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FOXP3 Antibody

Catalog # ASC11601

Product Information

Application	WB, E
Primary Accession	Q9BZS1
Other Accession	NP_054728, 31982943
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	47244
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	FOXP3 antibody can be used for detection of FOXP3 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	50943
Other Names	Forkhead box protein P3, Scurfin, FOXP3, IPEX
Target/Specificity	FOXP3;
Reconstitution & Storage	FOXP3 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	FOXP3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FOXP3
Synonyms	IPEX
Function	Transcriptional regulator which is crucial for the development and inhibitory function of regulatory T-cells (Treg) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479, PubMed:24835996, PubMed:30513302, PubMed:32644293). Plays an essential role in maintaining homeostasis of the immune system by allowing the acquisition of full suppressive function and stability of the Treg lineage, and by directly modulating the expansion and function of conventional T-cells (PubMed:23169781). Can act either as a transcriptional repressor or a transcriptional activator depending on its interactions with other transcription factors, histone acetylases and deacetylases (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325,

PubMed:24722479). The suppressive activity of Treg involves the coordinate activation of many genes, including CTLA4 and TNFRSF18 by FOXP3 along with repression of genes encoding cytokines such as interleukin-2 (IL2) and interferon-gamma (IFNG) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479). Inhibits cytokine production and T-cell effector function by repressing the activity of two key transcription factors, RELA and NFATC2 (PubMed:15790681). Mediates transcriptional repression of IL2 via its association with histone acetylase KAT5 and histone deacetylase HDAC7 (PubMed:17360565). Can activate the expression of TNFRSF18, IL2RA and CTLA4 and repress the expression of IL2 and IFNG via its association with transcription factor RUNX1 (PubMed:17377532). Inhibits the differentiation of IL17 producing helper T-cells (Th17) by antagonizing RORC function, leading to down-regulation of IL17 expression, favoring Treg development (PubMed:18368049). Inhibits the transcriptional activator activity of RORA (PubMed:18354202). Can repress the expression of IL2 and IFNG via its association with transcription factor IKZF4 (By similarity).

Cellular Location

Nucleus {ECO:0000255|PROSITE-ProRule:PRU00089, ECO:0000269|PubMed:17360565, ECO:0000269|PubMed:18354202, ECO:0000269|PubMed:22678915, ECO:0000269|PubMed:23396208, ECO:0000269|PubMed:23973222, ECO:0000269|PubMed:23973223, ECO:0000269|PubMed:32644293}. Cytoplasm Note=Predominantly expressed in the cytoplasm in activated conventional T-cells whereas predominantly expressed in the nucleus in regulatory T- cells (Treg). The 41 kDa form derived by proteolytic processing is found exclusively in the chromatin fraction of activated Treg cells (By similarity). {ECO:0000250|UniProtKB:Q99JB6, ECO:0000269|PubMed:22678915}

Background

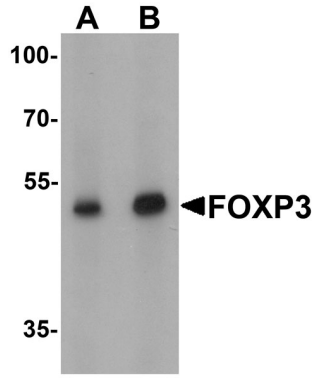
FOXP3 Antibody: FOXP3 is a member of the forkhead/winged-helix family of transcriptional regulators. FOXP3 acts as a repressor of transcription and regulates T cell activation, with its overexpression in CD4 T cells leading to an attenuation of activation-induced cytokine production and proliferation. In regulatory T (Treg) cells, FOXP3 is essential for Treg suppressor function and its expression leads to the repression of IL-17 expression. Genetic mutations involving FOXP3 are the cause of immunodeficiency polyendocrinopathy, enteropathy, X-linked syndrome (IPEX), also known as X-linked autoimmunity-immunodeficiency syndrome.

References

Disruption of a new forkhead/winged-helix protein, scurfin, results in the fatal lymphoproliferative disorder of the scurfy mouse. Nat. Genet. 2001; 27:68-73
Schubert LA, Jeffery E, Zhang Y, et al. Scurfin (FOXP3) acts as a repressor of transcription and regulates T cell activation. J. Biol. Chem. 2001; 276:37672-9.
Gavin MA, Rasmussen JP, Fontenot JD, et al. Foxp3-dependent programme of regulatory T-cell differentiation. Nature 2007; 445:771-5
Kobayashi I, Shiari R, Yamada M, et al. Novel mutations of FOXP3 in two Japanese patients with immune dysregulation, polyendocrinopathy, enteropathy, X linked syndrome (IPEX). J. Med. Genet. 2001; 38:874-6.

Images

Western blot analysis of FOXP3 in A549 cell lysate with FOXP3 antibody at (A) 1 and (B) 2 µg/mL.



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