

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Ser111-Ser1099 (Ser231Gly), with a C-terminal 6-His tag
Accession # Q8WY21.3

N-terminal Sequence Analysis Ser111

Predicted Molecular Mass 112 kDa

SPECIFICATIONS

SDS-PAGE 130-140 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
Immobilized rhSorCS1 at 1 µg/mL (100 µL/well) can bind rhβ-NGF with an apparent K_D <75 nM.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >85%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

SorCS1 is a type I transmembrane receptor of the mammalian Vps10p (vacuolar protein-sorting 10 protein) family (1, 2). These sorting receptors include sortilin, SorLA, and three SorCS proteins. Three splicing variants (SorCS1a, b and c) differ only in their cytoplasmic domains (3). All variants are predominantly expressed in the central nervous system, but SorCS1 can also be identified in heart, kidney and pancreatic islets (2 - 5). SorCS1a mediates endocytosis, and only ~10% of it is expressed on the cell surface. SorCS1b shows higher surface expression (~45%) and is much less involved in endocytosis. SorCS1c is intermediate. Human SorCS1a is synthesized as a 1159 amino acid (aa) preproform with a 33 aa signal sequence and a 77 aa propeptide. After proteolytic processing at a furin-type consensus sequence, the mature SorCS1a is a 1049 aa, 130 kDa protein with a 989 aa extracellular/luminal domain (ECD). Within the ECD, human SorCS1 shares 93%, 94%, 93% and 98% aa identity with mouse, rat, bovine and canine SorCS1, respectively. It also shares 70% and 46% aa identity with the ECD of human SorCS3 and SorCS2, respectively. The ECD contains an imperfect leucine-rich repeat (LRR) and a Vps10p domain and binds the growth factor PDGF-BB (1, 2, 6). Expression in the hippocampus indicates that SorCS1 may modulate PDGF-BB activity in this location (6). SorCS1 has also been identified as a susceptibility gene for type 2 diabetes in overweight females (4). Consequently, it has been proposed to affect insulin secretion by modifying PDGF-mediated growth of the islet vasculature (7). The 80 kDa ECD may be constitutively or inducibly shed, mainly via the metalloproteinase TACE/ADAM17 (6). The shed soluble form also binds PDGF. The cellular portion appears to undergo regulated intramembrane proteolysis (8).

References:

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3. Hermey, G. *et al.* (2003) *J. Biol. Chem.* **278**:7390.
4. Clee, S.M. *et al.* (2006) *Nat. Genet.* **38**:688.
5. Hermey, G. *et al.* (2001) *Neurosci. Lett.* **313**:83.
6. Hermey, G. *et al.* (2006) *Biochem. J.* **395**:285.
7. Goodarzi, M.O. *et al.* (2007) *Diabetes Apr 10* [Epub ahead of print].
8. Nyborg, A.C. *et al.* (2006) *Mol. Neurodegen.* **1**:3.