Datasheet for ABIN7554596

ZAK Protein (AA 1-800) (His tag)

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Overview

Quantity:	1 mg
Target:	ZAK
Protein Characteristics:	AA 1-800
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This ZAK protein is labelled with His tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Purpose:	Custom-made recombinat MAP3K20 Protein expressed in mammalien cells.
Sequence:	MSSLGASFVQ IKFDDLQFFE NCGGGSFGSV YRAKWISQDK EVAVKKLLKI EKEAEILSVL SHRNIIQFYG VILEPPNYGI VTEYASLGSL YDYINSNRSE EMDMDHIMTW ATDVAKGMHY LHMEAPVKVI HRDLKSRNVV IAADGVLKIC DFGASRFHNH TTHMSLVGTF PWMAPEVIQS LPVSETCDTY SYGVVLWEML TREVPFKGLE GLQVAWLVVE KNERLTIPSS CPRSFAELLH QCWEADAKKR PSFKQIISIL ESMSNDTSLP DKCNSFLHNK AEWRCEIEAT LERLKKLERD LSFKEQELKE RERRLKMWEQ KLTEQSNTPL LPSFEIGAWT EDDVYCWVQQ LVRKGDSSAE MSVYASLFKE NNITGKRLLL LEEEDLKDMG IVSKGHIIHF KSAIEKLTHD YINLFHFPPL IKDSGGEPEE NEEKIVNLEL VFGFHLKPGT GPQDCKWKMY MEMDGDEIAI TYIKDVTFNT NLPDAEILKM TKPPFVMEKW IVGIAKSQTV ECTVTYESDV RTPKSTKHVH SIQWSRTKPQ DEVKAVQLAI QTLFTNSDGN PGSRSDSSAD CQWLDTLRMR QIASNTSLQR SQSNPILGSP FFSHFDGQDS YAAAVRRPQV PIKYQQITPV NQSRSSSPTQ YGLTKNFSSL HLNSRDSGFS

Product Details

	SGNTDTSSER GRYSDRSRNK YGRGSISLNS SPRGRYSGKS QHSTPSRGRY PGKFYRVSQS ALNPHQSPDF KRSPRDLHQP NTIPGMPLHP ETDSRASEED SKVSEGGWTK VEYRKKPHRP SPAKTNKERA RGDHRGWRNF **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.**
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalien 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, Western Blot
Grade:	custom-made

Target Details

Target:	ZAK
Alternative Name:	MAP3K20 (ZAK Products)
Background:	Mitogen-activated protein kinase kinase kinase 20 (EC 2.7.11.25) (Human cervical cancer suppressor gene 4 protein) (HCCS-4) (Leucine zipper- and sterile alpha motif-containing kinase) (MLK-like mitogen-activated protein triple kinase) (Mitogen-activated protein kinase kinase kinase MLT) (Mixed lineage kinase 7) (Mixed lineage kinase-related kinase) (MLK-related kinase) (MRK) (Sterile alpha motif- and leucine zipper-containing kinase AZK),FUNCTION: Stress-activated component of a protein kinase signal transduction cascade that promotes programmed cell death in response to various stress, such as ribosomal stress, osmotic shock and ionizing radiation (PubMed:10924358, PubMed:11836244, PubMed:12220515,

