

PCSK1 Protein, Human, Recombinant (His)

General Information

Synonyms:	proprotein convertase subtilisin/kexin type 1;SPC3;PC1;BMIQ12;NEC1;PC3
Protein Construction:	A DNA sequence encoding the human PCSK1 (NP_000430.3) (Met 1-Arg 617) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 111
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P29120-1
Molecular Weight:	57.4 kDa (predicted); 66 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 25 mM Tris, 150 mM NaCl, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Neuroendocrine convertase 1, also known as Prohormone convertase 1, Proprotein convertase 1, PCSK1 and NEC1, is an enzyme which belongs to the peptidase S8 family and Furin subfamily. PCSK1 is an enzyme that performs the proteolytic cleavage of prohormones to their intermediate (or sometimes completely cleaved) forms. It is present only in neuroendocrine cells such as brain, pituitary and adrenal, and most often cleaves after a pair of basic residues within prohormones but can occasionally cleave after a single arginine. It binds to a protein known as

proSAAS, which also represents its endogenous inhibitor. PCSK1 is involved in the processing of hormone and other protein precursors at sites comprised of pairs of basic amino acid residues. PCSK1 substrates include POMC, renin, enkephalin, dynorphin, somatostatin and insulin. Defects in PCSK1 are the cause of proprotein convertase 1 deficiency (PC1 deficiency). PC1 deficiency is characterized by obesity, hypogonadism, hypoadrenalism, reactive hypoglycemia as well as marked small-intestinal absorptive dysfunction. It is due to impaired processing of prohormones.

Reference

- Jackson RS. et al., 2003, J. Clin. Invest. 112:1550-60.
Farooqi I.S. et al., 2007, J. Clin. Endocrinol. Metab. 92: 3369-73.
Benzinou, M. et al., 2008, Nat Genet. 40 (8):943-5.
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Renström F, et al., 2009, Hum. Mol. Genet. 18 (8): 1489-96.

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