

XBP-1 (76-263): sc-4445 WB

BACKGROUND

The X-box binding protein-1 (XBP-1 or hXBP-1), also designated tax-responsive element-binding protein 5 (TREB5) in mouse and human, or hepatocarcinogenesis-related transcription factor (HTF) in rat, belongs to the basic region/leucine zipper (bZIP) family of transcription factors. XBP-1 was first characterized as a protein that binds to the HLA-DR α promoter in B cells. XBP-1 recognizes the cAMP responsive element (CRE) in enhancers of human T cell leukemia virus and major histocompatibility complex class II genes and activates transcription of these genes. It is expressed at high levels in developing bone and its levels are modulated during osteoblast development, suggesting a role in regulation of expression of osteoblast-specific genes. In addition to binding to CRE sequences, XBP-1 has been shown to bind to TPA response elements (TREs).

REFERENCES

- Liou, H.C., Boothby, M.R., Finn, P.W., Davidson, R., Nabavi, N., Zeleznik-Le, N.J., Ting, J.P., and Glimcher, L.N. 1990. A new member of the leucine zipper class of proteins that binds to the HLA DR α proteins. *Science* 247: 1581-1584.
- Liou, H.C., Eddy, R., Shows, T., Lisowska-Grospierre, B., Griscelli, C., Doyle, C., Mannhalter, J., Eibl, M., and Glimcher, L.H. 1991. An HLA-DR α promoter DNA-binding protein is expressed ubiquitously and maps to human chromosomes 22 and 5. *Immunogenetics* 34: 286-292.
- Ono, S.J., Liou, H.C., Davidson, R., Strominger, J.L., and Glimcher, L.H. 1991. Human X-box-binding protein 1 is required for the transcription of a subset of human class II major histocompatibility genes and forms a heterodimer with c-Fos. *Proc. Natl. Acad. Sci. USA* 88: 4309-4312.
- Clauss, I.M., Gravalles, E.M., Darling, J.M., Shapiro, F., Glimcher, M.J., and Glimcher, L.H. 1993. *In situ* hybridization studies suggest a role for the basic region-leucine zipper protein hXBP+1 in exocrine gland and skeletal development during mouse embryogenesis. *Dev. Dyn.* 197: 146-156.
- Matsuzaki, Y., Fujisawa, J., and Yoshida, M. 1995. Identification of transcriptional activation domain of TREB5, a CREB/ATF family protein that binds to HTLV-1 enhancer. *J. Biochem. (Tokyo)* 117: 303-308.
- Clauss, I.M., Chu, M., Zhao, J.L., and Glimcher, L.H. 1996. The basic domain/leucine zipper protein hXBP-1 preferentially binds to and transactivates CRE-like sequences containing an ACGT core. *Nucl. Acids Res.* 24: 1855-1864.
- Fujimoto, T., Onda, M., Nagai, H., Nagahata, T., Ogawa, K., Emi, M. 2003. Upregulation and overexpression of human X-box binding protein 1 (hXBP-1) gene in primary breast cancers. *Breast Cancer* 10: 301-306.
- Fang, Y., Yan, J., Ding, L., Liu, Y., Zhu, J., Huang, C., Zhao, H., Lu, Q., Zhang, X., Yang, X., Ye, Q. 2004. XBP-1 increases ER α transcriptional activity through regulation of large-scale chromatin unfolding. *Biochem. Biophys. Res. Commun.* 323: 269-274.
- Lotz, C., Mutallib, S.A., Oehlich, N., Liewer, U., Ferreira, E.A., Moos, M., Hundemer, M., Schneider, S., Strand, S., Huber, C., Goldschmidt, H., Theobald, M. 2005. Targeting positive regulatory domain I-binding factor 1 and X box-binding Protein 1 transcription factors by multiple myeloma-reactive CTL. *J. Immunol.* 175: 1301-1309.

CHROMOSOMAL LOCATION

Genetic locus: XBP1 (human) mapping to 22q12.1; Xbp1 (mouse) mapping to 11 A1.

SOURCE

XBP-1 (76-263) is expressed in *E. coli* as a 21 kDa tagged fusion protein corresponding to amino acids 76-263 of XBP-1 of human origin.

PRODUCT

XBP-1 (76-263) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

XBP-1 (76-263) is suitable as a Western blotting control for sc-7160.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.