

Recombinant Human Malic Enzyme 2, His

#R00490

Size: 5 µg/100 µg/500 µg

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

NAD-dependent malic enzyme (ME2), mitochondrial is a protein that in humans is encoded by the ME2 gene. This gene encodes a mitochondrial NAD-dependent malic enzyme, a homotetrameric protein, which catalyzes the oxidative decarboxylation of malate to pyruvate. Three different isoforms of ME are known to be in mammalian tissues: a strictly cytosolic NADP+-dependent enzyme, an NADP+-dependent mitochondriail isoform, and a mitochondrial isoenzyme that is able to use both NAD+ and NADP+ but is more effective with NAD+. The mammalian isoforms size is about 62-64 kDa. A native size of 240,000 Da proposes a tetrameric structure for the active enzyme.

AA Sequence

MLHIKEKGKPLMLNPRTNKGMAFTLQERQMLGLQGL
LPPKIETQDIQALRFHRNLKKMTSPLEKYIYIMGIQER
NEKLFYRILQDDIESLMPIVYTPTVGLACSQYGHIFRR

PKGLFISISDRGHVRSIVDNWPENHVKAVVVTGGERIL
GLGLDGVYGMGIPVGKLCCLYTACAGIRPDRCLPVCID
VGTDNIALLKDPFYMGLYQKRDRTQQYDDLIDEFMKA
ITDRYGRNTLIQFEDFGNHNAPFRFLRKYREKYCTFND
DIQGTAAVALAGLLAAQKVISKPISEHKILFLGAGEAAL
GIANLIVMSMVENGLSEQEAQKKIWMFDKYGLLVKGR
KAKIDSYQEPFTHSAPESIPDTFEDAVNILKPSTIIGVA
GAGRLFTPDVIRAMASINERPVIFALSNPTAQAECTAE
EAYTLTEGRCLFASGSPFGPVKLTGDRVFTPGQGNN
VYIFPGVALAVILCNTRHISDSVFLEAAKALTSQLTDEE
LAQGRLYPPLANIQEVSNIAIKVTEYLYANKMAFRYPE
PEDKAKYVKERTWRSEYDSLLPDVYEWPEASSPPV
ITEHHHHHH

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into

working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

Product Specification	
Synonyms	NAD-dependent Malic Enzyme, Mitochondrial, NAD-ME
Accession	P23368
GeneID	4200
Species	Human
Source	Escherichia coli.
Tags	His
Molecular Weight	Approximately 64.4 kDa, a single non-glycosylated polypeptide chain containing 573 amino acids with 6 × His at C-terminus.
Purity	> 95 % by SDS-PAGE and HPLC analyses.
Biological Activity	Malic Enzyme activity was assayed spectrophotometrically at 340nm as described in Mandela and Sauer (1975). The standard reaction mixture

	contained 50 mM Tris-HCl, 3 mM MnCl2, 5 mM malate, 0.12 mM NADP+, 2.5 mM fumarate. Assay was performed in a Beckman spectrophotometer. The Km value is 1.5 ± 0.6 mM.
Physical Appearance Formulation	Sterile Filtered White lyophilized (freeze-dried) powder. Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4.
Endotoxin	Less than 1 EU/µg of rHuME2, His as determined by LAL method.