

PRODUCT INFORMATION



SCDase (*Shewanella alga*, recombinant)

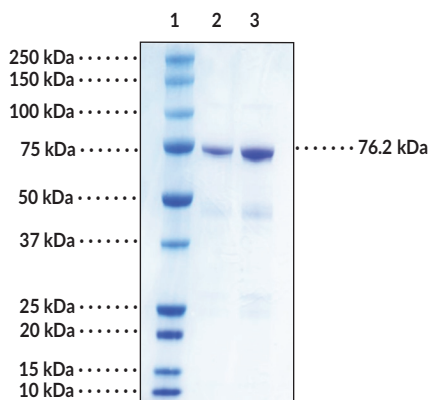
Item No. 38256

Overview and Properties

Synonyms:	Ricin-type β -trefoil Lectin Domain Protein, Sphingolipid Ceramide N-deacylase
Source:	Active recombinant <i>S. alga</i> C-terminal His-tagged SCDase expressed in <i>E. coli</i>
Amino Acids:	36-714
Uniprot No.:	NCBI Reference Sequence WP_144223911.1
Molecular Weight:	76.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 50\%$ estimated by SDS-PAGE
Supplied in:	50 mM sodium acetate, pH 6.0, with 0.1% Triton X-100 and 1 mM calcium chloride
Protein Concentration:	<i>batch specific</i> mg/ml
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to hydrolyze 1 μ mol of asialo ganglioside G_{M1} per minute at pH 6.0 and 30°C.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

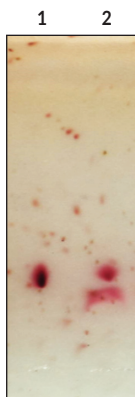
Images



Lane 1: MW Markers
Lane 2: SCDase (2 μ g)
Lane 3: SCDase (4 μ g)

SDS-PAGE Analysis of SCDase.

Representative gel image shown; actual purity may vary between each batch.



Lane 1: G_{M1} substrate (no enzyme control reaction)
Lane 2: 30 min conversion using 1.5 mM substrate (loaded 2 μ l)

TLC Analysis of G_{M1} Conversion by Purified SCDase. Assay was performed in 50 μ l end volume containing 50 μ g of SCDase enzyme with substrate G_{M1} (1.5 mM) in the assay buffer (50 mM sodium acetate buffer, pH 6.3, containing 100 mM calcium chloride and 0.1% Triton X-100). The reaction was incubated in a thermoshaker (300 rpm) at 30°C for 30 minutes. Analysis was done in a TLC plate (Analtech, 2.5 x 10 cm) using the solvent chloroform:methanol: 0.02% aqueous calcium chloride of 65:35:7.5.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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Description

Sphingolipid ceramide N-deacylase (SCDase) is an enzyme that catalyzes the hydrolysis or synthesis of the N-acyl linkage between the fatty acyl chain and sphingosine base in glycosphingolipids and sphingomyelin but not in free ceramide.^{1,2} It has a broad substrate specificity for both hydrolysis and synthesis with preferences for glycosphingolipids with large sugar moieties and charged head groups for the hydrolysis reaction and glycosphingolipids with more polar head groups for the synthesis reaction. SCDase has been used as a biocatalyst for the synthesis and hydrolysis of glycosphingolipids.^{1,3} Cayman's SCDase (*Shewanella alga*, recombinant) protein can be used for bioconversion and enzyme activity assay applications.

References

1. Han, Y.-B., Wu, L., Rich, J.R., *et al.* Comprehensive characterization of sphingolipid ceramide N-deacylase for the synthesis and fatty acid remodeling of glycosphingolipids. *Appl. Microbiol. Biotechnol.* **99**(16), 6715-6726 (2015).
2. Ito, M., Kurita, T., and Kita, K. A novel enzyme that cleaves the N-acyl linkage of ceramides in various glycosphingolipids as well as sphingomyelin to produce their lyso forms. *J. Biol. Chem.* **270**(41), 24370-24374 (1995).
2. Chakrabertyk, R., Reiz, B., and Cairo, C.W. Profiling of glycosphingolipids with SCDase digestion and HPLC-FLD-MS. *Anal. Biochem.* **631**, 114361 (2021).

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