

عنوان مقاله:

Investigation on biocatalytic properties of soybean peroxidase utilizable in waste water treatment

محل انتشار:

اولین کنفرانس بین المللی تصفیه فاضلاب و بازیافت آب، فناوری ها و یافته های نو (سال: 1388)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Soybean seed coat peroxidase (SBP) is an inexpensive oxidoreductive enzyme and could potentially be used to oxidise/polymerise various organic pollutants present in the industrial and petrochemical wastes. SBP is able to retain its catalytic properties under wide ranges of pH and at elevated temperatures. In this study, a systematic evaluation of the biocatalytic properties of SBP was carried out. The enzyme exhibited highest activity and stability at pH 6.0 and retained over 75% of the maximum activity for 12 hours. SBP also showed 2.5 times higher activity at an elevated temperature of 65°C when compared to the activity at room temperature and retained over 95% of the activity for 30 min at 75°C. The pH and temperature of the reaction mixture were found to significantly influence the SBP activity. SBP is fairly active in organic solvents. The enzyme exhibited highest activity in the presence of 20% (v/v) acetone. The enzyme activity was reduced with an increase in concentration of the organic solvent.

کلمات کلیدی:

Catalytic Properties, Enzyme Activity, Organic Solvents, Oxidoreductive, Soybean Seed Coat Peroxidase

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