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Datasheet for ABIN3136642

## SIRT4 Protein (AA 26-333) (His tag)

### Overview

|                               |  |
|-------------------------------|--|
| Quantity:                     | 1 mg   |
| Target:                       | SIRT4  |
| Protein Characteristics:      | AA 26-333  |
| Origin:                       | Mouse  |
| Source:                       | Insect Cells   |
| Protein Type:                 | Recombinant  |
| Purification tag / Conjugate: | This SIRT4 protein is labelled with His tag.                         |
| Application:                  | Western Blotting (WB), SDS-PAGE (SDS), ELISA, Crystallization (Crys) |

### Product Details

|                  |   |
|------------------|---|
| Sequence:        | <p>SGLFVPPSP LDPEKIKELQ RFISLSKLL VMTGAGISTE SGIPDYRSEK VGLYARTDRR</p> <p>PIQHIDFVRS APVRQRYWAR NFVGWPQFSS HQPNPAHWAL SNWERLGKLH WLVTQNV DAL</p> <p>HSKAGSQRLT ELHGCMHRVL CLNCGEQTAR RVLQERFQAL NPSWSAEAGG VAPDGDVFLT</p> <p>EEQVRSFQVP CCDRCGGPLK PDVVFVGDTV NPDKVDFVHR RVKEADSLLV VGSSLQVYSG</p> <p>YRFILTAREQ KLPIAILNIG PTRSDDLACL KLDSRCGELL PLIDPRRQHS DVQRLEMNFP LSSAAQDP</p> <p><b>Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.</b></p> |
| Characteristics: | <ul style="list-style-type: none"> <li>Made in Germany - from design to production - by highly experienced protein experts.</li> <li>Mouse Sirt4 Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.</li> <li>State-of-the-art algorithm used for plasmid design (Gene synthesis).</li> </ul> <p>This protein is a made to order protein and will be made for the first time for your order. Our</p>   |

Product Details

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.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

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.

The concentration of the protein is calculated using its specific absorption coefficient. We use the ExPASy's ProtParam tool to determine the absorption coefficient of each protein.

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| Purification: | Two step purification of proteins expressed in baculovirus infected SF9 insect cells:<br><br>1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. Eluate fractions are analyzed by SDS-PAGE.<br><br>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 Western blot. |
|---------------|---|

|                  |  |
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| Purity:          | >95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot. |
| Sterility:       | 0.22 µm filtered   |
| Endotoxin Level: | Protein is endotoxin free.   |
| Grade:           | Crystallography grade  |

Target Details

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|-------------------|--|
| Target:           | SIRT4  |
| Alternative Name: | Sirt4 ( <a href="#">SIRT4 Products</a> )   |
| Background:       | Acts as NAD-dependent protein lipoamidase, ADP-ribosyl transferase and deacetylase (PubMed:19220062). Catalyzes more efficiently removal of lipoyl- and biotinyl- than acetyl- |

## Target Details

lysine modifications. Inhibits the pyruvate dehydrogenase complex (PDH) activity via the enzymatic hydrolysis of the lipoamide cofactor from the E2 component, DLAT, in a phosphorylation-independent manner (PubMed:25525879). Catalyzes the transfer of ADP-ribosyl groups onto target proteins, including mitochondrial GLUD1, inhibiting GLUD1 enzyme activity. Acts as a negative regulator of mitochondrial glutamine metabolism by mediating mono ADP-ribosylation of GLUD1: expressed in response to DNA damage and negatively regulates anaplerosis by inhibiting GLUD1, leading to block metabolism of glutamine into tricarboxylic acid cycle and promoting cell cycle arrest (PubMed:16959573). In response to mTORC1 signal, SIRT4 expression is repressed, promoting anaplerosis and cell proliferation (PubMed:23663782). Acts as a tumor suppressor (PubMed:23562301, PubMed:23663782). Also acts as a NAD-dependent protein deacetylase: mediates deacetylation of 'Lys-471' of MLYCD, inhibiting its activity, thereby acting as a regulator of lipid homeostasis (PubMed:23746352). Controls fatty acid oxidation by inhibiting PPARA transcriptional activation. Impairs SIRT1:PPARA interaction probably through the regulation of NAD(+) levels (PubMed:24043310, PubMed:20685656). Down-regulates insulin secretion (By similarity). {ECO:0000255|HAMAP-Rule:MF\_03161, ECO:0000269|PubMed:19220062, ECO:0000269|PubMed:20685656, ECO:0000269|PubMed:23562301, ECO:0000269|PubMed:23663782, ECO:0000269|PubMed:23746352, ECO:0000269|PubMed:24043310, ECO:0000269|PubMed:25525879}.

|                   |  |
|-------------------|--|
| Molecular Weight: | 35.7 kDa Including tag.                                  |
| UniProt:          | <a href="#">Q8R216</a>                                   |
| Pathways:         | <a href="#">Negative Regulation of Hormone Secretion</a> |

## Application Details

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|--------------------|---|
| 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:           | Protein has not been tested for activity yet. In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest. |
| Restrictions:      | For Research Use only   |

# Handling

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|------------------|--|
| Format:          | Liquid   |
| Buffer:          | 100 mM NaCL, 20 mM Hepes, 10% glycerol. pH value 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:     | Unlimited (if stored properly)   |