

Product Information

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

Product Number **E 2277**

Storage Temperature -20 °C

E.C.# 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.^{1,2} It does not act on cerebrosides, phospholipids, or glycoproteins.^{1,2}

Activator II (ACT) is a protein that stimulates EGCCase II activity, rendering the enzyme more effective at neutral pH.^{3,4} Activator II makes it possible to remove oligosaccharides of glycosphingolipids from the cell surface without damaging living cells or cell components.^{5,6} The EGCCase II ACT 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.⁷

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 it to function at neutral pH. EGCCase II ACT is inhibited by 1 mM of Hg²⁺, Zn²⁺, and Cu²⁺.

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:

α -galactosidase, β -galactosidase, α -mannosidase, α -N-acetylgalactosaminidase, α -fucosidase, β -N-acetylgalactosaminidase, sialidase, β -N-acetylglucosaminidase, glycopeptidase, endo- β -acetylglucosaminidase, proteinase, and sphingomyelinase.

The product is supplied as a 0.1 unit of EGCCase II and 50 nmoles of Activator II in 100 μ 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 μ mole of asialo-G_{M1} per minute at 37 °C at pH 5.0.

Substrate Specificity:

Substrate	Hydrolysis (%)
Ganglio series	
GT 1b	100
GD 1a	100
GM1a	85
GM3	100
Asialo GM1	100
Neolacto series	
IV NeuAca-nLC4	100
III FUCa-nLC4 (Lewis X)	100
Lacto series	
Lactosylceramide	83
Cerebrosides	
Glucosyl ceramide	0
Galactosyl ceramide	0
Sulfatide	0

Precautions and Disclaimer

This product is for laboratory research use only. 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 °C is recommended until use. Store the solution in aliquots at -20 °C. Avoid repeated freeze-thaw cycles.

References

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

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