Data Sheet (Cat.No.TMPK-00741)

TargetMol

SEMA7A Protein, Human, Recombinant (His)

General Information

Synonyms:	Semaphorin-L;SEMAK1;CD108;MGC126692;Sema7A;CD108MGC126696;Semaphorin-K1; SEMAL;JMH;CDw108;Semaphorin-7A;H-SEMA-K1;Sema L;H-Sema-L
Protein Construction:	Gln45-Ala648
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O75326-1
Molecular Weight:	69.5 kDa (predicted). Due to glycosylation, the protein migrates to 70-75 kDa based on Tris-Bis PAGE result.

QC Testing

Biological Activity:	Activity has not been tested. 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 Tris-Bis PAGE; > 95% as determined by HPLC
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS (pH 7.4). Typically, 8% trehalose is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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

Semaphorin7A (Sema7A) plays an important role in the immunoregulation of the brain.Sema7A is upregulated in the epileptic brain and plays a potential role in the regulation of seizure activity in PTZ-kindled epileptic rats, which may be related to neuroinflammation. Sema7A promotes the inflammatory cytokines TNF-α and IL-6 as well as the growth of mossy fibers through the ERK pathway, suggesting that Sema7A may promote seizures by

increasing neuroinflammation and activating pathological neural circuits. Sema7A plays a critical role in epilepsy and could be a potential therapeutic target for this neurological disorder.

Reference

Deng J, Xu T, Yang J, Zhang KM, Li Q, Yu XY, Li R, Fu J, Jiang Q, Ma JX, Chen YM. Sema7A, a brain immune regulator, regulates seizure activity in PTZ-kindled epileptic rats. CNS Neurosci Ther. 2020 Jan;26(1):101-116. doi: 10.1111/cns.1318Epub 2019 Jun 9. PMID: 31179640; PMCID: PMC6930824.

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