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DDIT3 Antibody (C-term A135)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11955B

Product Information

Application	WB, FC, E
Primary Accession	P35638
Other Accession	P35639, P14607, Q0IIB6, NP_004074
Reactivity	Human, Rat, Mouse
Predicted	Hamster, Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB13788
Calculated MW	19175
Antigen Region	120-149

Additional Information

Gene ID	1649
Other Names	DNA damage-inducible transcript 3 protein, DDIT-3, C/EBP zeta, C/EBP-homologous protein, CHOP, C/EBP-homologous protein 10, CHOP-10, CCAAT/enhancer-binding protein homologous protein, Growth arrest and DNA damage-inducible protein GADD153, DDIT3, CHOP, CHOP10, GADD153
Target/Specificity	This DDIT3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 120-149 amino acids from the C-terminal region of human DDIT3.
Dilution	WB~~1:1000 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DDIT3 Antibody (C-term A135) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DDIT3

Synonyms	CHOP, CHOP10, GADD153
Function	Multifunctional transcription factor in endoplasmic reticulum (ER) stress response (PubMed:15322075, PubMed:15775988, PubMed:19672300). Plays an essential role in the response to a wide variety of cell stresses and induces cell cycle arrest and apoptosis in response to ER stress (PubMed:15322075, PubMed:15775988). Plays a dual role both as an inhibitor of CCAAT/enhancer-binding protein (C/EBP) function and as an activator of other genes (By similarity). Acts as a dominant-negative regulator of C/EBP-induced transcription: dimerizes with members of the C/EBP family, impairs their association with C/EBP binding sites in the promoter regions, and inhibits the expression of C/EBP regulated genes (By similarity). Positively regulates the transcription of TRIB3, IL6, IL8, IL23, TNFRSF10B/DR5, PPP1R15A/GADD34, BBC3/PUMA, BCL2L11/BIM and ERO1L (PubMed:15775988, PubMed:17709599, PubMed:20876114, PubMed:22761832). Negatively regulates; expression of BCL2 and MYOD1, ATF4-dependent transcriptional activation of asparagine synthetase (ASNS), CEBPA-dependent transcriptional activation of hepcidin (HAMP) and CEBPB-mediated expression of peroxisome proliferator-activated receptor gamma (PPARG) (PubMed:18940792, PubMed:19672300, PubMed:20829347). Together with ATF4, mediates ER-mediated cell death by promoting expression of genes involved in cellular amino acid metabolic processes, mRNA translation and the unfolded protein response (UPR) in response to ER stress (By similarity). Inhibits the canonical Wnt signaling pathway by binding to TCF7L2/TCF4, impairing its DNA-binding properties and repressing its transcriptional activity (PubMed:16434966). Plays a regulatory role in the inflammatory response through the induction of caspase-11 (CASP4/CASP11) which induces the activation of caspase-1 (CASP1) and both these caspases increase the activation of pro-IL1B to mature IL1B which is involved in the inflammatory response (By similarity). Acts as a major regulator of postnatal neovascularization through regulation of endothelial nitric oxide synthase (NOS3)-related signaling (By similarity).
Cellular Location	Cytoplasm. Nucleus Note=Present in the cytoplasm under non-stressed conditions and ER stress leads to its nuclear accumulation

Background

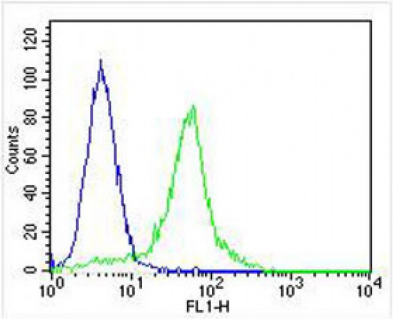
This gene encodes a member of the CCAAT/enhancer-binding protein (C/EBP) family of transcription factors. The protein functions as a dominant-negative inhibitor by forming heterodimers with other C/EBP members, such as C/EBP and LAP (liver activator protein), and preventing their DNA binding activity. The protein is implicated in adipogenesis and erythropoiesis, is activated by endoplasmic reticulum stress, and promotes apoptosis. Fusion of this gene and FUS on chromosome 16 or EWSR1 on chromosome 22 induced by translocation generates chimeric proteins in myxoid liposarcomas or Ewing sarcoma. Multiple alternatively spliced transcript variants encoding two isoforms with different length have been identified.

References

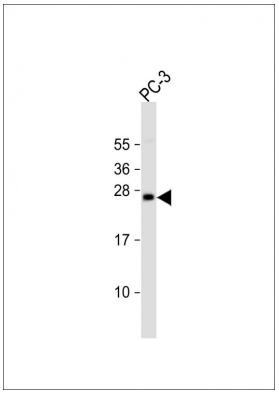
Park, S.H., et al. J. Immunol. 185(9):5522-5530(2010)
Goodall, J.C., et al. Proc. Natl. Acad. Sci. U.S.A. 107(41):17698-17703(2010)
Zhang, H.M., et al. J. Virol. 84(17):8446-8459(2010)
Cazanave, S.C., et al. Am. J. Physiol. Gastrointest. Liver Physiol. 299 (1), G236-G243 (2010) :
Wang, Y.L., et al. J. Exp. Clin. Cancer Res. 29, 54 (2010) :

Images

Overlay histogram showing Hela cells stained with



AP11955b (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP11955b, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OH191631) at 1/400 dilution for 40 min at 37°C. Isotype control antibody (blue line) was rabbit IgG (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



Anti-DDIT3 Antibody (C-term A135) at 1:2000 dilution + PC-3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 19 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

- Endoplasmic Reticulum Stress Affects Cholesterol Homeostasis by Inhibiting LXRα Expression in Hepatocytes and Macrophages