OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene Technologies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info-de@origene.com

AR51950PU-S gldA (1-367, His-tag) - Purified

Alternate names: ECK3937, Glycerol dehydrogenase, JW5556

Quantity: 20 µg

Concentration: 1.0 mg/ml (determined by bradford assay)

Background: 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.

Uniprot ID: P0A9S5

NCBI: NP_418380

GeneID: 948440

Source: E. coli

Format:
State: Liquid purified protein
Purity: >95% by SDS - PAGE
Buffer System: Phosphate buffered saline (pH7.4), 10% glycerol.

Description: Recombinant E. coli gldA protein, fused to His-tag at N-terminus, was expressed in E.coli and purified by using conventional chromatography techniques.
AA Sequence:
MGSSHHHHHH SSGLVPRGSH MGSMDRIIQS PGKYIQGADV INRLGEYLKP LAERWLVVGD
KFVLGFAQST VEKSFKDAGL VVEIAPFGGE CSQNEIDRLR GIAETAQCGA ILGIGGGKTL
DTAKALAHFM GVPVAIAPTI ASTDAPCSAL SVIYTDEGEF DRYLLLPNNP NMVIVDTKIV
AGAPARLLAA GIGDALATWF EARACSRSGA TTMAGGKCTQ AALALAELCY NTLLEEGEKA
MLAAEQHVVT PALERVIEAN TYLSGVGFES GGLAAAHAVH NGLTAIPDAH HYYHGEKVAF
GTLTQLVLEN APVEEIETVA ALSHAVGLPI TLAQLDIKED VPAKMRIVAE AACAEGETIH
NMPGGATPDQ VYAALLVADQ YGQRFLQEWE
Specific Activity: > 14 Units/ml One unit will oxidize 1.0 umole of glycerol to dihydroxyacetone per minute at pH 8.0 at 25C
Molecular weight: 41.1 kDa (390aa), confirmed by MALDI-TOF

Storage: Store undiluted at 2-8°C for one week or (in aliquots) at -20°C to -80°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings: Subedi K.P., et al. (2008) FEMS Microbiol. Lett. 279:180-187 Gonzalez R., et al. (2008) Metab. Eng. 10:234-245

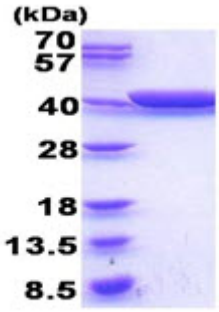
Protocols: 1. Prepare a 200ul reaction mix into a suitable container: The final concentrations are 93mM Glycine, 93mM Potassium chloride, 2375mM Glycerol, 3mM b-NAD.

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.

Pictures:



15% SDS-PAGE (3ug)