

**Recombinant Bifunctional ligase/repressor
BirA, His
(rBirA, His)
ChemWhat Technical Data Sheet (TDS)**

Catalog Number:	4A8-01H
Source:	<i>Escherichia coli</i> .
Molecular Weight:	Approximately 36.4 kDa, a single non-glycosylated polypeptide chain containing 329 amino acids, with 6 × His at the C-terminus.
Quantity:	5µg/100µg/500µg
AA Sequence:	MKDNTVPLKL IALLANGEFH SGEQLGETLG MSRAAINKHI QTLRDWGVVDV FTVPGKGYSL PEPIQLLNAK QILGQLDGGG VAVLPVIDST NQYLLDRIGE LKSGDACIAE YQQAGRGRRG RKWFSPFGAN LYLSMFWRLE QGPAAAIGLS LVIGIVMAEV LRKLGADKVR VKWPNDLYLQ DRKLAGILVE LTGKTGDAAQ IVIGAGINMA MRRVEESVVN QGWITLQEAG INLDRNTLAA MLIRELRAAL ELFEQEGLAP YLSRWEKLDN FINRPVKLII GDKEIFGISR GIDKQGALL EQDGIKPWM GGEISLRSAL KLEHHHHHHH
Purity:	> 95 % by SDS-PAGE analyses.
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.
Physical Appearance:	Sterile colorless liquid.
Formulation:	Supplied as a 0.2 µm filtered solution in 50 mM Tris-HCl, pH 8.0, 50 mM NaCl, 1 mM DTT, 10 % glycerol.
Endotoxin:	Less than 0.1 EU/µg of rBirA, His as determined by LAL method.
Stability & Storage:	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none">● 6 months from date of receipt, -20 to -70 °C as supplied.● 3 months, -20 to -70 °C under sterile conditions after opening.
Usage:	ChemWhat Limited in UK offers this branded product for research, development or further evaluation purposes. NOT FOR HUMAN USE.

Bifunctional ligase/repressor BirA

BirA, the biotin-protein ligase (BPL) of *Escherichia coli*, is also known as biotin operon repressor, biotin-[acetyl-CoA-carboxylase] ligase, and biotin-[acetyl-CoA-carboxylase] 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.