Recombinant DTD2 protein (His tag)

Catalog Number	548813
Synonyms	Animalia-specific tRNA deacylase; ATD; D-tyrosyl-tRNA(Tyr) deacylase 2; L-alanyl-tRNA deacylase
Species	Human
Expression System	E. coli
Accession	Q96FN9
Molecular Weight	Predictes a molecular mass of 20.32 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 20 kDa band.

Product Information

Sequence Region	1-168
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 1-168 aa (Q96FN9) 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 D-aminoacyl-tRNA deacylase 2 (DTD2) fragment (residues 1-168) from Homo sapiens, a highly purified protein designed for structural and functional studies. This fragment represents a stable, soluble unit ideal for investigating mechanisms of chiral proofreading and tRNA deacylation in maintaining proteome integrity. D-aminoacyl-tRNA deacylase 2 (DTD2) is a cytoplasmic enzyme critical for translational quality control by hydrolyzing mischarged D-aminoacyl-tRNAs, such as D-tyrosyl-tRNA(Tyr), and certain mischarged L-aminoacyl-tRNAs like L-alanyl-tRNA(Thr). Unlike DTD1, it exhibits relaxed chirality specificity due to its Gly-Pro active site motif, enabling deacylation of both D- and L-alanine mischarged tRNAs. DTD2 also deacylates mischarged glycyl-tRNA(Ala), protecting against glycine misincorporation, and may hydrolyze correctly charged glycyl-tRNA(Gly) in vitro. By recycling mischarged tRNAs, DTD2 enforces protein L-homochirality and counters toxicity from aberrant tRNA charging, playing a key role in cellular homeostasis.