org/10.1002/jbm.a.37175.