

## Product Information

### Endoglycoceramidase II plus Activator II, from *Rhodococcus sp.*

Product Number **E4031**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

EC 3.2.1.123

Synonyms: EGCCase II; EGCCase II ACT;

Oligoglycosylglucosylceramide glycohydrolase

#### Product Description

Endoglycoceramidase II (EGCCase II) cleaves the linkage between oligosaccharides and ceramides of many glycosphingolipids.<sup>1,2</sup> It does not act on cerebrosides, phospholipids, or glycoproteins.<sup>1,2</sup> Activator II (ACT) is a protein that stimulates EGCCase II activity, rendering the enzyme more effective at neutral pH.<sup>3,4</sup> Activator II makes it possible to remove oligosaccharides of glycosphingolipids from the cell surface without damaging living cells or cell components.<sup>5,6</sup> The EGCCase II ACT combination is useful in the study of viral, bacterial, and toxin receptors, as well as modulation activities for cell proliferation, recognition, adhesion, and differentiation, including synapse formation.<sup>7</sup>

The molecular weight of EGCCase II is 58.9 kDa and the molecular weight of ACT is 69.2 kDa. The optimum pH for the enzyme is 5.5, although ACT allows EGCCase II to function at neutral pH. EGCCase II ACT is inhibited by 1 mM of  $\text{Hg}^{2+}$ ,  $\text{Zn}^{2+}$ , and  $\text{Cu}^{2+}$ .

This enzyme/activator preparation was isolated and purified from *Rhodococcus sp.* This enzyme/activator preparation is essentially free from the following exoglycosidase and other enzyme activities:

$\alpha$ -galactosidase,  $\beta$ -galactosidase,  $\alpha$ -mannosidase,  $\alpha$ -N-acetylgalactosaminidase,  $\alpha$ -fucosidase,  $\beta$ -N-acetylgalactosaminidase, sialidase,  $\beta$ -N-acetylglucosaminidase, glycopeptidase, endo- $\beta$ -acetylglucosaminidase, proteinase, and sphingomyelinase.

The product is supplied as 1 vial containing 0.1 unit of EGCCase II and 50 nmoles of Activator II in 100  $\mu\text{l}$  of 20 mM PBS, pH 7.0. This preparation is free of any detergents.

**Unit Definition:** One unit will catalyze the hydrolysis of 1  $\mu\text{mole}$  of asialo- $\text{G}_{\text{M}1}$  per minute at  $37\text{ }^{\circ}\text{C}$  at pH 5.0.

#### Substrate Specificity:

Substrate	Hydrolysis (%)
<b>Ganglio series</b>	
$\text{G}_{\text{T}1\text{b}}$	100
$\text{G}_{\text{D}1\text{a}}$	100
$\text{G}_{\text{M}1\text{a}}$	85
$\text{G}_{\text{M}3}$	100
Asialo- $\text{G}_{\text{M}1}$	100
<b>Neolacto series</b>	
IV NeuAca-nLC4	100
III FUCa-nLC4 (Lewis X)	100
<b>Lacto series</b>	
Lactosylceramide	83
<b>Cerebrosides</b>	
Glucosyl ceramide	0
Galactosyl ceramide	0
Sulfatide	0

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

The product ships on dry ice and storage at or below  $-20\text{ }^{\circ}\text{C}$  is recommended until use. Store the solution in aliquots at  $-20\text{ }^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles.

#### References

- Ito, M., and Yamagata, T., J. Biol. Chem., **261**, 14278-14282 (1986).
- Ito, M., and Yamagata, T., J. Biol. Chem., **264**, 9510-9519 (1989).
- Ito, M. *et al.*, J. Biol. Chem., **266**, 7919-7926 (1991).
- Ito, M. *et al.*, J. Biochem., **110**, 328-332 (1991).
- Ito, M. *et al.*, Eur. J. Biochem., **218**, 637-643 (1993).
- Ito, M. *et al.*, Eur. J. Biochem., **218**, 645-649 (1993).
- Muramoto, K. *et al.*, Biochem. Biophys. Res. Comm., **202**, 398-402 (1994).

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