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Pullulan: A novel molecule for biomedical applications

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Highlights

- Biomedical applications of pullulan and its derivatives have been discussed.
- Imperative role of pullulan in drug and gene targeting has been elaborated.
- Described pullulan as blood plasma substitute and scaffold for tissue engineering.
- Pullulan as molecular chaperone and vaccination have been discussed.
- Highlighted pullulan in film forming, insulinotropic activity and medical imaging.

Abstract

Pullulan is an imperative natural polymer produced commercially by yeast like fungus *Aureobasidium pullulans*. It is non-toxic, non-immunogenic, non-carcinogenic and non-mutagenic in nature. The structure of pullulan consist unique linkage pattern with two α -(1→4) and one α -(1→6) glycosidic bonds in maltotriose repeating units (G_3). Pullulan endows distinctive physical traits due to the presence of nine hydroxyl groups on glucopyranose rings of G_3 units. It can be derivatized in various forms by substituting these hydroxyl groups to enhance its utility in biomedical applications. Pullulan and its derivatives are completely explored for their applications

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