Datasheet

Cat. No. P1583

Recombinant Bifunctional ligase/repressor BirA

Information

Gene ID	
Accession #	
Alternate Names	
Source	Escherichia coli.
M.Wt	Approximately 35.3 kDa, a single non-glycosylated polypeptide chain containing 321 amino acids.
AA Sequence	MKDNTVPLKL IALLANGEFH SGEQLGETLG MSRAAINKHI QTLRDWGVDV FTVPGKGYSL PEPIQLLNAK QILGQLDGGS VAVLPVIDST NQYLLDRIGE LKSGDACIAE YQQAGRGRRG RKWFSPFGAN LYLSMFWRLE QGPAAAIGLS LVIGIVMAEV LRKLGADKVR VKWPNDLYLQ DRKLAGILVE LTGKTGDAAQ IVIGAGINMA MRRVEESVVN QGWITLQEAG INLDRNTLAA MLIRELRAAL ELFEQEGLAP YLSRWEKLDN FINRPVKLII GDKEIFGISR GIDKQGALLL EQDGIIKPWM GGEISLRSAE K
Appearance	Sterile colorless liquid.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles - 6 months from date of receipt, -20 to -70 °C as supplied - 3 months, -20 to -70 °C under sterile conditions after opening
Formulation	Supplied as a 0.2 μm filtered solution in 50 mM Tris-HCl, pH 8.0, 150 mM NaCl, 1 mM EDTA, 1 mM DTT, 10 % glycerol.
Reconstitution	
Biological Activity	Measured by its ability to generate pyrophosphate from the biotinylation reaction. The pyrophosphate is subsequently hydrolyzed using Recombinant Yeast Inorganic Pyrophosphatase/PPA1 (ryPPA1). The specific activity is > 10.0 pmol/min/μg, as measured under the described conditions.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	5μg	100μg	500μg
Recombinant Bifunctional ligase/repressor BirA	5μg	100μg	500μg

Use a manual defrost freezer and avoid repeated freeze-thaw cycles
- 6 months from date of receipt, -20 to -70 °C as supplied
- 3 months, -20 to -70 °C under sterile conditions after opening

Quality Control

Purity	> 97 % by SDS-PAGE analyses.
Endotoxin	Less than 0.1 EU/μg of rBirA as determined by LAL method.

Description

BirA, the biotin-protein ligase (BPL) of Escherichia coli, is also known as biotin operon repressor, biotin-[acetyl-CoA-carboxylase] ligase, and biotin-[acetyl-CoAcarboxylase] synthetase. BirA, a member of the group II biotin-protein ligase family, contains an N-terminal helix-turn-helix DNA-binding domain, a catalytic core that catalyzes biotinyl 5' adenylate (bio-5'-AMP) synthesis, and a C-terminal domain that plays a role in DNA binding, dimerization, and catalytic function. BirA functions both as a DNA-binding protein that represses the biotin biosynthesis operon as well as an enzyme that synthesizes its own corepressor, bio-5'-AMP, an intermediate in biotinylation reactions. BirA biotinylates via the lysine side chain of biotin-accepting proteins/peptides, including natural substrate, carboxyl carrier protein (BCCP),and Avi Tag fusion proteins. Once biotinylated, (strept)avidin-biotin interactions can be utilized in a wide variety of applications of biochemistry and cell biology, including protein capture, immobilization, multimerizing, and bridging molecules.

Reference

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