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Anti-PLZF/ZBTB16: Mouse PLZF/ZBTB16 Antibody

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Product Sheet CP10261

Description

BACKGROUND PLZF/ZBTB16 was initially identified as a fusion partner of retinoic acid receptor ? (RAR?) in a variant chromosomal translocation t(11;17)(q23;q21) that occurred in a subset of acute promyelocytic leukemia patients. PLZF/ZBTB16 is a transcriptional repressor of the POK (POZ and Krüppel) family of proteins. It contains one BTB (Broad complex, Tramtrack, and Bric à brac)/POZ (poxviruses and zinc finger and Krüppel) domain at the NH₂-terminal moiety and 9C2H2 Krüppel-type zinc fingers at the carboxyl-terminal end of the protein. The POZ/BTB domain mediates interactions with proteins such as transcriptional co-repressors entailing chromatin remodeling and transcriptional silencing. The Krüppel-type zinc fingers confer specificity of the repressor activity to particular promoters by interacting with corresponding response elements in regulatory regions of genes repressed by PLZF/ZBTB16. The hinge region of the protein contains a PEST domain with two consensus sites for CDK2-mediated phosphorylation that triggers ubiquitination and subsequent degradation of PLZF through the ubiquitin-proteasome pathway. The human PLZF/ZBTB16 gene maps to chromosome 11q22–q23 with seven exons distributed over a region of approximately 200 kb. Although additional alternative transcripts encoding distinct proteins have been reported, most recent NCBI and Ensembl databases contain 2 and 3 transcripts, respectively, that differ only in their 5' untranslated region and thus encode the same protein.¹

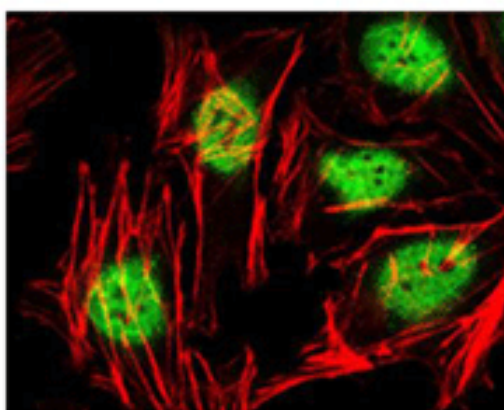
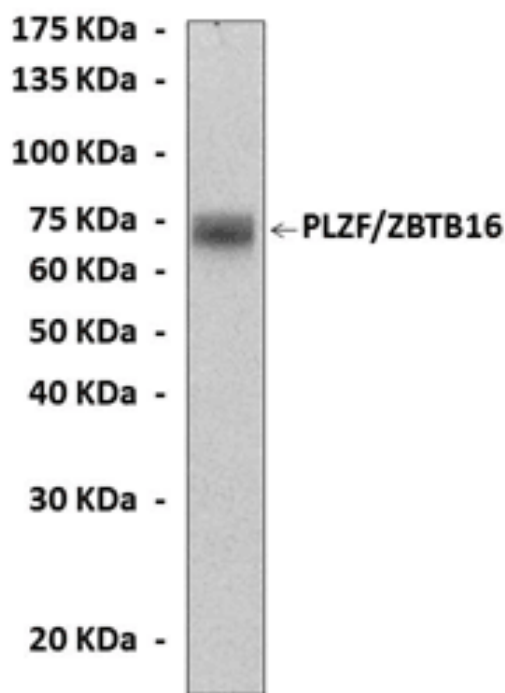
Regarding its function, a natural mutation (luxoid) in, and knock-out of, the mouse homologue Zfp145/ZBTB16 unraveled a crucial role in limb and skeletal patterning and spermatogonial stem cell maintenance. PLZF/ZBTB16 has further been implicated in tumor suppression in melanoma and prostate cancer, ascribed to its ability to cause cell cycle arrest and induce apoptosis in certain cell systems.² The complex effects of PLZF/ZBTB16 have been associated with transcriptional repression of numerous genes such as members of the Hox family of transcription factors, kit, CRABPI, c-myc, CCNA2/Cyclin A, CDKN1B/p27/Kip1 and possibly others. Glucocorticoids (GCs) cause cell cycle arrest and apoptosis in lymphoid cells which is exploited to treat lymphoid malignancies. It was shown that PLZF/ZBTB16 is a glucocorticoid response gene in acute lymphoblastic leukemia. Thus, The suggested role of PLZF/ZBTB16 in cell cycle arrest and apoptosis induction in some systems, further supported a possible role of PLZF/ZBTB16 induction in the anti-leukemic glucocorticoid (GC) response.³ In addition, PLZF/ZBTB16 also plays a role in suppressing the proliferation of normal cultured human corneal

endothelial cells. The expression of PLZF in HCECs is closely related to the formation of cell-cell contacts.
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REFERENCES

1. McConnell, M.J. & Licht, J.D.: Curr. Top. Microbiol. Immunol. 313:31-48, 2007
2. Costoya, J.A. & Pandolfi, P.P.: Curr. Opin. Hematol. 8:212-7, 2001
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4. Joko, T. et al: Mol. Vis. 13:649-58, 2007

Products are for research use only. They are not intended for human, animal, or diagnostic applications.



[1]
Top: Western Blot detection of PLZF/ZBTB16 proteins in HeLa cell lysate using PLZF/ZBTB16 Antibody.
Bottom: this antibody also stains HeLa cells in confocal immunofluorescent analysis (PLZF/ZBTB16 Antibody: Green; Actin filaments: Red).

Details

Cat.No.:	CP10261										
Antigen:	Purified recombinant human PLZF/ZBTB16 fragments expressed in <i>E. coli</i> .										
Isotype:	Mouse IgG1										
Species & predicted species cross-reactivity ():	Human, Mouse, Rat										
Applications & Suggested starting dilutions:*	<table> <tr> <td>WB</td><td>1:1000</td></tr> <tr> <td>IP</td><td>n/d</td></tr> <tr> <td>IHC</td><td>n/d</td></tr> <tr> <td>ICC</td><td>1:50 - 1:200</td></tr> <tr> <td>FACS</td><td>n/d</td></tr> </table>	WB	1:1000	IP	n/d	IHC	n/d	ICC	1:50 - 1:200	FACS	n/d
WB	1:1000										
IP	n/d										
IHC	n/d										
ICC	1:50 - 1:200										
FACS	n/d										
Predicted Molecular Weight of protein:	74 kDa										
Specificity/Sensitivity:	Detects PLZF/ZBTB16 proteins without cross-reactivity with other related proteins.										
Storage:	Store at -20°C, 4°C for frequent use. Avoid repeated freeze-thaw cycles.										

*Optimal working dilutions must be determined by end user.

Products

Resources/Documents

[Product Sheet CP10261](#) ^[2]

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