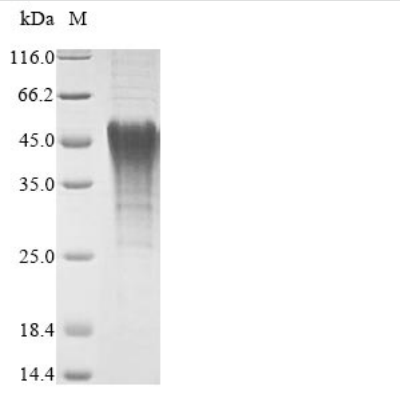
Recombinant Mouse BCL2/adenovirus E1B 19 kDa protein-interacting protein 3 (Bnip3), partial

Product Code	CSB-CF002766MO2
Relevance	Apoptosis-inducing protein that can overcome BCL2 suppression. May play a role in repartitioning calcium between the two major intracellular calcium stores in association with BCL2. Involved in mitochondrial quality control via its interaction with SPATA18/MIEAP: in response to mitochondrial damage, participates in mitochondrial protein catabolic process (also named MALM) leading to the degradation of damaged proteins inside mitochondria. The physical interaction of SPATA18/MIEAP, BNIP3 and BNIP3L/NIX at the mitochondrial outer membrane may play a critical role in the translocation of lysosomal proteins from the cytoplasm to the mitochondrial matrix. The physical interaction of SPATA18/MIEAP, BNIP3 and BNIP3L/NIX at the mitochondrial outer membrane regulates the opening of a pore in the mitochondrial double membrane in order to mediate the translocation of lysosomal proteins from the cytoplasm to the mitochondrial matrix. Plays an important role in the calprotectin (S100A8/A9)-induced cell death pathway
Abbreviation	Recombinant Mouse Bnip3 protein, partial
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.	O55003
Product Type	Transmembrane Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	RSSSKSSHCDSPPRSQTPQDTNRAEIDSHSFGEKNSTLSEEDYIERRREVESIL KKNSDWIWDWSSRPENIPPKEFLFKHPKRTATLSMRNTSVMKKGGIFSADFLK VFLPSLLLSHLLAIGLGIYIGRRLTTSTSTF
Research Area	Cancer
Source	in vitro E.coli expression system
Target Names	Bnip3
Protein Names	Nip3
Expression Region	50-187aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	21.3 kDa

Protein Length	Partial

Image



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

Description

Recombinant Mouse Bnip3 is produced using an in vitro E.coli expression system in the lab, containing a partial sequence that spans amino acids 50 to 187. The protein includes an N-terminal 6xHis tag, which makes purification and detection much easier. Based on SDS-PAGE analysis, the product appears to have a purity level above 90%, suggesting it should be reliable for research work. This is strictly for research purposes - not for any human or animal treatments or diagnostic testing.

Bnip3 belongs to the Bcl-2 family and seems to play an important role in controlling both apoptosis and autophagy pathways. It's particularly known for its connection to mitochondrial dynamics and how cells respond when oxygen levels drop. Because of its function in programmed cell death, Bnip3 has become a key protein for scientists studying cell survival and death mechanisms. Research into this protein may provide valuable insights into various normal and disease-related processes.

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

This N-terminal 6xHis-tagged recombinant mouse Bnip3 protein (aa 50-187) can be attached to nickel-affinity resins to find and study potential binding partners. The partial protein construct likely retains important interaction domains that are involved in forming protein complexes. Scientists can mix the attached Bnip3 with cell lysates or purified proteins to examine direct binding interactions. The high purity (>90%) should minimize background interference in these studies.

2. Antibody Development and Validation

This recombinant mouse Bnip3 fragment could work as an immunogen for

creating specific antibodies against the 50-187 amino acid region. The purified protein can then validate antibody specificity through ELISA, Western blot, or surface plasmon resonance assays. The His-tag makes purification and attachment straightforward when screening hybridoma clones or testing antibody cross-reactivity. This application appears particularly valuable for developing research tools to study natural Bnip3 expression and where it's located in cells.

3. Structural and Biophysical Characterization Studies

The recombinant Bnip3 protein fragment can be used in structural biology work, including circular dichroism spectroscopy, dynamic light scattering, and NMR studies to examine its folding properties and secondary structure. This defined amino acid region (50-187) represents a specific domain that can be studied separately from the full-length protein. These studies may reveal important structural features of this particular Bnip3 region and how stable it remains under different buffer conditions.

4. In Vitro Binding Competition Assays

The purified His-tagged Bnip3 fragment works well in competitive binding experiments to study the specificity and strength of interactions involving this protein region. Scientists can use this recombinant protein as a competitor in assays designed to disrupt or characterize binding between Bnip3 and other cellular components. The high purity and well-defined composition make it suitable for quantitative binding studies where precise protein concentrations are critical.

5. Biochemical Assay Development and Optimization

This recombinant mouse Bnip3 protein can serve as a positive control or standard in biochemical assays designed to study Bnip3-related pathways. The consistent quality and purity allow for reproducible assay conditions during method development and validation studies. Scientists can use this protein to establish detection limits, fine-tune assay conditions, and standardize protocols for studying Bnip3 function across various experimental systems.

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.