10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

QK1 Rabbit pAb

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Catalog # AP54554

Product Information

Application	WB
Primary Accession	Q96PU8
Reactivity	Human
Predicted	Mouse, Rat, Chicken, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	37671
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human QK1
Epitope Specificity	220/341/341
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus. Cytoplasm.
SIMILARITY	Contains 1 KH domain.
SUBUNIT	Homodimer. Does not require RNA to homodimerize. Able to heterodimerize with BICC1
Post-translational modifications	Methylated by PRMT1. Tyrosine phosphorylated at its C-terminus, probably by FYN. Phosphorylation leads to decreased mRNA-binding affinity, affecting transport and/or stabilization of MBP mRNA.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	QKI is a 341 amino acid protein that localizes to both the cytoplasm and the nucleus and contains one KH domain. Expressed in the frontal cortex of the brain, QKI functions as an RNA-binding protein that plays an important role in myelinization and specifically binds to the RNA core sequence 5'-NACUAAY-N(1,20)-UAAY-3'. Additionally, QKI regulates pre-mRNA splicing, and mRNA export and is involved in protecting and promoting the stability of select mRNAs. QKI may be methylated by PRMT1 and may also be phosphorylated at its C-terminus, an event that decreases QKI mRNA-binding affinity. Defects or deletions in the gene encoding QKI are associated with astrocytic tumors and may be involved in the pathogenesis of schizophrenia. Multiple isoforms of QKI exist due to alternative splicing events.

Additional Information

Gene ID	9444
Other Names	KH domain-containing RNA-binding protein QKI, Protein quaking, Hqk, HqkI, QKI {ECO:0000303|PubMed:16342280, ECO:0000312|HGNC:HGNC:21100}

Target/Specificity	Expressed in the frontal cortex of brain. Down-regulated in the brain of schizophrenic patients.
Dilution	WB=1:500-2000
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.

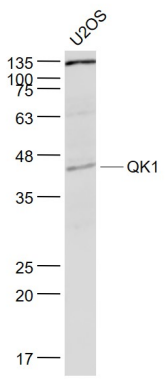
Protein Information

Name	QKI {ECO:0000303|PubMed:16342280, ECO:0000312|HGNC:HGNC:21100}
Function	RNA reader protein, which recognizes and binds specific RNAs, thereby regulating RNA metabolic processes, such as pre-mRNA splicing, circular RNA (circRNA) formation, mRNA export, mRNA stability and/or translation (PubMed:22398723, PubMed:23630077, PubMed:25768908, PubMed:27029405, PubMed:31331967, PubMed:37379838). Involved in various cellular processes, such as mRNA storage into stress granules, apoptosis, lipid deposition, interferon response, glial cell fate and development (PubMed:25768908, PubMed:31829086, PubMed:34428287, PubMed:37379838). Binds to the 5'-NACUAAY-N(1,20)-UAAY-3' RNA core sequence (PubMed:23630077). Acts as a mRNA modification reader that specifically recognizes and binds mRNA transcripts modified by internal N(7)-methylguanine (m7G) (PubMed:37379838). Promotes the formation of circular RNAs (circRNAs) during the epithelial to mesenchymal transition and in cardiomyocytes: acts by binding to sites flanking circRNA-forming exons (PubMed:25768908). CircRNAs are produced by back- splicing circularization of pre-mRNAs (PubMed:25768908). Plays a central role in myelinization via 3 distinct mechanisms (PubMed:16641098). First, acts by protecting and promoting stability of target mRNAs such as MBP, SIRT2 and CDKN1B, which promotes oligodendrocyte differentiation (By similarity). Second, participates in mRNA transport by regulating the nuclear export of MBP mRNA (By similarity). Finally, indirectly regulates mRNA splicing of MAG pre- mRNA during oligodendrocyte differentiation by acting as a negative regulator of MAG exon 12 alternative splicing: acts by binding to HNRNPA1 mRNA splicing factor, preventing its translation (By similarity). Involved in microglia differentiation and remyelination by regulating microexon alternative splicing of the Rho GTPase pathway (By similarity). Involved in macrophage differentiation: promotes monocyte differentiation by regulating pre-mRNA splicing in naive peripheral blood monocytes (PubMed:27029405). Acts as an important regulator of muscle development: required for the contractile function of cardiomyocytes by regulating alternative splicing of cardiomyocyte transcripts (By similarity). Acts as a negative regulator of thermogenesis by decreasing stability, nuclear export and translation of mRNAs encoding PPARGC1A and UCP1 (By similarity). Also required for visceral endoderm function and blood vessel development (By similarity). May also play a role in smooth muscle development (PubMed:31331967). In addition to its RNA-binding activity, also acts as a nuclear transcription coactivator for SREBF2/SREBP2 (By similarity).
Cellular Location	Nucleus. Cytoplasm [Isoform QKI6]: Cytoplasm, cytosol. Nucleus Note=Localizes predominantly in the cytoplasm and at lower levels in nucleus.
Tissue Location	Expressed in the frontal cortex of brain. Down- regulated in the brain of schizophrenic patients

Background

QKI is a 341 amino acid protein that localizes to both the cytoplasm and the nucleus and contains one KH domain. Expressed in the frontal cortex of the brain, QKI functions as an RNA-binding protein that plays an important role in myelinization and specifically binds to the RNA core sequence 5'-NACUAAY-N(1,20)-UAAY-3'. Additionally, QKI regulates pre-mRNA splicing, and mRNA export and is involved in protecting and promoting the stability of select mRNAs. QKI may be methylated by PRMT1 and may also be phosphorylated at its C-terminus, an event that decreases QKI mRNA-binding affinity. Defects or deletions in the gene encoding QKI are associated with astrocytic tumors and may be involved in the pathogenesis of schizophrenia. Multiple isoforms of QKI exist due to alternative splicing events.

Images



Sample:
U2OS(Human) Cell Lysate at 30 ug
Primary: Anti- QK1 (AP54554) at 1/1000 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 38 kD
Observed band size: 40 kD