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ZBTB7A Antibody

Catalog # ASC11264

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O95365
Other Accession	AAH84568, 7705375
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	61439
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ZBTB7A antibody can be used for detection of ZBTB7A by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	51341
Other Names	Zinc finger and BTB domain-containing protein 7A, Factor binding IST protein 1, FBI-1, Factor that binds to inducer of short transcripts protein 1, HIV-1 1st-binding protein 1, Leukemia/lymphoma-related factor, POZ and Krueppel erythroid myeloid ontogenic factor, POK erythroid myeloid ontogenic factor, Pokemon, TTF-I-interacting peptide 21, TIP21, Zinc finger protein 857A, ZBTB7A, FBI1, LRF, ZBTB7, ZNF857A
Target/Specificity	ZBTB7A; At least two isoforms of ZBTB7A are known to exist; this antibody will recognize both isoforms. This antibody is predicted to not cross-react with other ZBTB protein family members.
Reconstitution & Storage	ZBTB7A 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	ZBTB7A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ZBTB7A (HGNC:18078)
Function	Transcription factor that represses the transcription of a wide range of genes involved in cell proliferation and differentiation (PubMed:14701838, PubMed:17595526, PubMed:20812024, PubMed:25514493,

	PubMed:26455326, PubMed:26816381). Directly and specifically binds to the consensus sequence 5'-[GA][CA]GACCCCCCCCC-3' and represses transcription both by regulating the organization of chromatin and through the direct recruitment of transcription factors to gene regulatory regions (PubMed:12004059, PubMed:17595526, PubMed:20812024, PubMed:25514493, PubMed:26816381). Negatively regulates SMAD4 transcriptional activity in the TGF-beta signaling pathway through these two mechanisms (PubMed:25514493). That is, recruits the chromatin regulator HDAC1 to the SMAD4-DNA complex and in parallel prevents the recruitment of the transcriptional activators CREBBP and EP300 (PubMed:25514493). Collaborates with transcription factors like RELA to modify the accessibility of gene transcription regulatory regions to secondary transcription factors (By similarity). Also directly interacts with transcription factors like SP1 to prevent their binding to DNA (PubMed:12004059). Functions as an androgen receptor/AR transcriptional corepressor by recruiting NCOR1 and NCOR2 to the androgen response elements/ARE on target genes (PubMed:20812024). Thereby, negatively regulates androgen receptor signaling and androgen-induced cell proliferation (PubMed:20812024). Involved in the switch between fetal and adult globin expression during erythroid cells maturation (PubMed:26816381). Through its interaction with the NuRD complex regulates chromatin at the fetal globin genes to repress their transcription (PubMed:26816381). Specifically represses the transcription of the tumor suppressor ARF isoform from the CDKN2A gene (By similarity). Efficiently abrogates E2F1-dependent CDKN2A transactivation (By similarity). Regulates chondrogenesis through the transcriptional repression of specific genes via a mechanism that also requires histone deacetylation (By similarity). Regulates cell proliferation through the transcriptional regulation of genes involved in glycolysis (PubMed:26455326). Involved in adipogenesis through the regulation of genes involved in adipocyte differentiation (PubMed:14701838). Plays a key role in the differentiation of lymphoid progenitors into B and T lineages (By similarity). Promotes differentiation towards the B lineage by inhibiting the T-cell instructive Notch signaling pathway through the specific transcriptional repression of Notch downstream target genes (By similarity). Also regulates osteoclast differentiation (By similarity). May also play a role, independently of its transcriptional activity, in double-strand break repair via classical non-homologous end joining/cNHEJ (By similarity). Recruited to double-strand break sites on damage DNA, interacts with the DNA-dependent protein kinase complex and directly regulates its stability and activity in DNA repair (By similarity). May also modulate the splicing activity of KHDRBS1 toward BCL2L1 in a mechanism which is histone deacetylase-dependent and thereby negatively regulates the pro-apoptotic effect of KHDRBS1 (PubMed:24514149).
Cellular Location	Nucleus. Note=Recruited to double-strand break sites of damaged DNA. {ECO:0000250|UniProtKB:O88939}
Tissue Location	Widely expressed (PubMed:9927193). In normal thymus, expressed in medullary epithelial cells and Hassle's corpuscles (at protein level) (PubMed:15662416). In tonsil, expressed in squamous epithelium and germinal center lymphocytes (at protein level) (PubMed:15662416). Up-regulated in a subset of lymphomas, as well as in a subset of breast, lung, colon, prostate and bladder carcinomas (at protein level) (PubMed:15662416). Expressed in adipose tissues (PubMed:14701838).

