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Product Specification Sheet

Product: Affinity Purified Anti-Human BRRN-1 [Rabbit]

Code: 600-401-682

Lot #: 14491cr

Size: 100 µg

Physical State: Liquid (sterile filtered)

Antibody Concentration: 0.93 mg/ml (by UV absorbance at 280 nm)

Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

Stabilizer: None

Preservative: 0.01% (w/v) Sodium Azide

Storage Conditions: Store vial at -20° C prior to opening. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.

Background Information: BRNN1, also called Barren, Condensin subunit 2, Barren homolog protein 1, Chromosome-associated protein H, hCAP-H, and XCAP-H homolog, is encoded by a gene that is a member of the barr gene family. Brnn1 is the regulatory subunit of the condensin complex, a complex required for conversion of interphase chromatin into mitotic-like condense chromosomes. The condensin complex probably introduces positive supercoils into relaxed DNA in the presence of type I topoisomerases and converts nicked DNA into positive knotted forms in the presence of type II topoisomerases. The condensin complex contains the SMC2L1 and SMC4L1 heterodimer, and three non SMC subunits that probably regulate the complex: BRRN1/CAPH, CNAP1/CAPD2 and CAPG. BRRN1 has both a nuclear and cytoplasmic localization. In interphase cells, the majority of the condensin complex is found in the cytoplasm, while a minority of the complex is associated with chromatin. A subpopulation of the complex however remains associated with chromosome foci in interphase cells. During mitosis, most of the condensin complex is associated with the chromatin. At the onset of prophase, the regulatory subunits of the complex are phosphorylated by CDC2 leading to condensin's association with chromosome arms and to chromosome condensation. Dissociation from chromosomes is observed in late telophase. BRRN1 is widely expressed at low level in most proliferating cells. CDC2 phosphorylates BRRN1. Its phosphorylation, as well as that of CNAP1 and CAPG subunits, activates the condensin complex and is required for chromosome condensation.

Application Note(s): This affinity purified antibody has been tested for use in ELISA and by western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 83 kDa in size corresponding to human BRRN1 by western blotting in the appropriate cell lysate or extract.

Recommended Dilutions:	ELISA	1:8,000 - 1:35,000
	WESTERN BLOT	1:500 - 1:2,000
	IF MICROSCOPY	User Optimized
	OTHER APPLICATIONS	User Optimized

Purity and Specificity: This is an affinity purified antibody produced by immunoaffinity chromatography using the immunizing peptide after immobilization to a solid phase. Reactivity occurs against human BRRN1 protein. However, BLAST analysis indicates 100% homology (18/18) for this protein from human, and chimpanzee. Partial cross reactivity is expected against mouse, dog, rat chicken, and from based on sequence homology of the amino terminal 13 amino acids of the immunogen sequence. The core 8 amino acids of the immunogen, A-G-P-D-H-W-R-F, show 100% identity with numerous proteins from a variety of organisms. If blots show multiple banding patterns in any particular lysate, it is suggested to confirm the specific reactivity against the BRRN1 protein using peptide competition. Reactivity with Brnn1 proteins from other sources is not known.

Relevant Link(s): Swiss Prot: [Q15003](#) NCBI Link [NP_056156](#)

Protein Sequence: Human BRRN1, 741 aa, predicted MW 82.5 kDa

1	mgppgpalpa	tmnnssetr	ghphsassps	ervfpmplpr	kaplnipgtp	vledfpqndd
61	ekerlqrrrs	rvfdlqfst	sprllaspss	rsidisatip	kftntqiteh	ystciklste
121	nkittknafg	lhldfmsei	lkqkdteptn	fkvaagtlda	stkiyavrvd	avhadvyrvl
181	gglgkdapsl	eeveghvadg	satemgttkk	avkpkkkhlh	rtieqninnl	nvseadrkce
241	idpmfqktaa	sfdecstagv	flstlhcqdy	rsellfpsdv	qtlstgeple	lpefgcvemt
301	dlkaplqqca	edrqicpsla	gfqftqwdse	thnesvsalv	dkfkknqdvf	dinaevdesd
361	cgdfpdgslg	ddfdandepd	htavgdheef	rswkepcqvq	scqeemislg	dgdirtmcpl
421	lsmkpgeysy	fsprtmsmwa	gpdhwrfrpr	rkqdapsqse	nkkkstkddf	eidfeddidf
481	dvyfrtkkaa	tiltkstlen	qnwrattlpt	dfnyrvdtlv	qlhlpqgtrl	lkmaqghrve
541	tehyeeiedy	dynnpndtsn	fcpglqaads	ddeiddlflv	gpvgnsdlsp	ypchppktaq
601	qngdtpeaqq	ldittygesn	lvaepqkvnk	ieihyaktak	kmdmkkkqqs	mwslltalsg
661	keadaeanhr	eagkeaalae	vadekmlsgl	tkdlqrsllp	vmaqnlispl	afacilhlhan
721	eknlklegte	dlsdvlvrqg	d			

Immunogen: This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to amino acids 440-457 of Human BRRN-1.

General References:

Cabello, O.A., Baldini, A., Bhat, M., Bellen, H. and Belmont, J.W. (1997) Localization of BRRN1, the human homologue of *Drosophila* barr, to 2q11.2. *Genomics* **46** (2), 311-313 (1997).

Cabello O.A., et al., (2001) Cell cycle-dependent expression and nucleolar localization of hCAP-H. *Mol. Biol. Cell* **12**:3527-3537.

Kimura K., Cuvier O., Hirano T. (2001) Chromosome condensation by a human condensin complex in *Xenopus* egg extracts. *J. Biol. Chem.* **276**:5417-5420.

Related Products:

#000-001-682	CONTROL PEPTIDE for Catalog #600-401-682 Affinity Purified Affinity Purified Anti-BRRN-1 [Rabbit]
#611-703-127	Peroxidase Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (DONKEY) MX10
#611-132-122	IRDye800 Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (GOAT) MX10
#MB-070	Blocking Buffer for Fluorescent Western Blotting
#KIA-003	MaxTag TM Anti-RABBIT IgG Kit for Immunoblotting

USDA Certification: All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation.

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.