Datasheet for ABIN3121424

SOX9 Protein (AA 1-507) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	SOX9
Protein Characteristics:	AA 1-507
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This SOX9 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MNLLDPFMKM TDEQEKGLSG APSPTMSEDS AGSPCPSGSG SDTENTRPQE NTFPKGEPDL KKESEEDKFP VCIREAVSQV LKGYDWTLVP MPVRVNGSSK NKPHVKRPMN AFMVWAQAAR RKLADQYPHL HNAELSKTLG KLWRLLNESE KRPFVEEAER LRVQHKKDHP DYKYQPRRRK SVKNGQAEAE EATEQTHISP NAIFKALQAD SPHSSSGMSE VHSPGEHSGQ SQGPPTPPTT PKTDVQAGKV DLKREGRPLA EGGRQPPIDF RDVDIGELSS DVISNIETFD VNEFDQYLPP NGHPGVPATH GQVTYTGSYG ISSTAPTPAT AGHVWMSKQQ APPPPPQQPP QAPQAPQAPP QQQAPPQQPQ APQQQQAHTL TTLSSEPGQS QRTHIKTEQL SPSHYSEQQQ HSPQQISYSP FNLPHYSPSY PPITRSQYDY ADHQNSGSYY SHAAGQGSGL YSTFTYMNPA QRPMYTPIAD TSGVPSIPQT HSPQHWEQPV YTQLTRP **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.**

Product Details

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- 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 will ensure that you receive a correctly folded 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 in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.
2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and

Product Details

	Western blot.
Purity:	≥ 80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Target Details

Target:	SOX9
Alternative Name:	Sox9 (SOX9 Products)
Background:	Transcription factor SOX-9 (mSox9),FUNCTION: Transcription factor that plays a key role in chondrocytes differentiation and skeletal development (PubMed:10319868, PubMed:11371614, PubMed:12414734, PubMed:15132997, PubMed:18415932, PubMed:20940257, PubMed:28263186). Specifically binds the 5'-ACAAAG-3' DNA motif present in enhancers and super-enhancers and promotes expression of genes important for chondrogenesis, including cartilage matrix protein-coding genes COL2A1, COL4A2, COL9A1, COL11A2 and ACAN, SOX5 and SOX6 (PubMed:9119111, PubMed:10805756, PubMed:12414734, PubMed:15694126, PubMed:17525254, PubMed:26146088, PubMed:26150426, PubMed:26910618, PubMed:28263186). Also binds to some promoter regions (PubMed:20940257). Plays a central role in successive steps of chondrocyte differentiation (PubMed:11371614, PubMed:12414734, PubMed:22421045). Absolutely required for precartilaginous condensation, the first step in chondrogenesis during which skeletal progenitors differentiate into prechondrocytes (PubMed:11371614, PubMed:12414734). Together with SOX5 and SOX6, required for overt chondrogenesis when condensed prechondrocytes differentiate into early stage chondrocytes, the second step in chondrogenesis (PubMed:11371614, PubMed:12414734, PubMed:15529345). Later, required to direct hypertrophic maturation and block osteoblast differentiation of growth plate chondrocytes: maintains chondrocyte columnar proliferation, delays prehypertrophy and then prevents osteoblastic differentiation of chondrocytes by lowering beta-catenin (CTNNB1) signaling and RUNX2 expression (PubMed:22421045, PubMed:31121357). Also required for chondrocyte hypertrophy, both indirectly, by keeping the lineage fate of chondrocytes, and directly, by remaining present in upper hypertrophic cells and transactivating COL10A1 along with MEF2C (PubMed:21367821, PubMed:22421045). Low lipid levels are the main nutritional determinant for chondrogenic commitment of skeletal progenitor cells: when lipids levels are low, FOXO (FOXO1 and FOXO3) transcription factors promote expression of SOX9, which induces chondrogenic commitment and suppresses fatty acid oxidation (PubMed:32103177). Mechanistically, helps, but is not required, to remove epigenetic

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	signatures of transcriptional repression and deposit active promoter and enhancer marks at chondrocyte-specific genes (PubMed:30021842). Acts in cooperation with the Hedgehog pathway-dependent GLI (GLI1 and GLI3) transcription factors (PubMed:29659575). In addition to cartilage development, also acts as a regulator of proliferation and differentiation in epithelial stem/progenitor cells: involved in the lung epithelium during branching morphogenesis, by balancing proliferation and differentiation and regulating the extracellular matrix (PubMed:24191021). Controls epithelial branching during kidney development (PubMed:21212101). {ECO:0000269|PubMed:10319868, ECO:0000269|PubMed:10805756, ECO:0000269|PubMed:11371614, ECO:0000269|PubMed:12414734, ECO:0000269|PubMed:15132997, ECO:0000269|PubMed:15529345, ECO:0000269|PubMed:15694126, ECO:0000269|PubMed:17525254, ECO:0000269|PubMed:18415932, ECO:0000269|PubMed:20940257, ECO:0000269|PubMed:21212101, ECO:0000269|PubMed:21367821, ECO:0000269|PubMed:22421045, ECO:0000269|PubMed:24191021, ECO:0000269|PubMed:26146088, ECO:0000269|PubMed:26150426, ECO:0000269|PubMed:26910618, ECO:0000269|PubMed:28263186, ECO:0000269|PubMed:29659575, ECO:0000269|PubMed:30021842, ECO:0000269|PubMed:31121357, ECO:0000269|PubMed:32103177, ECO:0000269|PubMed:9119111}.
Molecular Weight:	56.1 kDa
UniProt:	Q04887
Pathways:	EGFR Signaling Pathway, Stem Cell Maintenance, Regulation of Muscle Cell Differentiation, Tube Formation, Skeletal Muscle Fiber Development

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

Application Details

	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. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)

