Datasheet for ABIN3137510

# NPRL2 Protein (AA 1-380) (Strep Tag)

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## Overview

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| Quantity: | 1 mg |
| Target: | NPRL2 |
| Protein Characteristics: | AA 1-380 |
| Origin: | Mouse |
| Source: | Tobacco (Nicotiana tabacum) |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This NPRL2 protein is labelled with Strep Tag. |
| Application: | ELISA, Western Blotting (WB), SDS-PAGE (SDS) |

## Product Details

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| Sequence: | MGSSCRIECI FFSEFHPTLG PKITYQVPED FISRELFDTV QVYIITKPEL QNKLITVTAM EKKLIGCPVC IEHKKYSRNA LLFNLGFVCD AQAKTCALEP IVKKLAGYLT TLELESSFVS NEESKQKLVP IMTILLEELN ASGRCTLPID ESNTIHLKVI EQRPDPPVAQ EYDVPVFTKD KEDFFSSQWD LTTQQILPYI DGFRHVQKIS AEADVELNLV RIAIQNLLYY GVVTLVSILQ YSNVYCPTPK VQDLVDDKSL QEACLSYVTK QGHKRASLRD VFQLYCSLSP GTTVRDLIGR HPQQLQHVDE RKLIQFGLMK NLIRRLQKYP VRVSREERSH PARLYTGCHS YDEICCKTGM SYHELDERLE NDPNIIICWK<br>**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 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.

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| Purification: | Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):<br>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.<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. |

 

## Product Details

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| 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) |
| Grade: | Crystallography grade |

## Target Details

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| Target: | NPRL2 |
| Alternative Name: | Nprl2 (NPRL2 Products) |
| Background: | GATOR1 complex protein NPRL2 (Gene 21 protein) (G21 protein) (Nitrogen permease regulator 2-like protein) (NPR2-like protein),FUNCTION: Catalytic component of the GATOR1 complex, a multiprotein complex that functions as an inhibitor of the amino acid-sensing branch of the mTORC1 pathway (PubMed:26166573, PubMed:29768191, PubMed:38006878). In response to amino acid depletion, the GATOR1 complex has GTPase activating protein (GAP) activity and strongly increases GTP hydrolysis by RagA/RRAGA (or RagB/RRAGB) within heterodimeric Rag complexes, thereby turning them into their inactive GDP-bound form, releasing mTORC1 from lysosomal surface and inhibiting mTORC1 signaling (By similarity). In the presence of abundant amino acids, the GATOR1 complex is ubiquitinated and inhibited by GATOR2 (By similarity). Within the GATOR1 complex, NPRL2 constitutes the catalytic subunit that mediates the GTPase activator activity and under methionine-sufficient conditions, the GTPase activator activity is inhibited by PRMT1 through methylation and consequently inducing timely mTORC1 activation (PubMed:38006878). {ECO:0000250\|UniProtKB:Q8WTW4, ECO:0000269\|PubMed:26166573, ECO:0000269\|PubMed:29768191, ECO:0000269\|PubMed:38006878}., FUNCTION: Suppresses Src-dependent tyrosine phosphorylation and activation of PDPK1 and its downstream signaling. Down-regulates PDPK1 kinase activity by interfering with tyrosine phosphorylation at 'Tyr-9', 'Tyr-373' and 'Tyr-376' residues. May act as a tumor suppressor. Suppresses cell growth and enhances sensitivity to various anticancer drugs. {ECO:0000250\|UniProtKB:Q8WTW4}. |
| Molecular Weight: | 43.6 kDa |
| UniProt: | Q9WUE4 |

## 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. |

 

## Application Details

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| 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.<br>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

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| 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) |

 