Data Sheet (Cat.No.TMPY-03653)

TargetMol

CTRL Protein, Human, Recombinant (His)

General Information

Synonyms:	CTRL1;chymotrypsin-like
Protein Construction:	A DNA sequence encoding the human CTRL (P40313) (Met1-Asn264) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Cys 19
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P40313
Molecular Weight:	59.5 kDa (predicted); 35 and 32 kDa (reducing conditions)

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/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, 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

CTRL-1, also known as chymotrypsin-like protease, belongs to thepeptidase S1 family. CTRL-1 contains 1peptidase S1 domain. Its expression is increased in preeclampsia (PE). Placental-derived chymotrypsin-like protease is responsible for inducing endothelial inflammatory phenotypic changes possibly by upregulation of cell adhesion molecule expressions, activation of cellular protease, and induction of extracellular regulated kinase phosphorylation. Activated microglia have been observed in various neurodegenerative diseases, including

Alzheimer's disease (AD), Parkinson's disease (PD), amyotrophic lateral sclerosis, and multiple sclerosis. Five structurally distinct inhibitors that are known to inhibit chymotrypsin-like proteases were partially protective. They might represent a novel class of drugs with benefit in diseases where overactivity of microglia contributes to the pathogenesis.

Reference

Yang Gu. et al., 2009, Reprod Sci. 16 (9): 905-13.
Klegeris A. et al., 2005, Glia. 51 (1):56-64.
Caroline V. Bamford. et al., 2007, nfect Immun. 75 (9): 4364-72.