Datasheet for ABIN3111899

# APP Protein (AA 688-770) (rho-1D4 tag)

Go to Product page

## Overview

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| Quantity: | 1 mg |
| Target: | APP |
| Protein Characteristics: | AA 688-770 |
| Origin: | Human |
| Source: | Insect Cells |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This APP protein is labelled with rho-1D4 tag. |
| Application: | SDS-PAGE (SDS), Western Blotting (WB), ELISA, Crystallization (Crys) |

## Product Details

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| Sequence: | LVFFAEDVGS NKGAIIGLMV GGVVIATVIV ITLVMLKKKQ YTSIHHGVVE VDAAVTPEER HLSKMQQNGY ENPTYKFFEQ MQN<br>**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.** |
| Characteristics: | • Made in Germany - from design to production - by highly experienced protein experts.<br>• Human APP Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.<br>• State-of-the-art algorithm used for plasmid design (Gene synthesis).<br><br>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.<br>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 |

## Product Details

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| | cannot be expressed or purified.<br>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).<br>When you order this made-to-order protein you will only pay upon receival 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.<br>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.<br>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. |
| Purification: | Three step purification of membrane proteins expressed in baculovirus infected SF9 insect cells:<br>1. Membrane proteins are fractioned by ultracentrifugation and subsequently solubilized with different detergents (detergent screen). Samples are analyzed by Western blot.<br>2. The best performing detergent is used for solubilization and the proteins are purified via their rho1D4 tag via two rho1D4 antibody columns: one DTT resistant, the other one not. Eluate fractions are analyzed by Western blot.<br>3. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatograph. Eluate fractions are analyzed by SDS-PAGE and Western blot. |
| 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: | APP |
| Alternative Name: | APP (APP Products) |
| Background: | Functions as a cell surface receptor and performs physiological functions on the surface of neurons relevant to neurite growth, neuronal adhesion and axonogenesis. Involved in cell mobility and transcription regulation through protein-protein interactions. Can promote |

## Target Details

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| | transcription activation through binding to APBB1-KAT5 and inhibits Notch signaling through interaction with Numb. Couples to apoptosis-inducing pathways such as those mediated by G(O) and JIP. Inhibits G(o) alpha ATPase activity (By similarity). Acts as a kinesin I membrane receptor, mediating the axonal transport of beta-secretase and presenilin 1. Involved in copper homeostasis/oxidative stress through copper ion reduction. In vitro, copper-metallated APP induces neuronal death directly or is potentiated through Cu(2+)-mediated low-density lipoprotein oxidation. Can regulate neurite outgrowth through binding to components of the extracellular matrix such as heparin and collagen I and IV. The splice isoforms that contain the BPTI domain possess protease inhibitor activity. Induces a AGER-dependent pathway that involves activation of p38 MAPK, resulting in internalization of amyloid-beta peptide and leading to mitochondrial dysfunction in cultured cortical neurons. Provides Cu(2+) ions for GPC1 which are required for release of nitric oxide (NO) and subsequent degradation of the heparan sulfate chains on GPC1. {ECO:0000250}., Beta-amyloid peptides are lipophilic metal chelators with metal-reducing activity. Bind transient metals such as copper, zinc and iron. In vitro, can reduce Cu(2+) and Fe(3+) to Cu(+) and Fe(2+), respectively. Beta-amyloid 42 is a more effective reductant than beta-amyloid 40. Beta-amyloid peptides bind to lipoproteins and apolipoproteins E and J in the CSF and to HDL particles in plasma, inhibiting metal-catalyzed oxidation of lipoproteins. Beta-APP42 may activate mononuclear phagocytes in the brain and elicit inflammatory responses. Promotes both tau aggregation and TPK II-mediated phosphorylation. Interaction with overexpressed HADH2 leads to oxidative stress and neurotoxicity. Also binds GPC1 in lipid rafts., Appicans elicit adhesion of neural cells to the extracellular matrix and may regulate neurite outgrowth in the brain. {ECO:0000250}., The gamma-CTF peptides as well as the caspase-cleaved peptides, including C31, are potent enhancers of neuronal apoptosis., N-APP binds TNFRSF21 triggering caspase activation and degeneration of both neuronal cell bodies (via caspase-3) and axons (via caspase-6). |
| Molecular Weight: | 10.4 kDa Including tag. |
| UniProt: | P05067 |
| Pathways: | Caspase Cascade in Apoptosis, EGFR Signaling Pathway, Transition Metal Ion Homeostasis, Skeletal Muscle Fiber Development, Toll-Like Receptors Cascades, Feeding Behaviour |

## 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: | 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) |

 