Data Sheet (Cat.No.TMPY-06795)

TargetMol

CTHRC1 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	1110014B07Rik;collagen triple helix repeat containing 1
Protein Construction:	A DNA sequence encoding the Mouse CTHRC1 (Q9D1D6) (Met1-Lys245) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 33
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q9D1D6
Molecular Weight:	24.53 kDa (predicted); 26.38 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. ≥ 95 % as determined by SEC-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, 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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

Collagen triple helix repeat-containing protein 1, also known as Protein NMTC1, and CTHRC1, is a secreted protein that is glycosylated and highly conserved from lower chordates to mammals. CTHRC1 expression was not detectable in normal arteries. However, it is transiently expressed in the arterial wall in response to injury where it may contribute to vascular remodeling by limiting collagen matrix deposition and promoting cell migration. A short collagen motif with 12 Gly-X-Y repeats appears to be responsible for trimerization of the CTHRC1 protein and

this renders the molecule susceptible to cleavage by collagenase. CTHRC1 overexpression caused a dramatic reduction in collagen type I mRNA and protein levels. Currently available data indicate that Cthrc1 expression in vascular cells regulates transforming growth factor beta responsiveness, thereby impacting transforming growth factor beta target genes, including collagens. Additionally, CTHRC1 increases bone mass as a positive regulator of osteoblastic bone formation and offers an anabolic approach for the treatment of osteoporosis.

Reference

Pyagay P,et al.(2005) Collagen triple helix repeat containing 1, a novel secreted protein in injured and diseased arteries, inhibits collagen expression and promotes cell migration. Circ Res. 96(2): 261-8.
Durmus T,et al.(2006) Expression analysis of the novel gene collagen triple helix repeat containing-1 (Cthrc1). Gene Expr Patterns. 6(8): 935-40.
LeClair R,et al.(2007) The role of collagen triple helix repeat containing 1 in injured arteries, collagen expression, and transforming growth factor beta signaling. Trends Cardiovasc Med. 17(6): 202-5.
Kimura H,et al.(2008) Cthrc1 is a positive regulator of osteoblastic bone formation. PLoS One. 3(9): e3174.