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

CBX4 Antibody

Catalog # ASC11535

Product Information

Application	WB, IF, E
Primary Accession	O00257
Other Accession	NP_003646, 55770830
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	61368
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CBX4 antibody can be used for detection of CBX4 by Western blot at 1 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	8535
Other Names	E3 SUMO-protein ligase CBX4, 6.3.2.-, Chromobox protein homolog 4, Polycomb 2 homolog, Pc2, hPc2, CBX4
Target/Specificity	CBX4; Two alternatively spliced transcript variants have been observed.
Reconstitution & Storage	CBX4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	CBX4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CBX4
Function	E3 SUMO-protein ligase that catalyzes sumoylation of target proteins by promoting the transfer of SUMO from the E2 enzyme to the substrate (PubMed:12679040, PubMed:22467880, PubMed:22825850). Also acts as a histone reader, which specifically recognizes and binds histone H3 trimethylated at 'Lys-9' and 'Lys-27' (H3K9me3 and H3K27me3, respectively) via its chromo domain (By similarity). Catalyzes sumoylation of HNRNPK, a p53/TP53 transcriptional coactivator, hence indirectly regulates p53/TP53 transcriptional activation resulting in p21/CDKN1A expression (PubMed:22825850). Acts as a regulator of brown adipocyte differentiation by mediating sumoylation of PRDM16, thereby preventing PRDM16

	ubiquitination and degradation (By similarity). Monosumoylates ZBTB35 (PubMed:22467880). Component of a Polycomb group (PcG) multiprotein PRC1-like complex, a complex class required to maintain the transcriptionally repressive state of many genes, including Hox genes, throughout development (PubMed:12167701, PubMed:19636380, PubMed:21282530). PcG PRC1 complex acts via chromatin remodeling and modification of histones; it mediates monoubiquitination of histone H2A 'Lys-119', rendering chromatin heritably changed in its expressibility (PubMed:12167701, PubMed:19636380, PubMed:21282530). Plays a role in the lineage differentiation of the germ layers in embryonic development (By similarity).
Cellular Location	Cytoplasm. Nucleus. Nucleus speckle. Note=Localization to nuclear polycomb bodies is required for ZBTB35 sumoylation (PubMed:22467880) Localized in distinct foci on chromatin (PubMed:18927235)
Tissue Location	Ubiquitous.

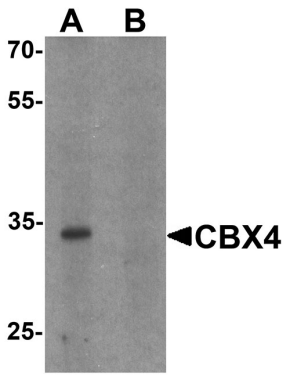
Background

CBX4 Antibody: Polycomb group (PcG) proteins are chromatin-associated proteins which are important for embryonic and adult stem cell self-renewal and maintenance. At least two distinct human PcG complexes have been identified. Polycomb repressive complex I (PRC1) contains CBX4/Pc2, HPH1 and RING domain-containing proteins (RING1, RING2 and BMI1). CBX4 (Chromobox protein homolog 4 or PC2), which functions as a transcriptional suppressor, is a candidate of KyoT2-binding proteins. It is a E3 SUMO-protein ligase which facilitates SUMO1 conjugation. Depletion of CBX4 results in decreased cellular resistance to ionizing radiation. CBX4 is directly involved in the cellular response to DNA damage.

References

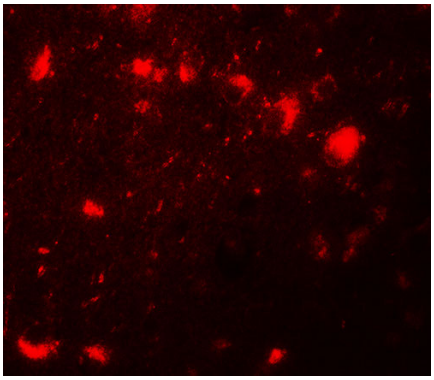
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Gieni RS and Hendzel MJ. Polycomb group protein gene silencing, non-coding RNA, stem cells, and cancer. Biochem. Cell Biol. 2009; 87:711-46.
Luis NM, Morey L, Mejetta S, et al. Regulation of human epidermal stem cell proliferation and senescence requires polycomb-dependent and -independent functions of Cbx4. Cell. Stem Cell 2011; 9:233-46.
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Images



Western blot analysis of CBX4 in human brain tissue lysate with CBX4 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.

Immunofluorescence of CBX4 in human brain tissue with CBX4 antibody at 20 µg/mL.



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