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Datasheet for 200-401-B48S

CENP-Q Antibody

Overview

Description:	Anti-CENP-Q (RABBIT) Antibody - 200-401-B48S
Item No.:	200-401-B48S
Size:	25 µL
Applications:	ELISA, IF, Multiplex, WB
Reactivity:	Human
Host Species:	Rabbit

Product Details

Background:	This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. Cenp-Q (also known as centromere protein Q or CENPQ) is a nuclear/centromeric protein that is one of the critical components that constitutes the CENP-O complex at the kinetochores and appears to stabilize PBIP1/CENP-U(50)/MLF1IP in the complex. This complex is important for proper recruitment of polo-like kinase 1 (Plk1) to the mitotic kinetochores. A failure in this process results in improper microtubule attachment to the kinetochores and chromosome missegregation that ultimately lead to aneuploidy.
Synonyms:	rabbit anti-CENP-Q Antibody, CenpQ, centromere protein Q, CENP Q
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	CENPQ
Reactivity:	Human
Immunogen Type:	Recombinant Protein
Immunogen:	This protein A purified antibody was prepared from whole rabbit serum produced by repeated immunizations with full-length human CENP-Q recombinant protein.

Purity/Specificity:	This product was protein A purified from monospecific antiserum by immunoaffinity chromatography using protein A coupled to agarose beads. This antibody is specific for human CENP-Q protein. A BLAST analysis of the full length sequence was used to suggest partial cross-reactivity with CENP-Q based on the following percentage homologies: macaque (91%), horse (76%), bovine (74%), dog (73%), swine (71%), mouse (65%) and rat (60%). Cross-reactivity with CENP-Q from other sources has not been determined.
Relevant Links:	• NCBI - 40068061 • UniProtKB - Q7L2Z9 • GeneID - 55166

Application Details

Tested Applications:	ELISA, IF, Multiplex, WB
Application Note:	This protein A purified antibody has been tested for use in ELISA, immunofluorescence microscopy and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 26-31 kDa in size corresponding to human CENP-Q by western blotting in the appropriate cell lysate or extract.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:5,000 1:20,000
IF:	User Optimized
WB:	1:100 - 1:500

Formulation

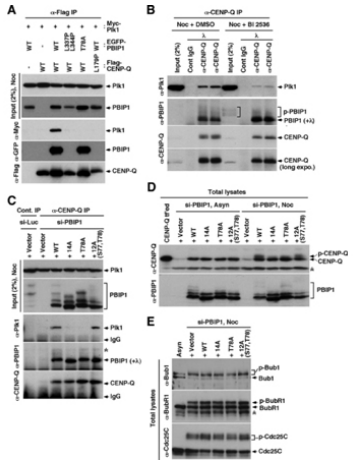
Physical State:	Liquid (sterile filtered)
Concentration:	1.15 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

Shipping & Handling

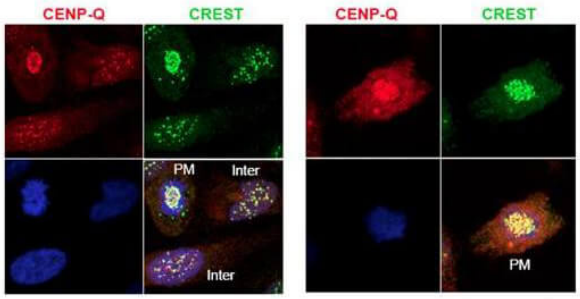
Shipping Condition:	Dry Ice

Storage Condition:	Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is three (3) months from date of receipt.

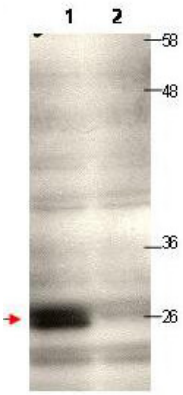
Images



Western Blot
The Plk1 interacts with and phosphorylates CENP-Q via the PBIP1 T78 motif. A and B, HeLa cells transfected with the indicated constructs were subjected to immunoprecipitation analyses. Where indicated, cells were treated with nocodazole for 18 h and BI 2536 for 4 h before harvest. Immunoprecipitates were reacted with λ phosphatase to convert all the phosphorylated, slow-migrating forms to non-phosphorylated form for easy detection by immunoblotting analysis. Bracket, hyperphosphorylated PBIP1 forms. C, HeLa cells expressing the indicated RNAi-insensitive constructs were depleted of control luciferase (si-Luc) or endogenous PBIP1 (si-PBIP1), and then treated with nocodazole for 18 h before harvest. Samples were immunoprecipitated with control IgG (first lane) or anti-CENP-Q antibody and the immunoprecipitates were treated with λ phosphatase before immunoblotting analyses. Asterisk, a cross-reacting protein. Note that cells depleted of PBIP1 exhibited a greatly diminished level of CENP-Q immunoprecipitates due to its instability in the absence of PBIP1 (lane 2). D and E, The cells used in C were depleted of endogenous PBIP1 (si-PBIP1), and then either left untreated or treated with nocodazole before harvest. Samples were separated 10% SDS-PAGE and immunoblotted. Transfected CENP-Q (no tag) in lane 1 denotes the position of endogenous CENP-Q. Note that the T78-dependent PBIP1 function is required for mitotic-specific phosphorylation of CENP-Q (D), but not for other Plk1 substrates, such as Bub1, BubR1, and Cdc25C (E). Asterisks, cross-reacting proteins. Fig 4.
PMID: 21454580



Immunofluorescence Microscopy
Immunofluorescence microscopy using Rockland's protein A purified anti-CENP-Q antibody shows detection of endogenous CENP-Q in HeLa whole cell lysate. Primary antibody was used at 1:100 followed by secondary antibody diluted 1:150. Red punctate anti-CENP-Q signal colocalizes in overlay images with green punctate anti-CREST signals at the kinetochores (attached points of sister chromatids). Visible are colocalized CENP-Q and CREST signal at various stages of the cell cycle as indicated from interphase to the end of mitosis. Nuclei are counter stained with bisbenzimide. Personal Communication, Kyung S. Lee, CCR-NCI, Bethesda, MD



Western Blot
Western blot using Rockland's protein A purified anti-CENP-Q antibody shows detection of endogenous CENP-Q in a HeLa whole cell lysate (lane 1, arrowhead). The blot was incubated for 1.5 hours at room temperature using the primary antibody diluted to 0.5µg/mL, followed by washes and incubation with to the secondary antibody. Lane 1: Lysates from HeLa cells transfected with control sh-virus wherein the expression of CENP-Q is expected to not to alter. Lane 2: Lysates from HeLa cells transfected with Cenp-Q sh-virus wherein the expression of CENP-Q is knocked down significantly to a level where it is not being detected at all under the tested condition/WB exposure time. Personal Communication, Kyung S. Lee, CCR-NCI, Bethesda, MD.

References

- Kang YH, Park CH, Kim TS, Soung NK, Bang JK, Kim BY, Park JE, Lee KS. Mammalian polo-like kinase 1-dependent regulation of the PBIP1-CENP-Q complex at kinetochores. *Journal of Biological Chemistry* (2011)

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