

Product information

gldA, 1-367aa

E. coli*, His-tagged, Recombinant, *E. coli

Cat. No. IBATGP3130

Full name: Glycerol dehydrogenase

NCBI Accession No.: NP_418380

Synonyms: ECK3937, JW5556

Description: gldA catalyzes the NAD-dependent oxidation of glycerol to dihydroxyacetone (glycerone). This protein allows microorganisms to utilize glycerol as a source of carbon under anaerobic conditions. In *E. coli*, an important role of GldA is also likely to regulate the intracellular level of dihydroxyacetone by catalyzing the reverse reaction, i.e. the conversion of dihydroxyacetone into glycerol. gldA possesses a broad substrate specificity, since it is also able to oxidize 1,2-propanediol and to reduce glycolaldehyde, methylglyoxal and hydroxyacetone into ethylene glycol, lactaldehyde and 1,2-propanediol, respectively. Recombinant *E. coli* gldA protein, fused to His-tag at N-terminus, was expressed in *E. coli* and purified by using conventional chromatography techniques.

Form: Liquid. In Phosphate buffered saline (pH7.4), 10% glycerol

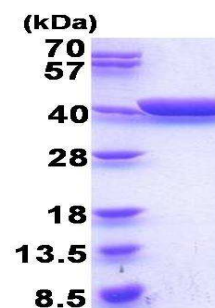
Molecular Weight: 41.1 kDa (390aa), confirmed by MALDI-TOF

Purity: > 95% by SDS - PAGE

Concentration: 1 mg/ml (determined by Bradford assay)

Biological activity: Specific activity: > 14 Units/ml

One unit will oxidize 1.0 umole of glycerol to dihydroxyacetone per minute at pH 8.0 at 25C



15% SDS-PAGE (3ug)

Sequences of amino acids:

MGSSHHHHHH SSGLVPRGSH MGSMDRIQS PGKYIQGADV INRLGEYLKP LAERWLTVGD KVLGFAQST VEKSFKDAGL VVEIAPFGGE
CSQNEIDRLR GIAETAQCGA ILGIGGGKTL DTAKALAHFM GVPVAIAPT ASTDAPCSAL SVIYTDEGEF DRYLLLPNNP NMVIVDTKIV
AGAPARLLAA GIGDALATWF EARACSRSGA TTMAGGKCTQ AALALAECLY NTLLEEGERA MLAAEQHVVT PALERVIEAN TYLSGVGFES
GGLAAAHAVH NGLTAIPDAH HYYHGEKVAF GTLTQLVLEN APVEEIEIVA ALSHAVGLPI TLAQLDIKED VPAKMRIVAE AACAEGETIH
NMPGGATPDQ VYAALLVADQ YGQRFLQEW

Activity Assay:

1. Prepare a 200ul reaction mix into a suitable container: The final concentrations are 93mM Glycine, 93mM Potassium chloride, 2375mM Glycerol, 3mM b-NAD.
2. Equilibrate to 25C and monitor at A340nm until the value is constant using a spectrophotometer.
3. Add 20ul of recombinant gldA protein with various concentrations (0.2ug, 0.1ug, 0.05ug) in 180ul reaction buffer.
4. Mix by inversion and record the decrease at A340nm for 10 minutes.

For research use only. This product is not intended or approved for human, diagnostics or veterinary use.

Product information

General references:

Subedi K.P., *et al.* (2008) *FEMS Microbiol. Lett.* 279:180-187

Gonzalez R., *et al.* (2008) *Metab. Eng.* 10:234-245

Storage: Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C.
Avoid repeated freezing and thawing cycles.

For research use only. This product is not intended or approved for human, diagnostics or veterinary use.



Manufactured for:

Immuno-Biological Laboratories, Inc. (IBL-America)

8201 Central Ave. NE, Suite P, Minneapolis, Minnesota 55432, USA

Phone: (888) 523-1246

Fax.: (763) 780-2988

Email: info@ibl-america.com

Web: www.ibl-america.com