

# An overview of experimental methodologies for bioactive glass-coated Ti implants assessment in orthopedic and dental applications

XinYue Lu<sup>1</sup>, Yu Ru Li<sup>1</sup>, XinRu Zheng<sup>1</sup>, XiaoYu Geng<sup>1</sup>, XuanYi Wang<sup>1</sup>, Dan Yang<sup>1</sup>, and Heng Bo Jiang<sup>1</sup>

<sup>1</sup>The CONVERSATIONALIST club School of Stomatology Shandong First Medical University & Shandong Academy of Medical Sciences Jinan Shandong 250117 China

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## Abstract

Bioactive glass, as an ideal biomaterial, is not suitable for load-bearing parts because of its high brittleness and has been applied for surface modification to manufacture composite materials. Titanium alloy is bio-inert and prone to loosening, which leads to implant failure and infection after implantology. Applying bioactive glass to titanium and its alloys in the form of coating combines titanium metal's superior mechanical properties and bioglass's good biological properties. In this review, the authors searched and screened four databases, including Web of Science, PubMed, Embase, and Scopus, for articles published since 2013, finally, 49 articles were included to investigate the biological properties of bioactive glass coatings on titanium and its alloys. From the perspective of methodology, this review aims to summarize the methodologies performed for detecting the biological properties including biocompatibility and bioactivity of coatings were also concluded, covering the experimental process and principle of the included studies, therefore, providing learning materials for new researchers in material science and biotechnology.

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