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XBP-1 Antibody

Catalog # ASC10392

Product Information

Application	WB, ICC, E
Primary Accession	P17861
Other Accession	P17861, 60416406
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	28695
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	XBP-1 antibody can be used for the detection of XBP-1 by Western blot at 0.5 - 2 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL.

Additional Information

Gene ID	7494
Other Names	XBP-1 Antibody: XBP2, TREB5, XBP-1, XBP2, X-box-binding protein 1, Tax-responsive element-binding protein 5, X-box binding protein 1
Target/Specificity	XBP1;
Reconstitution & Storage	XBP-1 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	XBP-1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	XBP1 (HGNC:12801)
Function	Functions as a transcription factor during endoplasmic reticulum (ER) stress by regulating the unfolded protein response (UPR). Required for cardiac myogenesis and hepatogenesis during embryonic development, and the development of secretory tissues such as exocrine pancreas and salivary gland (By similarity). Involved in terminal differentiation of B lymphocytes to plasma cells and production of immunoglobulins (PubMed:11460154). Modulates the cellular response to ER stress in a PIK3R-dependent manner (PubMed:20348923). Binds to the cis-acting X box present in the promoter regions of major histocompatibility complex class II genes (PubMed:8349596).

	Involved in VEGF-induced endothelial cell (EC) proliferation and retinal blood vessel formation during embryonic development but also for angiogenesis in adult tissues under ischemic conditions. Also functions as a major regulator of the UPR in obesity-induced insulin resistance and type 2 diabetes for the management of obesity and diabetes prevention (By similarity).
Cellular Location	Endoplasmic reticulum. Note=Colocalizes with ERN1 and KDR in the endoplasmic reticulum in endothelial cells in a vascular endothelial growth factor (VEGF)-dependent manner (PubMed:23529610) [Isoform 2]: Nucleus. Cytoplasm {ECO:0000250|UniProtKB:O35426}. Note=Localizes predominantly in the nucleus. Colocalizes in the nucleus with SIRT1. Translocates into the nucleus in a PIK3R-, ER stress-induced- and/or insulin-dependent manner (By similarity). {ECO:0000250|UniProtKB:O35426}
Tissue Location	Expressed in plasma cells in rheumatoid synovium (PubMed:11460154). Over-expressed in primary breast cancer and metastatic breast cancer cells (PubMed:25280941). Isoform 1 and isoform 2 are expressed at higher level in proliferating as compared to confluent quiescent endothelial cells (PubMed:19416856)

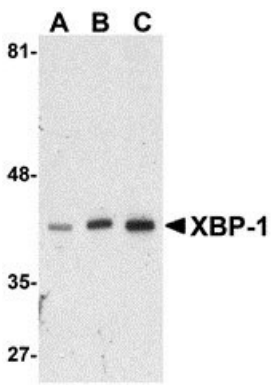
Background

XBP-1 Antibody: X box binding protein 1 (XBP-1) is a key protein in the mammalian unfolded protein response (UPR) that protects the cell against the stress of malfolded proteins in the endoplasmic reticulum (ER). Upon sensing unfolded proteins, an ER transmembrane endonuclease and kinase termed IRE1p is activated and excises an intron from XBP-1 mRNA. The spliced XBP-1 mRNA results in a 371 amino acid protein (XBP-1s) which is then translocated to the nucleus where it binds to the regulatory elements of downstream genes. Together with other UPR transcription factors such as ATF6, XBP-1 stimulates the production of ER stress proteins including the ER resident protein chaperones glucose regulated protein (GRP) 78 and GRP94.

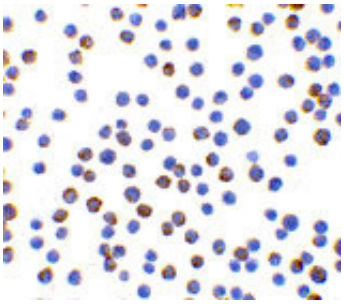
References

Yoshida H, Matsui T, Yamamoto T, et al. XBP1 mRNA is induced by ATF6 and spliced by IRE1p in response to ER stress to produce a highly active transcription factor. Cell 2001; 107:881-91.
Calfon M, Zeng H, Urano F, et al. IRE1 couples endoplasmic reticulum load to secretory capacity by processing the XBP-1 mRNA. Nature 2002; 415:92-6.
Haze K, Yoshida H, Yanagi H, et al. Mammalian transcription factor ATF6 is synthesized as a transmembrane protein and activated by proteolysis in response to endoplasmic stress. Mol. Cell. Biol. 1999; 10:3787-99.
Little E, Ramakrishnan M, Roy B, et al. The glucose-regulated proteins (GRP78 and GRP94): functions, gene regulation, and applications. Crit. Rev. Eukaryot. Gene Expr. 1994; 4:1-18.

Images



Western blot analysis of XBP-1 in HepG2 cell lysate with XBP-1 antibody at (A) 0.5, (B) 1 and (C) 2 µg/mL.



Immunocytochemistry of XBP-1 in HepG2 cells with XBP-1 antibody at 10 µg/mL.