# Article information:

Antibacterial and immunogenic behavior of silver coatings on additively manufactured porous titanium - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S1742706118305804>

# Article summary:

1. This article discusses the use of electrophoretic deposition (EPD) to biofunctionalize the surface of additively manufactured volume-porous titanium implants with chitosan-based coatings and different concentrations of silver nanoparticles or vancomycin.

2. An in vitro and in vivo study was conducted to evaluate the antibacterial, immunogenic, and osteogenic activity of the developed implants.

3. The results showed that Ch+vancomycin coatings reduced implant infection rate compared to chitosan-only coatings, while Ch+Ag implants did not demonstrate antibacterial effects in vivo and even aggravated infection-mediated bone remodeling.

# 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 is generally reliable and trustworthy as it provides a comprehensive overview of the research conducted on the use of electrophoretic deposition (EPD) to biofunctionalize the surface of additively manufactured volume-porous titanium implants with chitosan-based coatings and different concentrations of silver nanoparticles or vancomycin. The authors provide detailed information about their methodology, results, and conclusions, which are supported by evidence from both in vitro and in vivo studies. Furthermore, they discuss potential limitations of their study such as the fact that Ag NP-based coatings were outperformed by an antibiotic-based coating due to their adverse effects on neutrophils’ phagocytic activity.

The only potential bias that could be identified is that the authors do not explore any counterarguments or alternative explanations for their findings. However, this does not significantly affect the overall trustworthiness and reliability of the article as it provides a comprehensive overview of their research findings.

# Topics for further research:

* Electrophoretic deposition (EPD)
* Additively manufactured volume-porous titanium implants
* Chitosan-based coatings
* Silver nanoparticles
* Vancomycin
* Neutrophils’ phagocytic activity

# Report location:

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