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Bioadhesive Immobilize Agarase on Magnetic Ferriferous by Polydopamine

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ABSTRACT:

The combined action of dopamine–iron coordination reaction and dopamine self-polymerization was employed to immobilize agarase on the surface of Magnetic ferriferous oxide (MFO). The solid–liquid separation was easily realized in magnetic field due to the magnetic carrier. The immobilization process was taken by dopamine self-polymerization in room temperature, aqueous solution and neutral pH without organic solvent. Magnetic ferriferous oxide was prepared through coprecipitation. Then, MFO and dopamine were reacted under mild conditions to prepare the magnetic ferriferous oxide-polydopamine (MFO–PDA) complex. The MFO–PDA complex was used in enzyme immobilization. It showed that the average enzyme activity yield was 63.9% in Immobilized enzyme, and the relative enzyme activity of the immobilized enzyme was still above 50% even after five times of reuse in addition, the MFO–PDA complex had good immobilization capacity toward agarase, and the immobilized enzyme has good reusability.

Key words: Magnetic ferriferous oxide; Polydopamine; Immobilized enzyme; agarase;

Bioadhesive

1. Introduction:

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