

Glycine oxidase Recombinant Protein | thiO recombinant protein

Recombinant Bacillus subtilis Glycine oxidase

CATALOG # AAA115608	HOST E Coli or Yeast or Baculovirus or Mammalian Cell
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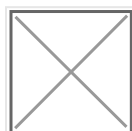
PRODUCT SYNONYMS

Glycine oxidase; Recombinant Bacillus subtilis Glycine oxidase; thiO recombinant protein

PRODUCT SPECIFICATIONS

Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE.
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Sequence Positions	1-369aa; Full Length
Sequence	MKRHYEAVVI GGGIIGSAIA YYLAKENKNT ALFESGTMGG RTTSAAAGML GAHAECEERD AFFDFAMHSQ RLYKGLGEEL YALSGVDIRQ HNGGMFKLAF SEEDVLQLRQ MDDLDSVSWY SKEEVLEKEP YASGDIFGAS FIQDDVHVEP YFVCKAYVKA AKMLGAEIFE HTPVLHVERD GEALFIKTPS GDVWANHVVV ASGVWSGMFF KQLGLNNAFL PVKGECLSVW NDDIPLTKTL YDHHCYIVPR KSGRLVVGAT MKPGDWSETP DLGGLESVMK KAKTMLPAIQ NMKVDRFWAG LRPGTKDGKP YIGRHPEDSR ILFAAGHFRN GILLAPATGA LISDLIMNKE VNQDWLHAFR IDRKEAVQI
Sequence Length	369
Production Note	Special Offer: The E Coli host-expressed protein is manufactured from a stock plasmid containing the protein gene. E Colihost-expressed protein is stocked in different unit sizes ranging from as small as 10 ug to as large as 1 mg. Bulk inventory is also available. The E Coli host-expressed protein has been ordered over and over again by researchers and has stood the test of time as both a robust protein and important target for the research community. It is part of our new program to make our most popular protein targets and corresponding hosts available in expanded unit sizes and with a quick processing time. Select E Coli host-expressed protein for the fastest delivery among all hosts. Please contact our or email to for more details.
Preparation and Storage	Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.

IMAGES



SDS-PAGE

ADDITIONAL INFORMATION

Related Product Information for thiO recombinant protein	Catalyzes the FAD-dependent oxidative deamination of various amines and D-amino acids to yield the corresponding alpha-keto acids, ammonia/amine, and hydrogen peroxide. Oxidizes sarcosine (N-methylglycine), N-ethylglycine and glycine. Can also oxidize the herbicide glyphosate (N-phosphonomethylglycine). Displays lower activities on D-alanine, D-valine, D-proline and D-methionine. Does not act on L-amino acids and other D-amino acids. Is essential for thiamine biosynthesis since the oxidation of glycine catalyzed by ThiO generates the glycine imine intermediate (dehydroglycine) required for the biosynthesis of the thiazole ring of thiamine pyrophosphate.
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References

The complete genome sequence of the Gram-positive bacterium *Bacillus subtilis*.Kunst F., Ogasawara N., Moszer I., Albertini A.M., Alloni G., Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S., Borriss R., Boursier L., Brans A., Braun M., Brignell S.C., Bron S., Brouillet S., Bruschi C.V., Caldwell B., Capuano V., Carter N.M., Choi S.-K., Codani J.-J., Connerton I.F., Cummings N.J., Daniel R.A., Denizot F., Devine K.M., Duesterhoeft A., Ehrlich S.D., Emmerson P.T., Entian K.-D., Errington J., Fabret C., Ferrari E., Foulger D., Fritz C., Fujita M., Fujita Y., Fuma S., Galizzi A., Galleron N., Ghim S.-Y., Glaser P., Goffeau A., Golightly E.J., Grandi G., Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A., Hilbert H., Holsappel S., Hosono S., Hullo M.-F., Itaya M., Jones L.-M., Joris B., Karamata D., Kasahara Y., Klaerr-Blanchard M., Klein C., Kobayashi Y., Koetter P., Koningstein G., Krogh S., Kumano M., Kurita K., Lapidus A., Lardinois S., Lauber J., Lazarevic V., Lee S.-M., Levine A., Liu H., Masuda S., Mauel C., Medigue C., Medina N., Mellado R.P., Mizuno M., Moestl D., Nakai S., Noback M., Noone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.-H., Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M., Presecan E., Pujic P., Purnelle B., Rapoport G., Rey M., Reynolds S., Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y., Sato T., Scanlan E., Schleich S., Schroeter R., Scoffone F., Sekiguchi J., Sekowska A., Seror S.J., Serror P., Shin B.-S., Soldo B., Sorokin A., Tacconi E., Takagi T., Takahashi H., Takemaru K., Takeuchi M., Tamakoshi A., Tanaka T., Terpstra P., Tognoni A., Tosato V., Uchiyama S., Vandenbol M., Vannier F., Vassarotti A., Viari A., Wambutt R., Wedler E., Wedler H., Weitzenegger T., Winters P., Wipat A., Yamamoto H., Yamane K., Yasumoto K., Yata K., Yoshida K., Yoshikawa H.-F., Zumstein E., Yoshikawa H., Danchin A.Nature 390:249-256(1997) Purification and characterization of a novel glycine oxidase from *Bacillus subtilis*.Nishiya Y., Imanaka T.FEBS Lett. 438:263-266(1998) Glycine oxidase from *Bacillus subtilis*. Characterization of a new flavoprotein.Job V., Marcone G.L., Pilone M.S., Pollegioni L.J. Biol. Chem. 277:6985-6993(2002) Structural and mechanistic studies on ThiO, a glycine oxidase essential for thiamin biosynthesis in *Bacillus subtilis*.Settembre E.C., Dorrestein P.C., Park J.-H., Augustine A.M., Begley T.P., Ealick S.E.Biochemistry 42:2971-2981(2003) Structure-function correlation in glycine oxidase from *Bacillus subtilis*.Moertl M., Diederichs K., Welte W., Molla G., Motteran L., Andriolo G., Pilone M.S., Pollegioni L.J. Biol. Chem. 279:29718-29727(2004) Glyphosate resistance by engineering the flavoenzyme glycine oxidase.Pedotti M., Rosini E., Molla G., Moschetti T., Savino C., Vallone B., Pollegioni L.J. Biol. Chem. 284:36415-36423(2009)

NCBI AND UNIPROT INFORMATION

NCBI GI #	16078232
NCBI GeneID	939377
NCBI Accession #	NP_389049.1
NCBI GenBank Nucleotide #	NC_000964.3
UniProt Accession #	O31616
Molecular Weight	56.9 kDa
NCBI Official Full Name	glycine oxidase
NCBI Official Symbol	thiO
NCBI Protein Information	glycine oxidase
UniProt Protein Name	Glycine oxidase
UniProt Gene Name	thiO
UniProt Synonym Gene Names	goxB; yjbR; GO
UniProt Entry Name	GLOX_BACSU

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.