

## **BETA-GLUCOSIDASE Zm-p60.1: INVESTIGATING MODULATION OF ENZYME SPECIFICITY BY SATURATION MUTAGENESIS APPROACH**

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### **ABSTRACT**

Cytokinins are hormones directing plant growth and development. In these processes enzymes are included in control biosynthesis, storage and activation of plant hormones. Maize  $\beta$ -glucosidase Zm-p60.1 is an enzyme able to convert glucosylated (non active) cytokinins into active forms.

Substrate specificity of Zm-p60.1 is for the aglycon part of the substrate determined by functional cluster of amino acids in the entrance of the active site. Trp373 has a prominent position among them. In spite of the fact that Trp at this position is highly conserved, in related enzymes different compositions of the site are possible. Our previous results show that combination of amino acid at 373 position and neighboring residues modulates enzyme specificity as well as catalysis.

Our goal is to explore how different amino acids at this position can affect the substrate specificity towards to different substrates

**Key words:**  $\beta$ -glucosidase, saturation mutagenesis, protein expression, substrate specificity

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