PubMed:14521931, PubMed:15350844, PubMed:15737997, PubMed:18331592, PubMed:20559024, PubMed:32610081, PubMed:32289254, PubMed:35857590, PubMed:26999302). Acts by catalyzing phosphorylation of MAP kinase kinases, leading to activation of the JNK (MAPK8/JNK1, MAPK9/JNK2 and/or MAPK10/JNK3) and MAP kinase p38 (MAPK11, MAPK12, MAPK13 and/or MAPK14) pathways (PubMed:11042189, PubMed:11836244, PubMed:12220515, PubMed:14521931, PubMed:15172994, PubMed:15737997, PubMed:32610081, PubMed:32289254, PubMed:35857590). Activates JNK through phosphorylation of MAP2K4/MKK4 and MAP2K7/MKK7, and MAP kinase p38 gamma (MAPK12) via phosphorylation of MAP2K3/MKK3 and MAP2K6/MKK6 (PubMed:11836244, PubMed:12220515). Involved in stress associated with adrenergic stimulation: contributes to cardiac decompensation during periods of acute cardiac stress (PubMed:15350844, PubMed:21224381, PubMed:27859413). May be involved in regulation of S and G2 cell cycle checkpoint by mediating phosphorylation of CHEK2 (PubMed:15342622). {ECO:0000269|PubMed:10924358, ECO:0000269|PubMed:11042189, ECO:0000269|PubMed:11836244, ECO:0000269|PubMed:12220515, ECO:0000269|PubMed:14521931, ECO:0000269|PubMed:15172994, ECO:0000269|PubMed:15342622, ECO:0000269|PubMed:15350844, ECO:0000269|PubMed:15737997, ECO:0000269|PubMed:18331592, ECO:0000269|PubMed:20559024, ECO:0000269|PubMed:21224381, ECO:0000269|PubMed:26999302, ECO:0000269|PubMed:27859413, ECO:0000269|PubMed:32289254, ECO:0000269|PubMed:32610081, ECO:0000269|PubMed:35857590}., FUNCTION: [Isoform ZAKalpha]: Key component of the stress-activated protein kinase signaling cascade in response to ribotoxic stress or UV-B irradiation (PubMed:32610081, PubMed:32289254, PubMed:35857590). Acts as the proximal sensor of ribosome collisions during the ribotoxic stress response (RSR): directly binds to the ribosome by inserting its flexible C-terminus into the ribosomal intersubunit space, thereby acting as a sentinel for colliding ribosomes (PubMed:32610081, PubMed:32289254). Upon ribosome collisions, activates either the stress-activated protein kinase signal transduction cascade or the integrated stress response (ISR), leading to programmed cell death or cell survival, respectively (PubMed:32610081). Dangerous levels of ribosome collisions trigger the autophosphorylation and activation of MAP3K20, which dissociates from colliding ribosomes and phosphorylates MAP kinase kinases, leading to activation of the JNK and MAP kinase p38 pathways that promote programmed cell death (PubMed:32610081, PubMed:32289254). Less dangerous levels of ribosome collisions trigger the integrated stress response (ISR): MAP3K20 activates EIF2AK4/GCN2 independently of its protein-kinase activity, promoting EIF2AK4/GCN2-mediated phosphorylation of EIF2S1/eIF-2-alpha (PubMed:32610081). Also

Target Details

	part of the stress-activated protein kinase signaling cascade triggering the NLRP1 inflammasome in response to UV-B irradiation: ribosome collisions activate MAP3K20, which directly phosphorylates NLRP1, leading to activation of the NLRP1 inflammasome and subsequent pyroptosis (PubMed:35857590). NLRP1 is also phosphorylated by MAP kinase p38 downstream of MAP3K20 (PubMed:35857590). Also acts as a histone kinase by phosphorylating histone H3 at 'Ser-28' (H3S28ph) (PubMed:15684425). {ECO:0000269|PubMed:15684425, ECO:0000269|PubMed:32289254, ECO:0000269|PubMed:32610081, ECO:0000269|PubMed:35857590}., FUNCTION: [Isoform ZAKbeta]: Isoform that lacks the C-terminal region that mediates ribosome-binding: does not act as a sensor of ribosome collisions in response to ribotoxic stress (PubMed:32610081, PubMed:32289254, PubMed:35857590). May act as an antagonist of isoform ZAKalpha: interacts with isoform ZAKalpha, leading to decrease the expression of isoform ZAKalpha (PubMed:27859413). {ECO:0000269|PubMed:27859413, ECO:0000269|PubMed:32289254, ECO:0000269|PubMed:32610081, ECO:0000269|PubMed:35857590}.
Molecular Weight:	91.2 kDa
UniProt:	Q9NYL2

Application Details

Application Notes:	In addition to the applications listed above we expect the protein to work for functional studies as well. 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