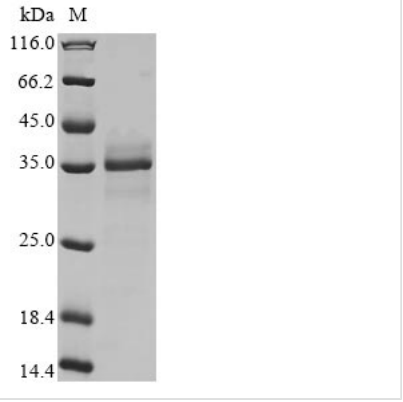
Recombinant Mouse NAD-dependent protein deacylase sirtuin-5, mitochondrial (Sirt5)

Product Code	CSB-BP814306MO
Abbreviation	Recombinant Mouse Sirt5 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q8K2C6
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	SSNMADFRKCFANAKHIAIISGAGVSAESGVPTFRGAGGYWRKWQAQDLATP QAFARNPSQVWEFYHYRREVMRSKEPNPGHLAIAQCEARLRDQGRRVVVITQ NIDELHRKAGTKNLLEIHGTLFKTRCTSCGTVAENYRSPICPALAGKGAPEPET QDARIPVDKLPRCEEAGCGGLLRPHVVWFGENLDPAILEEVDRELALCDLCLV VGTSSVVYPAAMFAPQVASRGVPVAEFNMETTPATDRFRFHFPGPCGKTLPE ALAPHETERTS
Research Area	others
Source	Baculovirus
Target Names	Sirt5
Expression Region	37-310aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	34 kDa
Protein Length	Full Length of Mature Protein
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Mouse NAD-dependent protein deacylase sirtuin-5 (Sirt5) is produced using a baculovirus expression system. The construct contains the full-length mature protein sequence (37-310aa). To help with purification and detection, this protein carries both an N-terminal 10xHis tag and a C-terminal Myc tag. SDS-PAGE analysis confirms the product achieves greater than 85% purity, which should provide reliable results for research work.

Sirt5 appears to be a mitochondrial protein that may regulate several metabolic processes through its NAD-dependent deacylase activity. The protein's main function seems to involve removing acyl groups from lysine residues on target proteins—a process that likely influences cellular metabolism and energy production. Given its apparent role in mitochondrial function and cellular homeostasis, Sirt5 has become an important research focus, though some aspects of its regulatory mechanisms remain unclear.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Protein-Protein Interaction Studies Using Pull-Down Assays

The dual tagging system makes affinity-based purification and detection relatively straightforward for studying Sirt5 protein interactions. The His tag works well for nickel-affinity pull-down experiments when researchers want to identify potential binding partners from mitochondrial protein extracts or cell lysates. Having both tags is actually quite convenient—the His tag handles capture while the Myc tag takes care of detection in the same experiment. This setup might help reveal Sirt5's protein interaction network, particularly within mitochondrial metabolism and signaling pathways.

2. Antibody Development and Validation

This recombinant Sirt5 protein works as an antigen for creating specific antibodies against mouse Sirt5. The high purity level (>85%) makes it well-

suited for animal immunization to generate polyclonal antibodies or for screening monoclonal antibody clones. The Myc tag serves as a useful internal control during antibody specificity testing. This allows researchers to tell the difference between antibodies recognizing the native Sirt5 sequence versus those targeting just the tag. The protein also proves valuable for validating existing Sirt5 antibodies and checking their specificity through Western blot, ELISA, or immunoprecipitation experiments.

3. Biochemical Characterization and Substrate Screening

Having recombinant protein available opens up possibilities for in vitro biochemical studies to characterize Sirt5's enzymatic properties and substrate preferences. Substrate screening assays using different acylated peptides or proteins could potentially identify new Sirt5 targets. Researchers can examine how various cofactors, inhibitors, or activators affect Sirt5 activity under controlled in vitro conditions. These studies may provide insights into the enzyme's kinetic parameters and regulatory mechanisms—though working outside cellular environments does have limitations.

4. Protein Stability and Folding Studies

Baculovirus expression systems generally produce properly folded eukaryotic proteins, suggesting this recombinant Sirt5 should work well for biophysical characterization studies. Protein stability can be investigated under different conditions including varying temperature, pH, and salt concentrations. Techniques like differential scanning fluorimetry or circular dichroism spectroscopy are particularly useful here. The dual tags make protein detection and quantification during stability studies much easier. Such experiments could help determine optimal storage conditions and might reveal structural requirements for Sirt5 function.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.