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A Critical Review on the Cellular and Molecular Interactions at the Interface of Zirconia-Based Biomaterials

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Abstract

In the past few years, zirconia has gained a great attention among biomedical scientists due to its extraordinary strength and fracture toughness, negligible thermal conductivity, good biocompatibility and chemical inertness. In this regard, there are still room for the manipulation of zirconia-based biomaterials regarding the protein adsorption and subsequently cell responses to the surface. Protein adsorption on biomaterials' surfaces start interpreting the construction and also arranging the surface characteristics into a biological language. In this review, the role of adsorbed proteins as key players in starting interactions between cells and zirconia-based biomaterials will be discussed in detail. The discussion will then highlight discussions on the implementation of innovative strategies to engineer the physiochemical properties of this class

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