

DCLK1 Protein, Human, Recombinant

General Information

Synonyms:	doublecortin-like kinase 1;CL1;DCLK;CLICK1;DCAMKL1;DCDC3A
Protein Construction:	A DNA sequence encoding the human DCLK1 (O15075-1) (Met 1-Val 705) was expressed and purified with two additional amino acids (Gly & Pro) at the N-terminus. Predicted N terminal: Gly
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	O15075-1
Molecular Weight:	78.5 kDa (predicted); 64 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	The specific activity was determined to be > 3.5 nmol/min/mg using synthetic Autocamtide-2 peptide (KKALRRQETVDAL-amide) as substrate.
Purity:	> 80 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 500 mM NaCl, 10% glycerol, pH 7.4.

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 the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

DCAMKL1, also known as DCLK1, is a member of the protein kinase superfamily and the doublecortin family. It contains two N-terminal doublecortin domains, which bind microtubules and regulate microtubule polymerization, a C-terminal serine/threonine protein kinase domain, which shows substantial homology to Ca²⁺/calmodulin-dependent protein kinase, and a serine/proline-rich domain in between the doublecortin and the protein kinase domains, which mediates multiple protein-protein interactions. DCAMKL1 is involved in several different cellular processes, including neuronal migration, retrograde transport, neuronal apoptosis and neurogenesis. Its microtubule-polymerizing activity is independent of its protein kinase activity. DCAMKL1 may be

involved in a calcium-signaling pathway controlling neuronal migration in the developing brain. It may also participate in functions of the mature nervous system.

Reference

Sossey-Alaoui K, et al. (1999) DCAMKL1, a brain-specific transmembrane protein on 13q12.3 that is similar to doublecortin (DCX). *Genomics*. 56 (1): 121-6.

Matsumoto N, et al. (1999) Genomic structure, chromosomal mapping, and expression pattern of human DCAMKL1 (KIAA0369), a homologue of DCX (XLIS). *Genomics*. 56 (2): 179-83.

Lin PT, et al. (2001) DCAMKL1 encodes a protein kinase with homology to doublecortin that regulates microtubule polymerization. *J Neurosci*. 20 (24): 9152-61.

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