

Functional expression of *Pinctada fucata* tyrosinase in *E.coli* and its characterization

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It is known that tyrosinases catalyze the hydroxylation of a monophenol and the conversion of an o-diphenol to the corresponding o-quinone. Especially, the enzymes can be involved in the modification of tyrosine residues into 3,4-dihydroxyphenylalanine (DOPA) and DOPA/DOPAquinone-derived intermolecular cross-linking (quinone tanning) in marine environment. Here, we firstly over-expressed a *Pinctada fucata* tyrosinase in *E. coli* and simply purified the protein using affinity chromatography. Biochemical properties such as kinetic parameters and reaction specificity was investigated. The results showed the potential ability as a new biocatalyst. We expect the enzyme can be used as a significant biocatalytic marine-derived material for biomedical and industrial applications.