Datasheet for ABIN7556033

XBP1 Protein (AA 1-261) (His tag)

Go to Product page

Overview

Quantity:	1 mg
Target:	XBP1
Protein Characteristics:	AA 1-261
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This XBP1 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant XBP1 Protein expressed in mammalian cells.
Sequence:	MVVVAAAPNP ADGTPKVLLL SGQPASAAGA PAGQALPLMV PAQRGASPEA ASGGLPQARK RQRLTHLSPE EKALRRKLKN RVAAQTARDR KKARMSELEQ QVVDLEEENQ KLLLENQLLR EKTHGLVVEN QELRQRLGMD ALVAEEEAEA KGNEVRPVAG SAESAALRLR APLQQVQAQL SPLQNISPWI LAVLTLQIQS LISCWAFWTT WTQSCSSNAL PQSLPAWRSS QRSTQKDPVP YQPPFLCQWG RHQPSWKPLM N **Sequence without tag. The proposed Purification-Tag is based on experiences with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.**
Specificity:	If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer.
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts.

Product Details

	• Protein expressed in mammalian cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • State-of-the-art algorithm used for plasmid design (Gene synthesis). This protein is a made-to-order protein and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein. If you are not interested in a full length protein, please contact us for individual protein fragments. The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.
Purity:	> 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC)
Grade:	custom-made

Target Details

Target:	XBP1
Alternative Name:	XBP1 (XBP1 Products)
Background:	X-box-binding protein 1 (XBP-1) (Tax-responsive element-binding protein 5) (TREB-5) [Cleaved into: X-box-binding protein 1, cytoplasmic form, X-box-binding protein 1, luminal form],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. Functions also 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). {ECO:0000250|UniProtKB:O35426, ECO:0000269|PubMed:11460154,

ECO:0000269|PubMed:20348923, ECO:0000269|PubMed:8349596}., FUNCTION: [Isoform 1]: Plays a role in the unconventional cytoplasmic splicing processing of its own mRNA triggered by the endoplasmic reticulum (ER) transmembrane endoribonuclease ERN1: upon ER stress, the emerging XBP1 polypeptide chain, as part of a mRNA-ribosome-nascent chain (R-RNC) complex, cotranslationally recruits its own unprocessed mRNA through transient docking to the ER membrane and translational pausing, therefore facilitating efficient IRE1-mediated XBP1 mRNA isoform 2 production (PubMed:19394296, PubMed:21233347). In endothelial cells (EC), associated with KDR, promotes IRE1-mediated XBP1 mRNA isoform 2 productions in a vascular endothelial growth factor (VEGF)-dependent manner, leading to EC proliferation and angiogenesis (PubMed:23529610). Functions as a negative feed-back regulator of the potent transcription factor XBP1 isoform 2 protein levels through proteasome-mediated degradation, thus preventing the constitutive activation of the ER stress response signaling pathway (PubMed:16461360, PubMed:25239945). Inhibits the transactivation activity of XBP1 isoform 2 in myeloma cells (By similarity). Acts as a weak transcriptional factor (PubMed:8657566). Together with HDAC3, contributes to the activation of NFE2L2-mediated HMOX1 transcription factor gene expression in a PI(3)K/mTORC2/Akt-dependent signaling pathway leading to EC survival under disturbed flow/oxidative stress (PubMed:25190803). Binds to the ER stress response element (ERSE) upon ER stress (PubMed:11779464). Binds to the consensus 5'-GATGACGTG[TG]N(3)[AT]T-3' sequence related to cAMP responsive element (CRE)-like sequences (PubMed:8657566). Binds the Tax-responsive element (TRE) present in the long terminal repeat (LTR) of T-cell leukemia virus type 1 (HTLV-I) and to the TPA response elements (TRE) (PubMed:2321018, PubMed:2196176, PubMed:1903538, PubMed:8657566). Associates preferentially to the HDAC3 gene promoter region in a static flow-dependent manner (PubMed:25190803). Binds to the CDH5/VE-cadherin gene promoter region (PubMed:19416856). {ECO:0000250|UniProtKB:O35426, ECO:0000269|PubMed:11779464, ECO:0000269|PubMed:16461360, ECO:0000269|PubMed:1903538, ECO:0000269|PubMed:19394296, ECO:0000269|PubMed:19416856, ECO:0000269|PubMed:21233347, ECO:0000269|PubMed:2196176, ECO:0000269|PubMed:2321018, ECO:0000269|PubMed:23529610, ECO:0000269|PubMed:25190803, ECO:0000269|PubMed:25239945, ECO:0000269|PubMed:8657566}., FUNCTION: [Isoform 2]: Functions as a stress-inducible potent transcriptional activator during endoplasmic reticulum (ER) stress by inducing unfolded protein response (UPR) target genes via binding to the UPR element (UPRE). Up-regulates target genes encoding ER chaperones and ER-associated degradation (ERAD) components to enhance the capacity of productive folding and degradation mechanism, respectively, in order to maintain the homeostasis of the ER under ER stress (PubMed:11779464,

