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CASK Rabbit pAb

Catalog # AP99351

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	O14936
Other Accession	O14936
Reactivity	Rat
Predicted	Pig, Human, Mouse, Rabbit, Chicken, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	105123
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CASK
Epitope Specificity	651-750/926
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the MAGUK family. Contains 1 guanylate kinase-like domain. Contains 2 L27 domains. Contains 1 PDZ (DHR) domain. Contains 1 protein kinase domain. Contains 1 SH3 domain.
SUBUNIT	Binds WHRN and NRXN1 cytosolic tail. Interacts with CASKIN1, APBA1, LIN7(A/B/C) and L27 domain of DLG1 and isoform 2 of DLG4 (By similarity). CASK and LIN7 form two mutually exclusive tripartite complexes with APBA1 or CASKIN1 (By similarity). Interacts with FCHSD2. Interacts with TSPYL2. Part of a complex containing CASK, TRB1 and TSPYL2 (By similarity). Identified in a complex with ACTN4, IQGAP1, MAGI2, NPHS1, SPTAN1 and SPTBN1 (By similarity). Interacts with KIRREL3.
DISEASE	Defects in CASK are the cause of mental retardation X-linked CASK-related (MRXCASK) [MIM:300749]. Mental retardation is characterized by significantly below average general intellectual functioning associated with impairments in adaptative behavior and manifested during the developmental period. Patients with mental retardation X-linked CASK-related can manifest a severe phenotype consisting of severe intellectual deficit, congenital or postnatal microcephaly, disproportionate brainstem and cerebellar hypoplasia (MICPCH Syndrome). A milder phenotype consists of mental retardation alone or associated with nystagmus. Defects in CASK are the cause of FG syndrome type 4 (FGS4) [MIM:300422]. FG syndrome (FGS) is an X-linked disorder characterized by mental retardation, relative macrocephaly, hypotonia and constipation.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The MAGUK (membrane-associated guanylate kinase homologs) family of proteins contain multiple protein-binding domains and are involved in cell junction organization, tumor suppression, and signaling. CASK (also designated LIN-2) belongs to a MAGUK subfamily which is characterized by a novel domain structure that consists of a calcium/calmodulin- dependent protein kinase domain followed by PDZ, SH3 and guanylate kinase-like (GUK) domains. CASK is expressed in rat brain where it binds to cell-surface

proteins, such as neurexin and syndecan, and is thought to be involved in signaling at neuronal synapses. CASK translocates to the nucleus and interacts with Tbr-1 to form a complex, which binds to a specific DNA sequence (the T-element), and induces the expression of specific genes, including Reelin. CASK displays a transcription regulation function, which appears crucial for cerebrocortical development.

Additional Information

Gene ID	8573
Other Names	CAGH39; CAMGUK; CMG; FGS4; LIN2; MICPCH; MRXSNA; TNRC8; hCASK; DXPri1; DXRib1; LIN-2; Pals3; mLin-2; CSKP_HUMAN; CASK; Calcium/calmodulin-dependent serine protein kinase; Protein lin-2 homolog; 2.7.11.1; CSKP_MOUSE; CSKP_RAT; calcium/calmodulin dependent serine protein kinase; trinucleotide repeat containing 8; calcium/calmodulin-dependent serine protein kinase (MAGUK family)
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	CASK (HGNC:1497)
Synonyms	LIN2
Function	Multidomain scaffolding Mg(2+)-independent protein kinase that catalyzes the phosphotransfer from ATP to proteins such as NRXN1, and plays a role in synaptic transmembrane protein anchoring and ion channel trafficking (PubMed:18423203). Contributes to neural development and regulation of gene expression via interaction with the transcription factor TBR1. Binds to cell-surface proteins, including amyloid precursor protein, neurexins and syndecans. May mediate a link between the extracellular matrix and the actin cytoskeleton via its interaction with syndecan and with the actin/spectrin-binding protein 4.1. Component of the LIN-10-LIN-2-LIN-7 complex, which associates with the motor protein KIF17 to transport vesicles containing N-methyl-D- aspartate (NMDA) receptor subunit NR2B along microtubules (By similarity).
Cellular Location	Nucleus {ECO:0000250|UniProtKB:Q62915}. Cytoplasm {ECO:0000250|UniProtKB:Q62915}. Cell membrane {ECO:0000250|UniProtKB:Q62915}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q62915}
Tissue Location	Ubiquitous. Expression is significantly greater in brain relative to kidney, lung, and liver and in fetal brain and kidney relative to lung and liver.

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