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TRIM28 Antibody

Catalog # ASC10160

Product Information

Application	WB, E
Primary Accession	Q13263
Other Accession	NP_005753, 5032179
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	88550
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TRIM28 antibody can be used for detection of TRIM28 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	10155
Other Names	TRIM28 Antibody: KAP1, TF1B, RNF96, TIF1B, KAP1, Transcription intermediary factor 1-beta, E3 SUMO-protein ligase TRIM28, TIF1-beta, tripartite motif containing 28
Target/Specificity	TRIM28; At least three isoforms of TRIM28 are known to exist; this antibody will detect all three isoforms
Reconstitution & Storage	TRIM28 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	TRIM28 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TRIM28 (HGNC:16384)
Synonyms	KAP1, RNF96, TIF1B
Function	Nuclear corepressor for KRAB domain-containing zinc finger proteins (KRAB-ZFPs). Mediates gene silencing by recruiting CHD3, a subunit of the nucleosome remodeling and deacetylation (NuRD) complex, and SETDB1 (which specifically methylates histone H3 at 'Lys-9' (H3K9me)) to the promoter regions of KRAB target genes. Enhances transcriptional repression by coordinating the increase in H3K9me, the decrease in histone H3 'Lys-9 and 'Lys-14' acetylation (H3K9ac and H3K14ac, respectively) and the disposition of HP1 proteins to silence gene expression. Recruitment of SETDB1 induces

	heterochromatinization. May play a role as a coactivator for CEBPB and NR3C1 in the transcriptional activation of ORM1. Also a corepressor for ERBB4. Inhibits E2F1 activity by stimulating E2F1-HDAC1 complex formation and inhibiting E2F1 acetylation. May serve as a partial backup to prevent E2F1-mediated apoptosis in the absence of RB1. Important regulator of CDKN1A/p21(CIP1). Has E3 SUMO-protein ligase activity toward itself via its PHD-type zinc finger. Also specifically sumoylates IRF7, thereby inhibiting its transactivation activity. Ubiquitinates p53/TP53 leading to its proteasomal degradation; the function is enhanced by MAGEC2 and MAGEA2, and possibly MAGEA3 and MAGEA6. Mediates the nuclear localization of KOX1, ZNF268 and ZNF300 transcription factors. In association with isoform 2 of ZFP90, is required for the transcriptional repressor activity of FOXP3 and the suppressive function of regulatory T-cells (Treg) (PubMed:23543754). Probably forms a corepressor complex required for activated KRAS-mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (PubMed:24623306). Required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed:24623306). In ESCs, in collaboration with SETDB1, is also required for H3K9me3 and silencing of endogenous and introduced retroviruses in a DNA-methylation independent-pathway (By similarity). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed:24623306). The SETDB1-TRIM28-ZNF274 complex may play a role in recruiting ATRX to the 3'-exons of zinc- finger coding genes with atypical chromatin signatures to establish or maintain/protect H3K9me3 at these transcriptionally active regions (PubMed:27029610).
Cellular Location	Nucleus Note=Associated with centromeric heterochromatin during cell differentiation through CBX1 (By similarity). Localizes to sites of DNA damage (PubMed:25593309). {ECO:0000250|UniProtKB:Q62318, ECO:0000269|PubMed:25593309}
Tissue Location	Expressed in all tissues tested including spleen, thymus, prostate, testis, ovary, small intestine, colon and peripheral blood leukocytes.

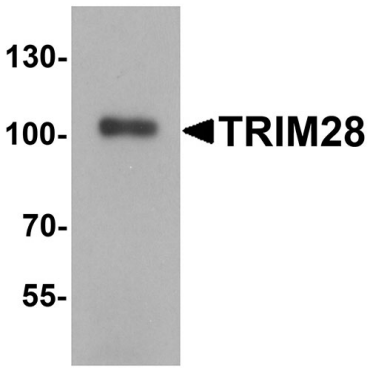
Background

TRIM28 Antibody: TRIM28, also known as KAP-1, is a member of the Transcriptional Intermediary Factor 1 (TIF1) subfamily and contains a RING finger, B box, Coiled coil, PHD/TTC, and bromodomain. TRIM28 is a corepressor for Kruppel-associated box (KRAB)-domain-containing zinc finger proteins and plays a critical role in early embryogenesis. TRIM28 acts as a transcriptional mediator by binding liganded nuclear receptors, including retinoic acid (RAR), retinoid X (RXR) and estrogen (ER) receptors. TRIM28 associates with both heterochromatin and euchromatin, causing gene silencing by both HP1 binding and histone deacetylation.

References

Friedman JR, Fredericks WJ, Jensen DE, et al. KAP-1, a novel corepressor for the highly conserved KRAB repression domain. Genes Dev. 1996; 10:2067-78.
Cammas F, Mark M, Dolle P, et al. Mice lacking the transcriptional corepressor TIF1beta are defective in early postimplantation development. Dev. 2000; 127:2955-63.
Chang CJ, Chen YL, and Lee SC. Coactivator TIF1beta interacts with transcription factor C/EBPbeta and glucocorticoid receptor to induce alpha1-acid glycoprotein gene expression. Mol. Cell Biol. 1998; 18:5880-7
Groner AC, Meylan S, Ciuffi A, et al. KRAB-zinc finger proteins and KAP1 can mediate long-range transcriptional repression through heterochromatin spreading. PLoS Genet. 2010; 6:e1000869.

Images



Western blot analysis of TRIM28 in human testis tissue lysate with TRIM28 antibody at 1 µg/mL.