

Supplementary Materials

Biocatalytic system made of 3D chitin, silica nanopowder and horseradish peroxidase for the removal of 17 α -ethinylestradiol: Determination of process efficiency and degradation mechanism

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1. Methods

1.1. Determination of DA and DD by Attenuated Total Reflectance–Fourier Transformation Infrared Spectroscopy (ATR-FTIR)

The degree of acetylation (DA) as follows—Equation (1) and the degree of deacetylation (DD) using Equation (2) were calculated for isolated chitinous scaffold[1]:

$$DA\% = [(A_{1654}/A_{3432}) \cdot 100\%]/1.33 \quad (1)$$

$$DD\% = 100\% - DA\% \quad (2)$$

where, (A_{1654}/A_{3432}) - is absorbance at 1654 cm⁻¹ and 3432 cm⁻¹, respectively

2. Results

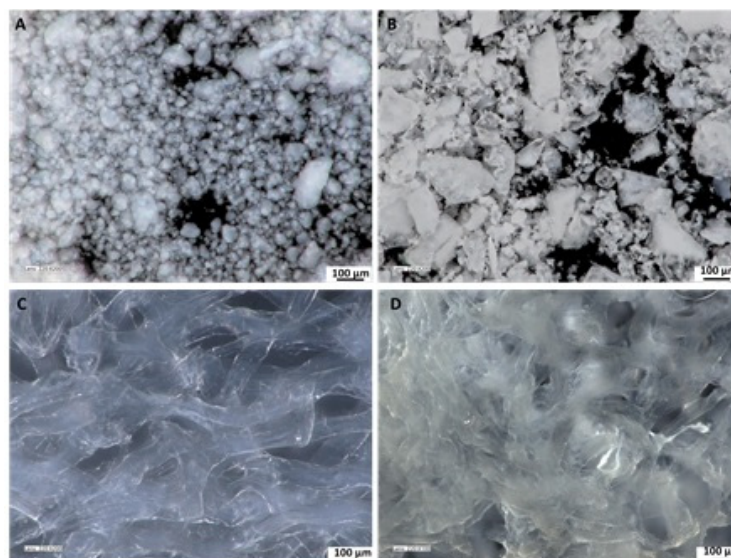


Figure S1. Silica nanopowder (A) before and (B) after HRP enzyme immobilization. Chitinous scaffold from *A. fistularis* marine sponge (C) before and (D) after HRP immobilization.

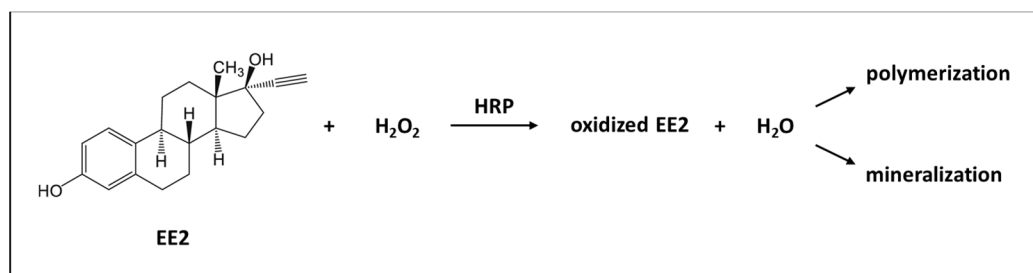


Figure S2. The general scheme of possible enzymatic conversion reaction.

References

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