10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

XBP-1 Antibody [9B7E5]

Catalog # ASC12000

Product Information

Application	WB, IF, ICC, E
Primary Accession	P17861
Other Accession	BAB82982, 18148382
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Clone Names	9B7E5
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 1 g/mL. Antibody can also be used for immunocytochemistry starting at 2 g/mL. For immunofluorescence start at 4 g/mL.

Additional Information

Gene ID	7494
Other Names	X-box-binding protein 1 {ECO:0000303|PubMed:2321018, ECO:0000312|HGNC:HGNC:12801}, XBP-1, Tax-responsive element-binding protein 5, TREB-5, X-box-binding protein 1, cytoplasmic form, X-box-binding protein 1, luminal form, XBP1 (HGNC:12801)
Target/Specificity	XBP1;
Reconstitution & Storage	XBP-1 monoclonal antibody can be stored at -20℃, stable for one year.
Precautions	XBP-1 Antibody [9B7E5] 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)

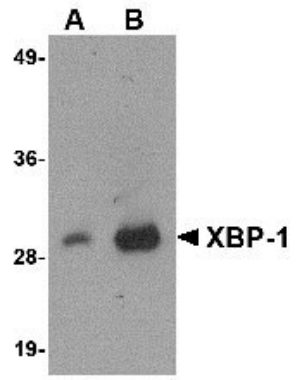
Background

XBP-1 Monoclonal 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.

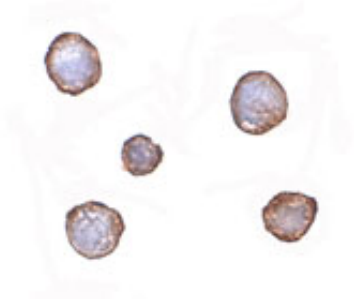
References

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.

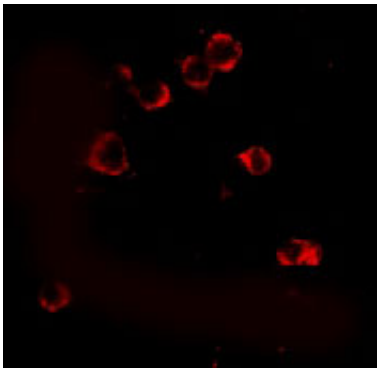
Images



Western blot analysis of 100 ng of XBP-1 recombinant protein with XBP-1 antibody at 1 µg/mL.



Immunocytochemistry of XBP-1 in HepG2 cells with XBP-1 antibody at 2 µg/mL.



Immunofluorescence of XBP1 in HepG2 cells with XBP1 antibody at 2 µg/mL.