

TCN2 Protein, Human, Recombinant (His)

General Information

Synonyms:	II;TC-2;D22S750;TC;TCII;TC2;transcobalamin II;D22S676
Protein Construction:	A DNA sequence encoding the human TCN2 (NP_000346.2) (Met 1-Trp 427) with a C-terminal polyhistidine tag was expressed. Predicted N terminal: Glu 19
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P20062-1
Molecular Weight:	46.7 kDa (predicted); 43 kDa (reducing conditions)

QC Testing

Biological Activity:	Immobilized CD320 Protein, Mouse, Recombinant (hFc Tag) at 2 µg/mL (100 µL/well) can bind TCN2 Protein, Human, Recombinant (His Tag), the EC50 is 10-62 ng/mL.
Purity:	> 90 % 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:
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

Transcobalamin II, also known as TCN2 and TC II, is a plasma protein that binds cobalamin (Cbl; vitamin B12) as it is absorbed in the terminal ileum and distributes to tissues. The circulating transcobalamin II-cobalamin complex binds to receptors on the plasma membrane of tissue cells and is then internalized by receptor-mediated endocytosis. Transcobalamin II is a non-glycosylated secretory protein of molecular mass 43 kDa. Its plasma membrane receptor (TC II-R) is a heavily glycosylated protein with a monomeric molecular mass of 62 kDa. Human

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TCN2 gene is composed of nine exons and eight introns spanning approximately 2 kb with multiple potential transcription start sites. A number of genetic abnormalities are characterized either by a failure to express TCN2 or by synthesis of an abnormal protein. The TCN2 deficiency results in cellular cobalamin deficiency, an early onset of megaloblastic anaemia, and neurological abnormalities.

Reference

Rothenberg, S. P. et al., 1995, Baillieres Clin Haematol. 8 (3):499-514.

Bibi, H. et al., 1999, J Inherit Metab Dis. 22 (7):765-772.

Seetharam, B. et al., 2000, Vitam Horm. 59 :337-366.

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