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Recombinant α-Glucosidase from *Aspergillus niger*. Overexpression by *Emericella nidulans*, Purification and Characterization

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An expression plasmid containing the *agl*A gene encoding *Aspergillus niger* GN-3 α-glucosidase was constructed and inserted into *Emericella nidulans* JCM10259. The transformant secreted about 61 mg/L of the recombinant α-glucosidase into its culture medium. The recombinant enzyme was purified from the culture filtrate through ammonium sulfate precipitation and three chromatographic steps. It was confirmed that, like wild-type *A. niger* GN-3 α-glucosidase, the purified recombinant enzyme consisted of two subunits. Although the molecular mass of the recombinant enzyme was slightly smaller than that of wild-type *A. niger* α-glucosidase (attributed to differences in glycosylation), the pH optima and substrate specificities of the wild-type and recombinant enzymes were comparable.

Key words: α-glucosidase, *Aspergillus niger*, recombinant enzyme, enzyme expression, enzyme characterization

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