Datasheet for ABIN7555569

SIRT7 Protein (AA 1-400) (His tag)

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Overview

Quantity:	1 mg
Target:	SIRT7
Protein Characteristics:	AA 1-400
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This SIRT7 protein is labelled with His tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Purpose:	Custom-made recombinat SIRT7 Protein expressed in mammalien cells.
Sequence:	MAAGGLSRSE RKAAERVRRL REEQQRERLR QVSRILRKAA AERSAEEGRL LAESADLVTE LQGRSRRREG LKRRQEEVCD DPEELRGKVR ELASAVRNAK YLVVYTGAGI STAASIPDYR GPNGVWTLLQ KGRSVSAADL SEAEPTLTHM SITRLHEQKL VQHVVSQNCD GLHLRSGLPR TAISELHGNM YIEVCTSCVP NREYVRVFDV TERTALHRHQ TGRTCHKCGT QLRDTIVHFG ERGTLGQPLN WEAATEAASR ADTILCLGSS LKVLKKYPRL WCMTKPPSRR PKLYIVNLQW TPKDDWAALK LHGKCDDVMR LLMAELGLEI PAYSRWQDPI FSLATPLRAG EEGSHSRKSL CRSREEAPPG DRGAPLSSAP ILGGWFGRGC TKRTKRKKVT **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:

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Product Details

- 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:	SIRT7
Alternative Name:	SIRT7 (SIRT7 Products)
Background:	NAD-dependent protein deacetylase sirtuin-7 (EC 2.3.1.286) (NAD-dependent protein deacylase sirtuin-7) (EC 2.3.1.-) (Regulatory protein SIR2 homolog 7) (SIR2-like protein 7),FUNCTION: NAD-dependent protein-lysine deacylase that can act both as a deacetylase or deacylase (desuccinylase, depropionylase, deglutarylase and dedecanoylase), depending on the context (PubMed:22722849, PubMed:26907567, PubMed:30653310, PubMed:31542297, PubMed:35939806). Specifically mediates deacetylation of histone H3 at 'Lys-18' (H3K18Ac) (PubMed:22722849, PubMed:30420520, PubMed:35939806). In contrast to other histone deacetylases, displays strong preference for a specific histone mark, H3K18Ac, directly linked to control of gene expression (PubMed:22722849, PubMed:30653310). H3K18Ac is mainly present around the transcription start site of genes and has been linked to activation of nuclear hormone receptors, SIRT7 thereby acts as a transcription repressor (PubMed:22722849). Moreover, H3K18 hypoacetylation has been reported as a marker of malignancy in various cancers and seems to maintain the transformed phenotype of cancer cells (PubMed:22722849). Also able to mediate deacetylation of histone H3 at 'Lys-36' (H3K36Ac) in