	PubMed:25239945). Plays a role in the production of immunoglobulins and interleukin-6 in the presence of stimuli required for plasma cell differentiation (By similarity). Induces phospholipid biosynthesis and ER expansion (PubMed:15466483). Contributes to the VEGF-induced endothelial cell (EC) growth and proliferation in a Akt/GSK-dependent and/or -independent signaling pathway, respectively, leading to beta-catenin nuclear translocation and E2F2 gene expression (PubMed:23529610). Promotes umbilical vein EC apoptosis and atherosclerotisis development in a caspase-dependent signaling pathway, and contributes to VEGF-induced EC proliferation and angiogenesis in adult tissues under ischemic conditions (PubMed:19416856, PubMed:23529610). Involved in the regulation of endostatin-induced autophagy in EC through BECN1 transcriptional activation (PubMed:23184933). Plays a role as an oncogene by promoting tumor progression: stimulates zinc finger protein SNAI1 transcription to induce epithelial-to-mesenchymal (EMT) transition, cell migration and invasion of breast cancer cells (PubMed:25280941). Involved in adipocyte differentiation by regulating lipogenic gene expression during lactation. Plays a role in the survival of both dopaminergic neurons of the substantia nigra pars compacta (SNpc), by maintaining protein homeostasis and of myeloma cells. Increases insulin sensitivity in the liver as a response to a high carbohydrate diet, resulting in improved glucose tolerance. Improves also glucose homeostasis in an ER stress- and/or insulin-independent manner through both binding and proteasome-induced degradation of the transcription factor FOXO1, hence resulting in suppression of gluconeogenic genes expression and in a reduction of blood glucose levels. Controls the induction of de novo fatty acid synthesis in hepatocytes by regulating the expression of a subset of lipogenic genes in an ER stress- and UPR-independent manner (By similarity). Associates preferentially to the HDAC3 gene promoter region in a disturbed flow-dependent manner (PubMed:25190803). Binds to the BECN1 gene promoter region (PubMed:23184933). Binds to the CDH5/VE-cadherin gene promoter region (PubMed:19416856). Binds to the ER stress response element (ERSE) upon ER stress (PubMed:11779464). Binds to the 5'-CCACG-3' motif in the PPARG promoter (By similarity). {ECO:0000250|UniProtKB:O35426, ECO:0000269|PubMed:11779464, ECO:0000269|PubMed:15466483, ECO:0000269|PubMed:19416856, ECO:0000269|PubMed:23184933, ECO:0000269|PubMed:23529610, ECO:0000269|PubMed:25190803, ECO:0000269|PubMed:25239945, ECO:0000269|PubMed:25280941}.
Molecular Weight:	28.7 kDa
UniProt:	P17861
Pathways:	ER-Nucleus Signaling, Unfolded Protein Response

Application Details

Application Notes:	We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months