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Polymers for cell/tissue anti-adhesion

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ABSTRACT

The appropriate anti-adhesive effect of polymers on cells or tissues in the body is one of the essential requirements of maintaining health and protecting the body from trauma and foreign bodies. Regulating the anti-adhesive properties of biomedical polymers against cells has been considered a pivotal parameter in developing polymeric biomaterials for biomedical applications such as artificial blood vessels and cell encapsulation. Meanwhile, tissue adhesion barriers that can physically isolate wounds and thus effectively prevent the formation of tissue adhesion have been a hot topic in both research and industrial fields. This review describes the comprehensive knowledge and recent research efforts on polymers for anti-adhesion to both cells and tissues. The basic concepts and mechanisms for the design and performance of anti-adhesive polymers are introduced in terms of both cell and tissue. Polymer-based approaches for anti-adhesion to cells or tissues are then extensively discussed.

Keywords: Biomaterials, Cell anti-adhesion, Bioinert surface, Tissue anti-adhesion, Tissue adhesion barrier

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