# Article information:

Osteoimmunity‐Regulating Biomimetically Hierarchical Scaffold for Augmented Bone Regeneration - Zhang - 2022 - Advanced Materials - Wiley Online Library
<https://onlinelibrary.wiley.com/doi/10.1002/adma.202202044>

# Article summary:

1. 3D printed scaffolds have become a popular strategy for repairing large-scale bone defects due to their personalized customization and high precision.

2. Osteoimmunomodulation is a new strategy for facilitating osteoimmune balance by mediating reciprocal interactions between immune and bone cells.

3. A hybrid DFO/MnCO@gelatin methacryloyl-polylactide (DMGP) scaffold with a biomimetically hierarchical porous structure was fabricated to realize controlled release of DFO and cascade immunomodulatory function within the scaffolds.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Osteoimmunity‐Regulating Biomimetically Hierarchical Scaffold for Augmented Bone Regeneration” by Zhang in 2022 provides an overview of the development of a 3D printed hybrid DFO/MnCO@gelatin methacryloyl-polylactide (DMGP) scaffold with a biomimetically hierarchical porous structure for augmented bone regeneration. The article is well written, providing detailed information on the development of the scaffold and its potential applications in bone tissue engineering. The article is also supported by numerous references from reliable sources, which adds to its trustworthiness and reliability.

However, there are some points that could be improved upon in terms of trustworthiness and reliability. For instance, the article does not provide any evidence or data to support its claims about the efficacy of the DMGP scaffold in promoting vascularization and osteogenesis or inhibiting osteoclast differentiation. Additionally, it does not explore any possible risks associated with using this type of scaffold, such as potential toxicity or adverse effects on surrounding tissues or organs. Furthermore, while the article mentions several clinical trials using inhaled CO, it does not provide any information on their outcomes or results. Finally, while the article provides an overview of how macrophages can secrete various cytokines that promote blood vessel formation and tissue matrix remodeling, it does not discuss any potential counterarguments or alternative approaches that could be used instead of this particular approach.

In conclusion, while this article provides an informative overview of the development of a 3D printed hybrid DFO/MnCO@gelatin methacryloyl-polylactide (DMGP) scaffold with a biomimetically hierarchical porous structure for augmented bone regeneration, there are some areas where more evidence and data could be provided to further strengthen its trustworthiness and reliability.

# Topics for further research:

* Osteoimmunity and Bone Regeneration
* Macrophage-Mediated Cytokine Secretion
* Clinical Trials of Inhaled CO
* Potential Risks of DMGP Scaffold
* Alternative Approaches to Bone Regeneration
* Toxicity of DMGP Scaffold

# Report location:

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