Data Sheet (Cat.No.TMPY-02718)

Doublecortin/DCX Protein, Human, Recombinant (aa 45-150, GST)

General Information

Synonyms:	XLIS;doublecortin;LISX;DBCN;DC;SCLH
Protein Construction:	A DNA sequence encoding the human DCX (O43602-2) N-terminal fragment (Ala 45-Val 150) was fused with the GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	O43602-2
Molecular Weight:	39.4 kDa (predicted); 36 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:	> 82 % as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 1 mM DTT, 10% glycerol, pH 7.5. 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

DCX (doublecortin, N-GST chimera)contains 2 doublecortin domains and belongs to the doublecortin family. It is highly expressed in neuronal cells of fetal brain, but not expressed in other fetal tissues. In the adult, it is highly expressed in the brain frontal lobe, but very low expression in other regions of brain, and not detected in heart, placenta, lung, liver, skeletal muscles, kidney and pancreas. DCX is a microtubule-associated protein required for initial steps of neuronal dispersion and cortex lamination during cerebral cortex development. It may act by

competing with the putative neuronal protein kinase DCAMKL1 in binding to a target protein. DCX may in that way participate in a signaling pathway that is crucial for neuronal interaction before and during migration, possibly as part of a calcium ion-dependent signal transduction pathway. It may be part with LIS-1 of a overlapping, but distinct, signaling pathways that promote neuronal migration. Defects in DCX are the cause of lissencephaly X-linked type 1 and subcortical band heterotopia X-linked.

Reference

Des Portes V, et al. (1998) A novel CNS gene required for neuronal migration and involved in X-linked subcortical laminar heterotopia and lissencephaly syndrome. Cell. 92:51-61.
Gleeson J G, et al. (1998) Doublecortin, a brain-specific gene mutated in human X-linked lissencephaly and double cortex syndrome, encodes a putative signaling protein. Cell. 92:63-72.
Ross M T, et al. (2005) The DNA sequence of the human X chromosome. Nature. 434:325-37.