Expression and characterization of recombinant *Cellulomonas flavigena* Endo-1,4-β-xylanase in *Pichia pastoris*

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Xylan is a major component in plat cell wall and the second abundant polysaccharides in nature. Endo-1,4-β-xylanase (XYN) is the most important xylan degrading enzyme, which cleaves the β-1,4-glycosidic bonds in xylan backbone and has various applications in industries. In this study, a gene encoding *xyn* from *Cellulomonas flavigena* has been cloned into pPICZα B as expression plasmid and was expressed in the heterologous host *Pichia pastoris*, under the control of the *AOX1* methanol inducible promoter. The correct integration in the *Pichia* genome was confirmed by PCR with the XYN forward and the 5' *AOX1* reverse primers. The production of recombinant xylanase (rXYN) was carried out with specific media for 96 h. The biochemical characterization of rXYN was investigated under pH 4-9 and temperature of 30-65℃. As a result, the optimal pH and temperature were determined as pH 6.0 and 55℃, respectively. Finally, the specific activity of rXYN was about 4,400 U/mg-protein under the determined conditions.