Datasheet for ABIN3136473

KAT5 Protein (AA 1-513) (Strep Tag)

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Overview

Quantity:	250 µg
Target:	KAT5
Protein Characteristics:	AA 1-513
Origin:	Mouse
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This KAT5 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

Product Details

Brand:	AliCE®
Sequence:	MAEVGEIIEG CRLPVLRRNQ DNEDEWPLAE ILSVKDISGR KLFYVHYIDF NKRLDEWVTH ERLDLKKIQF PKKEAKTPTK NGLPGSRPGS PEREVPASAQ ASGKTLPIPV QITLRFNLPK EREAIPGGEP DQPLSSSSCL QPNHRSTKRK VEVVSPATPV PSETAPASVF PQNGSARRAV AAQPGRKRKS NCLGTDEDSQ DSSDGIPSAP RMTGSLVSDR SHDDIVTRMK NIECIELGRH RLKPWYFSPY PQELTTLPVL YLCEFCLKYG RSLKCLQRHL TKCDLRHPPG NEIYRKGTIS FFEIDGRKNK SYSQNLCLLA KCFLDHKTLY YDTDPFLFYV MTEYDCKGFH IVGYFSKEKE STEDYNVACI LTLPPYQRRG YGKLLIEFSY ELSKVEGKTG TPEKPLSDLG LLSYRSYWSQ TILEILMGLK SESGERPQIT INEISEITSI KKEDVISTLQ YLNLINYYKG QYILTLSEDI VDGHERAMLK RLLRIDSKCL HFTPKDWSKR GKW **Sequence without tag. The proposed Strep-Tag is based on experience s 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 in Germany - from design to production - by highly experienced protein experts. • Protein expressed with ALiCE® and purified in one-step affinity chromatography • These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed). • 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. 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. Expression System: • ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications. • During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein! Concentration: • The concentration of our recombinant proteins is measured using the absorbance at 280nm. • The protein's absorbance will be measured against its specific reference buffer. • We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.
Purification:	One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®).
Purity:	> 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).
Grade:	custom-made

Target Details

Target:	KAT5
Alternative Name:	Kat5 (KAT5 Products)
Background:	Histone acetyltransferase KAT5 (EC 2.3.1.48) (60 kDa Tat-interactive protein) (Tip60) (Histone acetyltransferase HTATIP) (Lysine acetyltransferase 5) (Protein 2-hydroxyisobutyryltransferase KAT5) (EC 2.3.1.-) (Protein acetyltransferase KAT5) (EC 2.3.1.-) (Protein crotonyltransferase KAT5) (EC 2.3.1.-),FUNCTION: Catalytic subunit of the NuA4 histone acetyltransferase complex, a multiprotein complex involved in transcriptional activation of select genes principally by acetylation of nucleosomal histones H2A and H4 (PubMed:28694333, PubMed:30297459, PubMed:32542325). Histone acetylation alters nucleosome-DNA interactions and promotes interaction of the modified histones with other proteins which positively regulate transcription (By similarity). The NuA4 histone acetyltransferase complex is required for the activation of transcriptional programs associated with proto-oncogene mediated growth induction, tumor suppressor mediated growth arrest and replicative senescence, apoptosis, and DNA repair (PubMed:17728759). The NuA4 complex plays a direct role in repair of DNA double-strand breaks (DSBs) by promoting homologous recombination (HR): the complex inhibits TP53BP1 binding to chromatin via MBTD1, which recognizes and binds histone H4 trimethylated at 'Lys-20' (H4K20me), and KAT5 that catalyzes acetylation of 'Lys-15' of histone H2A (H2AK15ac), thereby blocking the ubiquitination mark required for TP53BP1 localization at DNA breaks (PubMed:30297459). Also involved in DSB repair by mediating acetylation of 'Lys-5' of histone H2AX (H2AXK5ac), promoting NBN/NBS1 assembly at the sites of DNA damage (By similarity). The NuA4 complex plays a key role in hematopoietic stem cell maintenance and is required to maintain acetylated H2A.Z/H2AZ1 at MYC target genes (PubMed:32542325). The NuA4 complex is also required for spermatid development by promoting acetylation of histones: histone hyperacetylation is required for histone replacement during the transition from round to elongating spermatids (PubMed:28694333). Component of a SWR1-like complex that specifically mediates the removal of histone H2A.Z/H2AZ1 from the nucleosome (By similarity). Also acetylates non-histone proteins, such as BMAL1, ATM, AURKB, CHKA, CGAS, ERCC4/XPF, LPIN1, NDC80/HEC1, NR1D2, RAN, SOX4, FOXP3, SQSTM1, ULK1 and RUBCNL/Pacer (PubMed:22539723, PubMed:24835996, PubMed:31294688). Directly acetylates and activates ATM (By similarity). Promotes nucleotide excision repair (NER) by mediating acetylation of ERCC4/XPF, thereby promoting formation of the ERCC4-ERCC1 complex (By similarity). Relieves NR1D2-mediated inhibition of APOC3 expression by acetylating NR1D2 (By similarity). Acts as a regulator of regulatory T-cells (Treg) by catalyzing FOXP3 acetylation, thereby promoting FOXP3 transcriptional repressor activity (PubMed:24835996). Involved in skeletal myoblast differentiation by mediating acetylation of SOX4 (PubMed:26291311). Catalyzes

