Revision 4

Store at -20C

#14894

COBRA1 (D6K9A) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, ChIP, ChIP-seq	H M R Mk	Endogenous	65	Rabbit IgG	#Q8WX92	25920

Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Chromatin IP	1:50
Chromatin IP-seq	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

COBRA1 (D6K9A) Rabbit mAb recognizes endogenous levels of total COBRA1 protein.

Species predicted to react based on 100% sequence homology

Hamster, Bovine

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human COBRA1 protein.

Background

Negative Elongation Factor (NELF) consists of four subunits: WHSC2 (NELF-A), COBRA-1 (NELF-B), TH1L (NELF-C/D), and NELF-E (1). NELF, together with DRB-sensitivity inducing factor (DSIF), inhibits RNA Polymerase II (RNAPII) elongation resulting in RNAPII promoter proximal pausing, where it waits additional signaling to resume transcription (2,3). The release of RNAPII from promoter proximal pausing is a critical regulatory point during transcription and is signaled by positive transcription elongation factor (p-TEF-b) phosphorylation of both NELF and the carboxy-terminal domain (CTD) within the largest subunit of RNAPII (3,4). WHSC2 is thought to connect the NELF complex to RNAPII machinery, while NELF-E contains an RNA binding motif that is necessary for NELF function (1,5,6). TH1L, together with COBRA-1, are integral subunits that bring WHSC2 and NELF-E together in the NELF complex (1).
Cofactor of BRCA1 (COBRA1, NELF-B) was first identified as a factor that interacts with the BRCT domain of the tumor suppressor protein BRCA1 (7). COBRA1 is a modulator of ligand dependent and independent expression of estrogen receptor-α target genes (8,9). COBRA1 expression is reduced in metastatic and recurrent breast cancer, suggesting that low levels of COBRA1 in breast cancers may serve as an indicator for poor prognosis (10).

Background References

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2. Nechaev, S. and Adelman, K. (2011) *Biochim Biophys Acta* 1809, 34-45.
3. Yamaguchi, Y. et al. (1999) *Cell* 97, 41-51.
4. Buratowski, S. (2009) *Mol Cell* 36, 541-6.
5. Yamaguchi, Y. et al. (2001) *Science* 293, 124-7.
6. Yamaguchi, Y. et al. (2002) *Mol Cell Biol* 22, 2918-27.
7. Ye, Q. et al. (2001) *J Cell Biol* 155, 911-21.
8. Aiyar, S.E. et al. (2004) *Genes Dev* 18, 2134-46.
9. Aiyar, S.E. et al. (2007) *Oncogene* 26, 2543-53.
10. Sun, J. et al. (2008) *J Cell Biochem* 103, 1798-807.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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Limited Uses