Recombinant ODBA protein (His tag)

Catalog Number	537519
Synonyms	Branched-chain alpha-keto acid dehydrogenase E1 component alpha chain; BCKDE1A; BCKDH E1-alpha
Species	Human
Expression System	E. coli
Accession	P12694
Molecular Weight	Predictes a molecular mass of 47.09 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 48 kDa band.

Product Information

Sequence Region	47-445
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>90%, 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 47-445 aa (P12694) 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	Recombinant human 2-oxoisovalerate dehydrogenase subunit alpha (BCKDHA) fragment (residues 47-445) is a high-purity protein designed for structural and biochemical studies. This 399-amino acid fragment retains key functional characteristics of the full-length enzyme, offering a stable and soluble unit ideal for investigating branched-chain amino acid metabolism and mitochondrial energy production pathways. The full-length 2-oxoisovalerate dehydrogenase subunit alpha, encoded by the BCKDHA gene, forms the heterotetrameric E1 subunit of the mitochondrial branched-chain alpha-ketoacid dehydrogenase (BCKD) complex. This complex catalyzes the essential oxidative decarboxylation of alpha-ketoacids derived from branched-chain amino acids (valine, leucine, and isoleucine), producing CO_2 and acyl-CoA for subsequent energy generation. The E1 subunit specifically mediates the initial decarboxylation step, forming an enzyme-product intermediate that undergoes reductive acylation via the lipoylamide cofactor of the E2 subunit. Located in the mitochondrial matrix, this enzyme plays a critical role in cellular energy metabolism and amino acid catabolism, with implications in metabolic disorders and nutritional studies.