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Chemical modification of Adenosine deaminase in *serratia marcescens*

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The adenosine deaminase (ADA) in *serratia marcescens* catalyzes the conversion of adenosine to inosine. Based on the amino acid sequencing of ADA from various sources, several arginine residues were conserved. Reaction of phenylglyoxal, a reagent specific for arginine residues with *serratia marcescens* ADA resulted in drastic decrease of catalytic activity. The enzyme was inactivated in a time-dependent manner at a rate of $12M^{-1}min^{-1}$. There was no hyperbolic curvature at high concentration of phenylglyoxal, indicating no formation of enzyme-inhibition complex before inactivation. The modification reaction was markedly dependent on pH. The data suggested that the arginine residue could be responsible for the catalytic activity.

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Characterization of the extracellular phenol oxidase from temperature senstive (*ts*) mutants of *Cryptococcus neoformans*

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Two virulence factors, the polysaccharide capsule and melanization, have been recognized in the pathogenic fungus *Cryptococcus neoformans*, an organism causing life-threating infection in an estimated 10% of AIDS patients. In *C. neoformans*, phenol oxidase (1,2-benzenediol: oxygen oxidoreductase, EC 1. 10. 3. 1) using various catechols or others as substrates is responsible for the melanization. In this study, we generated several *ts* mutants of *C. neoformans* with ethylmethane sulfonate, and purified phenol oxidase from these mutants. The enzyme was purified from the culture supernatant by ethanol precipitation, nondenaturing electrophoresis and chromatography on DEAE-Sephadex CL-6B and Sephadex G-75. The molecular weight of the phenol oxidase was estimated to be about 75 kDa. The optimum pH and temperature were determined to be around 8.0 and 20 ℃, respectively. The phenol oxidase activity of a *ts* mutant KC15 was 6 times more then that of wild type *C. neoformans* in the glucose media.