	acetylation of APBB1/FE65, increasing its transcription activator activity (By similarity). Promotes transcription elongation during the activation phase of the circadian cycle by catalyzing acetylation of BMAL1, promoting elongation of circadian transcripts (PubMed:31294688). Together with GSK3 (GSK3A or GSK3B), acts as a regulator of autophagy: phosphorylated at Ser-86 by GSK3 under starvation conditions, leading to activate acetyltransferase activity and promote acetylation of key autophagy regulators, such as ULK1 and RUBCNL/Pacer (PubMed:22539723). Acts as a regulator of the cGAS-STING innate antiviral response by catalyzing acetylation the N-terminus of CGAS, thereby promoting CGAS DNA-binding and activation (By similarity). Also regulates lipid metabolism by mediating acetylation of CHKA or LPIN1 (PubMed:29765047). Promotes lipolysis of lipid droplets following glucose deprivation by mediating acetylation of isoform 1 of CHKA, thereby promoting monomerization of CHKA and its conversion into a tyrosine-protein kinase (By similarity). Acts as a regulator of fatty-acid-induced triacylglycerol synthesis by catalyzing acetylation of LPIN1, thereby promoting the synthesis of diacylglycerol (PubMed:29765047). In addition to protein acetyltransferase, can use different acyl-CoA substrates, such as (2E)-butenoyl-CoA (crotonyl-CoA) and 2-hydroxyisobutanoyl-CoA (2-hydroxyisobutyryl-CoA), and is able to mediate protein crotonylation and 2-hydroxyisobutyrylation, respectively (By similarity). Acts as a key regulator of chromosome segregation and kinetochore-microtubule attachment during mitosis by mediating acetylation or crotonylation of target proteins (By similarity). Catalyzes acetylation of AURKB at kinetochores, increasing AURKB activity and promoting accurate chromosome segregation in mitosis (By similarity). Acetylates RAN during mitosis, promoting microtubule assembly at mitotic chromosomes (By similarity). Acetylates NDC80/HEC1 during mitosis, promoting robust kinetochore-microtubule attachment (By similarity). Catalyzes crotonylation of MAPRE1/EB1, thereby ensuring accurate spindle positioning in mitosis (By similarity). {ECO:0000250|UniProtKB:Q92993, ECO:0000269|PubMed:17728759, ECO:0000269|PubMed:22539723, ECO:0000269|PubMed:24835996, ECO:0000269|PubMed:26291311, ECO:0000269|PubMed:28694333, ECO:0000269|PubMed:29765047, ECO:0000269|PubMed:30297459, ECO:0000269|PubMed:31294688, ECO:0000269|PubMed:32542325}.
Molecular Weight:	58.6 kDa
UniProt:	Q8CHK4
Pathways:	Intracellular Steroid Hormone Receptor Signaling Pathway

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.
Comment:	ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications. During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.**
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months