Recombinant Human Proprotein Convertase 9/PCSK9

Catalog Number: 3888-SE

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Proprotein Convertase 9/PCSK9 protein Gln31-Gln152 & Ser153-Gln692, with a C-terminal 10-His tag Accession # Q8NBP7
N-terminal Sequence Analysis	Ser153 (mature form); No results obtained for pro domain, Gln31 inferred from enzymatic pyroglutamate treatment revealing Glu32
Structure / Form	Mature form & pro domain
Predicted Molecular Mass	14 kDa & 59 kDa

SPECIFICATIONS

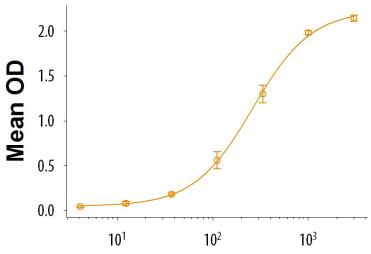
SDS-PAGE	19 kDa & 66 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human LDL R (Catalog # 2148-LD) is coated at 2 µg/mL, Recombinant Human Proprotein Convertase 9/PCSK9 binds with an ED_{50} of 70-420 ng/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in Tris, NaCl and Glycerol. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 6 months from date of receipt, -20 to -70 °C as supplied. ● 3 months, -20 to -70 °C under sterile conditions after opening.

DATA

Binding Activity



When Recombinant Human LDL R (Catalog # 2148-LD) is coated at 2 µg/mL, Recombinant Human Proprotein Convertase 9/PCSK9 (Catalog # 3888-SE) binds with an ED_{50} of 70-420 ng/mL.

BACKGROUND

The human PCSK9 gene encodes Proprotein Convertase 9 (PC9), which is also known as Neural Apoptosis Regulated Convertase 1 (NARC1) (1). The deduced amino acid sequence of human PCSK9 consists of a signal peptide (residues 1 to 30), a pro peptide (residue 31 to 152), and a mature chain (residues 153 to 692) that contains a serine protease domain (residues 161 to 431) found in members of the furin/PC family. PCSK9 protease activity may be limited, since it has only been demonstrated through its own autocatalytic processing (2). After the autocleavage in the ER, the pro domain and mature chain exit the cell together through non-covalent interactions (3). PCSK9 is a key regulator of LDL-cholesterol levels (LDL-C) through binding of the LDL receptor, resulting in the reduction of receptor recycling to the cell surface and the acceleration of receptor degradation in lysosomes (3). Both gain of function (GOF) and loss-of-function (LOF) mutations have been found in the PCSK9 gene (3). GOF mutations are linked to familial autosomal dominant hypercholesterolemia, a disease characterized by elevated plasma levels of LDL-C. In comparison, LOF mutations lead to low levels of LDL-C and protection against coronary heart disease.

References:

1. Seidah, N.G. *et al.* (2003) Proc. Natl. Acad. Sci. USA **100**:928.
2. Naureckiene, S. *et al.* (2003) Arch. Biochem. Biophys. **420**:55.
3. Costet, P. *et al.* (2008) Trends Biochem. Sci. **33**:426.

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