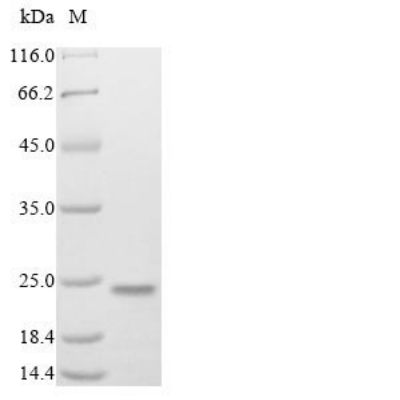
Recombinant Mouse Transcription factor MafK (Mafk)

Product Code	CSB-MP713990MO
Relevance	Since they lack a putative transactivation domain, the small Mafs behave as transcriptional repressors when they dimerize among themselves. However, they seem to serve as transcriptional activators by dimerizing with other (usually larger) basic-zipper proteins and recruiting them to specific DNA-binding sites. Small Maf proteins heterodimerize with Fos and may act as competitive repressors of the NF-E2 transcription factor.
Abbreviation	Recombinant Mouse Mafk 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.	Q61827
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MTTNPKPNKALKVKKEAGENAPVLSDDELVSMSVRELNQHLRGLTKEEVTRLK QRRRTLKNRGYAASCRIKRVTQKEELERQRVELQQEVEKLARENSSMRLELD ALRSKYEALQTFARTVARGPVTPTKVATTSVITIVKSAELSSTSVPFSAAS
Research Area	Epigenetics and Nuclear Signaling
Source	Mammalian cell
Target Names	Mafk
Protein Names	Erythroid transcription factor NF-E2 p18 subunit
Expression Region	1-156aa
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	21.5 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Mouse Transcription factor MafK is expressed in a mammalian cell system, which appears to ensure proper folding and post-translational modifications. The protein comes as a full-length construct covering amino acids 1-156. It includes an N-terminal 10xHis tag and a C-terminal Myc tag for purification and detection purposes. SDS-PAGE analysis shows purity exceeds 85%, making it suitable for various research applications.

MafK belongs to the small Maf transcription factor family and is known for forming heterodimers with larger basic leucine zipper proteins. The protein likely plays a role in regulating gene expression by binding to DNA and influencing pathways such as oxidative stress response and cellular differentiation. Given its function in transcriptional regulation, MafK represents an important target for studies examining gene expression and cellular 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

The dual-tag design—N-terminal 10xHis and C-terminal Myc—makes purification and detection of MafK protein complexes straightforward. Researchers can immobilize the recombinant MafK on nickel-affinity resins to capture potential binding partners from cell lysates or purified protein libraries. This dual-tag approach offers flexibility: the His-tag handles capture while the Myc-tag manages detection within the same experiment. Such studies may help identify transcription factor complexes and co-regulatory proteins, particularly those involved in MafK's transcriptional regulation networks.

2. Antibody Development and Validation

Since the protein is expressed in mammalian cells, it maintains proper folding and post-translational modifications that make it a reasonable immunogen for antibody production. The 85% purity level should be sufficient for generating

specific antibodies against mouse MafK in most research contexts. The dual tags serve as useful internal controls when testing antibody specificity—researchers can distinguish between antibodies that recognize the native protein versus those targeting tag sequences. This recombinant protein works well as both a positive control and standard in antibody validation experiments.

3. ELISA-Based Quantitative Assays

The C-terminal Myc tag opens up possibilities for developing sandwich ELISA assays to detect and quantify MafK protein levels in experimental samples. The recombinant protein can function as a calibration standard with known concentrations for generating standard curves. Because it's produced in mammalian cells, the protein likely maintains native-like conformational epitopes that antibodies raised against endogenous MafK would recognize. This becomes particularly useful when studying MafK expression levels across different cell types or under varying experimental conditions.

4. Biochemical Characterization and Stability Studies

The purified recombinant MafK allows for detailed biochemical analysis, including molecular weight confirmation, thermal stability assessment, and buffer optimization studies. Having dual tags provides multiple detection methods for monitoring protein integrity under various experimental conditions. Scientists can examine how the protein behaves under different pH, salt, and temperature conditions to optimize both storage and experimental protocols. While the 85% purity may not meet requirements for structural determination studies, it appears adequate for most standard biochemical characterization experiments.

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.