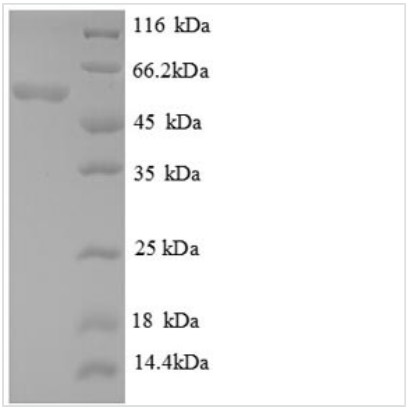
Recombinant Escherichia coli Glutamate decarboxylase alpha (gadA)

Product Code	CSB-EP302526ENV
Relevance	Converts glutamate to gamma-aminobutyrate (GABA), consuming one intracellular proton in the reaction. The gad syst helps to maintain a near-neutral intracellular pH when cells are exposed to extrely acidic conditions. The ability to survive transit through the acidic conditions of the stomach is essential for successful colonization of the mammalian host by commensal and pathogenic bacteria.
Abbreviation	Recombinant E.coli gadA 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.	P69908
Product Type	Recombinant Protein
Immunogen Species	Escherichia coli (strain K12)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MDQKLLTDFRSELLDSRFGAKAISTIAESKRFPLHEMRDDVAFQIINDELYLDGN ARQNLATFCQTWDDENVHKLMDLSINKNWIDKEEYPQSAAIDLRCVNMVADL WHAPAPKNGQAVGTNTIGSSEACMLGGMAMKWRWRKRMEAAGKPTDKPNL VCGPVQICWHKFARYWDVELREIPMRPGQLFMDPKRMIEACDENTIGVVPTF GVTYTGNYEFPQPLHDALDKFQADTGIDIDMHIDAASGGFLAPFVAPDIVWDFR LPRVKSISASGHKFGLAPLGCGWVIWRDEEALPQELVFNVDYLGGQIGTFAINF SRPAGQVIAQYYEFLRLGREGYTKVQNASYQVAAYLADEIAKLGPYEFICTGRP DEGIPAVCFKLKDGEDPGYTLYDLSERLRLRGWQVPAFTLGGEATDIVVMRIM CRRGFEMDFAELLLEDYKASLKYLSDHPKLQGIAQQNSFKHT
Research Area	Others
Source	E.coli
Target Names	gadA
Expression Region	1-466aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	56.7kDa
Protein Length	Full Length
Image	



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

Description

The expression region of this recombinant Escherichia coli (strain K12) gadA covers amino acids 1-466. The theoretical molecular weight of the gadA protein is 56.7 kDa. The gadA protein was expressed in e.coli. The N-terminal 6xHis tag was smoothly integrated into the coding gene of gadA, which enables a simple process of detecting and purifying the gadA recombinant protein in the following steps.

The Escherichia coli glutamate decarboxylase alpha (GadA) plays a crucial role in the bacterial acid stress response. GadA is part of the glutamate-dependent acid resistance (GDAR) system in E. coli, which helps the bacteria survive in acidic environments, such as the stomach. The enzyme catalyzes the decarboxylation of L-glutamate to form γ-aminobutyric acid (GABA) and carbon dioxide. This conversion contributes to the regulation of intracellular pH, acting as a buffer against acid stress. The GDAR system is essential for E. coli to pass through the acidic conditions of the stomach during host infection. Understanding the function of GadA is important not only for bacterial physiology but also for potential applications in biotechnology and food preservation.

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

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