

## **CLONING AND EXPRESSION OF THE *YICP* ADENINE DEAMINASE - ENCODING GENE FROM *Escherichia coli***

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Adenine deaminase catalyzes the reversible deamination of adenine to hypoxanthine, a key step in the purine interconversion pathway, which allows the interconversion among purine bases with no conversion into nucleosides or nucleotides, a common process in many bacteria and fungi. Moreover, enzyme activities that generate adenine as a substrate may be assessed by coupling their reaction to adenine deaminase and xanthine oxidase, while monitoring the continuous formation of uric acid at 293 nm. In order to investigate the role of adenine deaminase in the purine metabolism and test the potential of this enzyme as a tool for enzyme activity assay, the adenine deaminase-encoding gene from *Escherichia coli* was cloned into pET23a(+) expression vector and the recombinant enzyme was superexpressed in transformed *E. coli* BL21 (DE3) electrocompetent host cells. Our next goal is the purification of the *E. coli* adenine deaminase, which is an essential step for future kinetic and structural studies.