Background

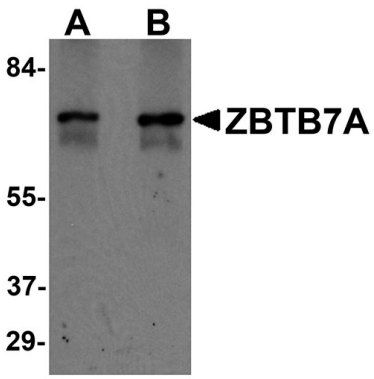
ZBTB7A Antibody: The ZBTB family of proteins is comprised of diverse zinc finger proteins that also contain a BTB (BR-C, ttk and bab) domain. ZBTB7A, also known as LRF, was initially identified as a potential target of the LAZ-3/BCL-6 oncogene. Later reports demonstrated that it could bind to the wild-type IST (inducer of

short transcripts) elements of HIV-1 long terminal repeats (LTRs) and stimulate Tat activity on the HIV-1 LTR. More recently it ZBTB7A has been recognized as a proto-oncogene whose overexpression contributes to malignancy in breast cancer and functions as a co-repressor of the androgen receptor in prostate cancer cells.

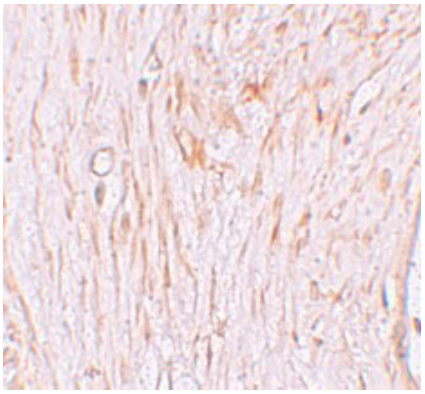
References

Filion GJP, Zhenilo S, Salozhin S, et al. A family of zinc finger proteins that bind methylated DNA and repress transcription. Mol. Cell. Biol.2006; 26:169-81.
Davies JM, Hawe N, Kabarowski J, et al. Novel BTB/POZ domain zinc-finger protein, LRF, is a potential target of the LAZ-3/BCL-6 oncogene. Oncogene1999; 18:365-75.
Pendergrast PS, Wang C, Hernandez N, et al. FBI-1 can stimulate HIV-1 Tat activity and is targeted to a novel subnuclear domain that includes the Tat-P-TEFb-containing nuclear speckles. Mol. Cell. Biol.2002; 13:915-29.
Qu H, Qu D, Chen F, et al. ZBTB7 overexpression contributes to malignancy in breast cancer. Cancer Invest.2010; 28:672-8.

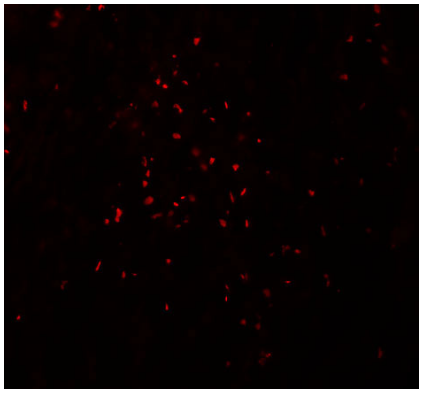
Images



Western blot analysis of ZBTB7A in human ovary tissue lysate with ZBTB7A antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of ZBTB7A in human ovary tissue with ZBTB7A antibody at 2.5 µg/mL.



Immunofluorescence of ZBTB7A in human ovary tissue with ZBTB7A antibody at 20 µg/mL.