the context of nucleosomes (PubMed:30653310). Also mediates deacetylation of non-histone proteins, such as ATM, CDK9, DDX21, DDB1, FBL, FKBP5/FKBP51, GABPB1, RAN, RRP9/U3-55K and POLR1E/PAF53 (PubMed:24207024, PubMed:26867678, PubMed:28147277, PubMed:28886238, PubMed:28426094, PubMed:30540930, PubMed:31075303, PubMed:30944854, PubMed:28790157). Enriched in nucleolus where it stimulates transcription activity of the RNA polymerase I complex (PubMed:16618798, PubMed:19174463, PubMed:24207024). Acts by mediating the deacetylation of the RNA polymerase I subunit POLR1E/PAF53, thereby promoting the association of RNA polymerase I with the rDNA promoter region and coding region (PubMed:16618798, PubMed:19174463, PubMed:24207024). In response to metabolic stress, SIRT7 is released from nucleoli leading to hyperacetylation of POLR1E/PAF53 and decreased RNA polymerase I transcription (PubMed:24207024). Required to restore the transcription of ribosomal RNA (rRNA) at the exit from mitosis (PubMed:19174463). Promotes pre-ribosomal RNA (pre-rRNA) cleavage at the 5'-terminal processing site by mediating deacetylation of RRP9/U3-55K, a core subunit of the U3 snoRNP complex (PubMed:26867678). Mediates 'Lys-37' deacetylation of Ran, thereby regulating the nuclear export of NF-kappa-B subunit RELA/p65 (PubMed:31075303). Acts as a regulator of DNA damage repair by mediating deacetylation of ATM during the late stages of DNA damage response, promoting ATM dephosphorylation and deactivation (PubMed:30944854). Suppresses the activity of the DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complexes by mediating deacetylation of DDB1, which prevents the interaction between DDB1 and CUL4 (CUL4A or CUL4B) (PubMed:28886238). Activates RNA polymerase II transcription by mediating deacetylation of CDK9, thereby promoting 'Ser-2' phosphorylation of the C-terminal domain (CTD) of RNA polymerase II (PubMed:28426094). Deacetylates FBL, promoting histone-glutamine methyltransferase activity of FBL (PubMed:30540930). Acts as a regulator of mitochondrial function by catalyzing deacetylation of GABPB1 (By similarity). Regulates Akt/AKT1 activity by mediating deacetylation of FKBP5/FKBP51 (PubMed:28147277). Required to prevent R-loop-associated DNA damage and transcription-associated genomic instability by mediating deacetylation and subsequent activation of DDX21, thereby overcoming R-loop-mediated stalling of RNA polymerases (PubMed:28790157). In addition to protein deacetylase activity, also acts as a protein-lysine deacylase (PubMed:27436229, PubMed:27997115, PubMed:31542297). Acts as a protein depropionylase by mediating depropionylation of Osterix (SP7), thereby regulating bone formation by osteoblasts (By similarity). Acts as a histone deglutarylase by mediating deglutarylation of histone H4 on 'Lys-91' (H4K91glu), a mark that destabilizes nucleosomes by promoting dissociation of the H2A-H2B dimers from nucleosomes (PubMed:31542297). Acts as a histone desuccinylase: in response to DNA damage, recruited to DNA double-strand breaks (DSBs) and

Target Details

	catalyzes desuccinylation of histone H3 on 'Lys-122' (H3K122succ), thereby promoting chromatin condensation and DSB repair (PubMed:27436229). Also promotes DSB repair by promoting H3K18Ac deacetylation, regulating non-homologous end joining (NHEJ) (By similarity). Along with its role in DNA repair, required for chromosome synapsis during prophase I of female meiosis by catalyzing H3K18Ac deacetylation (By similarity). Involved in transcriptional repression of LINE-1 retrotransposon via H3K18Ac deacetylation, and promotes their association with the nuclear lamina (PubMed:31226208). Required to stabilize ribosomal DNA (rDNA) heterochromatin and prevent cellular senescence induced by rDNA instability (PubMed:29728458). Acts as a negative regulator of SIRT1 by preventing autodeacetylation of SIRT1, restricting SIRT1 deacetylase activity (By similarity). {ECO:0000250|UniProtKB:Q8BKJ9, ECO:0000269|PubMed:16618798, ECO:0000269|PubMed:19174463, ECO:0000269|PubMed:22722849, ECO:0000269|PubMed:24207024, ECO:0000269|PubMed:26867678, ECO:0000269|PubMed:26907567, ECO:0000269|PubMed:27436229, ECO:0000269|PubMed:27997115, ECO:0000269|PubMed:28147277, ECO:0000269|PubMed:28426094, ECO:0000269|PubMed:28790157, ECO:0000269|PubMed:28886238, ECO:0000269|PubMed:29728458, ECO:0000269|PubMed:30420520, ECO:0000269|PubMed:30540930, ECO:0000269|PubMed:30653310, ECO:0000269|PubMed:30944854, ECO:0000269|PubMed:31075303, ECO:0000269|PubMed:31226208, ECO:0000269|PubMed:31542297, ECO:0000269|PubMed:35939806}.
Molecular Weight:	44.9 kDa
UniProt:	Q9NRC8

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

Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months

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