

# Active Recombinant *Canavalia ensiformis* $\alpha$ 1-2,3,6 Mannosidase

**Cat. No.** Mannosidase-04C    **Lot. No.** (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>Product Overview</b> | Active Recombinant Jack Bean ( <i>Canavalia ensiformis</i> ) $\alpha$ 1-2,3,6 Mannosidase was expressed in Yeast ( <i>Pichia pastoris</i> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Species</b>          | <i>Canavalia ensiformis</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Source</b>           | Yeast                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Description</b>      | $\alpha$ 1-2,3,6 Mannosidase is a broad specificity exoglycosidase that catalyzes the hydrolysis of terminal, non-reducing $\alpha$ 1-2, $\alpha$ 1-3 and $\alpha$ 1-6 linked mannose residues from oligosaccharides.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Molecular Mass</b>   | 110 kDa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Purity</b>           | $\geq$ 95% purity, as determined by SDS-PAGE and intact ESI-MS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Notes</b>            | <p>1. <math>\alpha</math>1-2,3,6 mannosidase is a glycosylated protein. The theoretical molecular weight is 110 kDa, and it contains two subunits of 66 kDa and 44 kDa, respectively. 2. The optimum pH value of <math>\alpha</math>1-2,3,6 mannosidase is 4.5. Adding 2 mM <math>Zn^{2+}</math> into the reaction system can enhance the activity of the enzyme. 3. In order to completely remove all mannose residues linked by <math>\alpha</math> at the non-reducing end, it may be necessary to increase the enzyme concentration and incubate overnight (18 hours). 4. In order to completely remove <math>\alpha</math>1-6 mannose residues from complex substrates, it may be necessary to use <math>\alpha</math>1-2,3,6 mannosidase and <math>\alpha</math>1-6 mannosidase for enzyme</p> |

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digestion. 5. If a larger reaction volume is needed, the reaction system can be enlarged in proportion. 6. The amount of exonuclease is different with different substrates. In the reaction system of 10-25  $\mu$ L, when 1  $\mu$ g glycoprotein or 100 nM oligosaccharide is treated within 1 hour, the initial amount of enzyme ranges from 1-2  $\mu$ L. If the enzyme digestion is not complete, overnight reaction is needed.

**Storage** Optimal activity and stability for up to 24 months

**Storage Buffer** 20 mM Tris-HCl, 50 mM NaCl, pH 7.5 at 25 centigrade.

**Unit definition** One unit refers to the amount of enzyme needed to hydrolyze more than 95% of terminal mannose in 1 nmol man ( $\alpha$  1,3)-man ( $\beta$  1,4)-glcnac-7-amino-4-methyl-coumarin (AMC) in 10  $\mu$ L total reaction system at 37 centigrade within one hour. Detection condition of unit activity: In 10  $\mu$ L reaction system,  $\alpha$ 1-2,3,6 mannosidase diluted twice was incubated with 1 nmol AMC labeled substrate in 1X GlycoBuffer 4 and 1 $\times$  zinc. The reaction mixture was incubated at 37 centigrade for 1 hour. The separation of reaction products was observed by TLC.

**Heat Inactivation** 95 centigrade for 10 minutes

**Reaction Buffer** 1 $\times$  GlycoBuffer 4, Supplement with 1 $\times$  Zinc, Incubate at 37 centigrade. 1 $\times$  GlycoBuffer 4: 50 mM sodium acetate (pH 4.5 at 25 centigrade)

## GENE INFORMATION

**Official Symbol**  $\alpha$ 1-2,3,6 Mannosidase

**Synonyms**  $\alpha$ 1-2,3,6 Mannosidase

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