Datasheet for ABIN3075578

XRCC4 Protein (AA 1-336) (Strep Tag)

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Overview

Quantity:	250 µg
Target:	XRCC4
Protein Characteristics:	AA 1-336
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This XRCC4 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Brand:	AliCE®
Sequence:	MERKISRIHL VSEPSITHFL QVSWEKTLES GFVITLTDGH SAWTGTVSES EISQEADDMA MEKGKYVGEL RKALLSGAGP ADVYTFNFSK ESCYFFFEKN LKDVSFRLGS FNLEKVENPA EVIRELICYC LDTIAENQAK NEHLQKENER LLRDWNDVQG RFEKCVSAKE ALETDLYKRF ILVLNEKKTK IRSLHNKLLN AAQEREKDIK QEGETAICSE MTADRDPVYD ESTDEESENQ TDLSGLASAA VSKDDSIISS LDVTDIAPSR KRRQRMQRNL GTEPKMAPQE NQLQEKENSR PDSSLPETSK KEHISAENMS LETLRNSSPE DLFDEI **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:

Product Details

- 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:	XRCC4

Target Details

Alternative Name:	XRCC4 (XRCC4 Products)
Background:	DNA repair protein XRCC4 (hXRCC4) (X-ray repair cross-complementing protein 4) [Cleaved into: Protein XRCC4, C-terminus (XRCC4/C)],FUNCTION: [DNA repair protein XRCC4]: DNA non-homologous end joining (NHEJ) core factor, required for double-strand break repair and V(D)J recombination (PubMed:10757784, PubMed:10854421, PubMed:17124166, PubMed:16412978, PubMed:8548796, PubMed:25742519, PubMed:12517771, PubMed:17290226, PubMed:22228831, PubMed:25597996, PubMed:25934149, PubMed:26100018, PubMed:26774286). Acts as a scaffold protein that regulates recruitment of other proteins to DNA double-strand breaks (DSBs) (PubMed:15385968, PubMed:20852255, PubMed:26774286, PubMed:27437582). Associates with NHEJ1/XLF to form alternating helical filaments that bridge DNA and act like a bandage, holding together the broken DNA until it is repaired (PubMed:26100018, PubMed:27437582, PubMed:28500754, PubMed:21775435, PubMed:22287571, PubMed:21768349). The XRCC4-NHEJ1/XLF subcomplex binds to the DNA fragments of a DSB in a highly diffusive manner and robustly bridges two independent DNA molecules, holding the broken DNA fragments in close proximity to one other (PubMed:27437582). The mobility of the bridges ensures that the ends remain accessible for further processing by other repair factors (PubMed:27437582). Plays a key role in the NHEJ ligation step of the broken DNA during DSB repair via direct interaction with DNA ligase IV (LIG4): the LIG4-XRCC4 subcomplex reseals the DNA breaks after the gap filling is completed (PubMed:9242410, PubMed:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:19837014). XRCC4 stabilizes LIG4, regulates its subcellular localization and enhances LIG4's joining activity (PubMed:9242410, PubMed:10757784, PubMed:10854421, PubMed:12517771, PubMed:17290226, PubMed:21982441, PubMed:22228831). Binding of the LIG4-XRCC4 subcomplex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends (PubMed:10757784, PubMed:10854421). Promotes displacement of PNKP from processed strand break termini (PubMed:20852255, PubMed:28453785). {ECO:0000269|PubMed:10757784, ECO:0000269|PubMed:10854421, ECO:0000269|PubMed:12517771, ECO:0000269|PubMed:15385968, ECO:0000269|PubMed:16412978, ECO:0000269|PubMed:17124166, ECO:0000269|PubMed:17290226, ECO:0000269|PubMed:19837014, ECO:0000269|PubMed:20852255, ECO:0000269|PubMed:21768349, ECO:0000269|PubMed:21775435, ECO:0000269|PubMed:21982441, ECO:0000269|PubMed:22228831, ECO:0000269|PubMed:22287571, ECO:0000269|PubMed:25597996, ECO:0000269|PubMed:25742519,

Target Details

	ECO:0000269|PubMed:25934149, ECO:0000269|PubMed:26100018, ECO:0000269|PubMed:26774286, ECO:0000269|PubMed:27437582, ECO:0000269|PubMed:28453785, ECO:0000269|PubMed:28500754, ECO:0000269|PubMed:8548796, ECO:0000269|PubMed:9242410}., FUNCTION: [Protein XRCC4, C-terminus]: Acts as an activator of the phospholipid scramblase activity of XKR4 (PubMed:33725486). This form, which is generated upon caspase-3 (CASP3) cleavage, translocates into the cytoplasm and interacts with XKR4, thereby promoting phosphatidylserine scramblase activity of XKR4 and leading to phosphatidylserine exposure on apoptotic cell surface (PubMed:33725486). {ECO:0000269|PubMed:33725486}.
Molecular Weight:	38.3 kDa
UniProt:	Q13426
Pathways:	DNA Damage Repair, Production of Molecular Mediator of Immune Response

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

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

