Recombinant MTRR protein (His tag)

Catalog Number	548442
Synonyms	MSR; Aquacobalamin reductase; AqCbl reductase
Species	Human
Expression System	E. coli
Accession	Q9UBK8
Molecular Weight	Predictes a molecular mass of 54.47 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 54 kDa band.

Product Information

Sequence Region	225-698
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 225-698 aa (Q9UBK8) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Introducing the recombinant Methionine Synthase Reductase (MSR) fragment (aa 225-698), a high-quality protein tool designed for researchers studying methionine and folate homeostasis. This fragment fully encompasses the critical FAD-binding FR-type domain, making it an ideal reagent for investigating specific enzymatic functions and redox mechanisms in cellular metabolism. Methionine Synthase Reductase (MSR), encoded by the MTRR gene in humans, is a key enzyme responsible for maintaining methionine and folate homeostasis. It plays an essential role in reactivating methionine synthase (MTR) by catalyzing the reductive methylation of MTR-bound cob(II)alamin, ensuring continuous methyl transfer reactions. MSR functions within a multiprotein complex that processes cobalamin (vitamin B12) and facilitates its safe incorporation into MTR to produce methionine. Additionally, it serves as a molecular chaperone for methionine synthase stabilization and acts as an aquacob(III)alamin reductase. The enzyme localizes to the cytoplasm and is crucial for utilizing methyl groups from the folate cycle, impacting processes such as transgenerational epigenetic inheritance. The provided fragment (aa 225-698) contains the functional FAD-binding FR-type domain, enabling focused studies on its redox and catalytic activities.