

RESEARCH NOTES

真菌细胞壁多糖的紫草细胞吸附固定化研究

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摘要 A culture of *Lithospermum erythrorhizon* adsorbed on fungal cell wall polysaccharides, a novel bio-adsorbent made from fungal cell wall, has been established in this paper. Three steps were involved in this immobilization. The first step was preparation of suspended plant cells from tightly aggregated plant cell clumps. The disassembled ratio of 0.715g.g⁻¹ (the disassembled cells over total cells) was obtained under optimum condition for the enzymatic reaction. Then, the adsorption of plant cells onto fungal cell wall polysaccharides was conducted and the saturated capacity of 12 g cell per gram of carrier was obtained in adsorption immobilization. Finally, the culture of cells adsorbed on fungal cell wall polysaccharides was compared with that of cells entrapped in alginate or suspension cell culture. While exposed to in situ liquid paraffin extraction coupled with cell culture, the shikonin productivity of immobilized cells by adsorption was 10.67 g.L⁻¹, which was 1.8 times of that in suspension culture and 1.5 times of that entrapped in alginate.

关键词 [bio-adsorbent](#) [immobilization](#) [lithospermum erythrorhizon](#)

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Investigation on Adsorption of *Lithospermum erythrorhizon* onto Fungal Cell Wall Polysaccharides

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Abstract A culture of *Lithospermum erythrorhizon* adsorbed on fungal cell wall polysaccharides, a novel bio-adsorbent made from fungal cell wall, has been established in this paper. Three steps were involved in this immobilization. The first step was preparation of suspended plant cells from tightly aggregated plant cell clumps. The disassembled ratio of 0.715g.g⁻¹ (the disassembled cells over total cells) was obtained under optimum condition for the enzymatic reaction. Then, the adsorption of plant cells onto fungal cell wall polysaccharides was conducted and the saturated capacity of 12 g cell per gram of carrier was obtained in adsorption immobilization. Finally, the culture of cells adsorbed on fungal cell wall polysaccharides was compared with that of cells entrapped in alginate or suspension cell culture. While exposed to in situ liquid paraffin extraction coupled with cell culture, the shikonin productivity of immobilized cells by adsorption was 10.67 g.L⁻¹, which was 1.8 times of that in suspension culture and 1.5 times of that entrapped in alginate.

Key words [bio-adsorbent](#); [immobilization](#); [lithospermum erythrorhizon](#)

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