

Recombinant BirA protein, His-Tag

Catalog No: 31517, 31917

Expressed In: *E. coli*

Quantity: 100, 1000 µg

Concentration: 1.5 µg/µl

Source: *E. coli*

Buffer Contents: Full length recombinant BirA with His-Tag was expressed in *E. coli* cells and is provided in 25 mM Tris pH 8.0, 150 mM NaCl, 5% glycerol.

Background: **BirA** (bifunctional biotin-[acetylCoA carboxylase] holoenzyme synthetase/ DNA-binding transcriptional repressor, bio-5'-AMP-binding) is a bifunctional protein that exhibits biotin ligase activity and also acts as the DNA binding transcriptional repressor of the biotin operon. Biotinyl-5'-AMP is the co-repressor and is also synthesized by BirA.

Protein Details: Recombinant BirA (NP_418404.1) with His-Tag was expressed in *E. coli* cells and contains an N-terminal 6xHis Tag with an observed molecular weight of 38 kDa. The recombinant protein is >90% pure by SDS-PAGE.

Application Notes: Recombinant BirA is suitable for use in a variety of labeling applications and conditions.

Reaction Conditions

The amount of BirA required per reaction is dependent on the molecular weight of the target protein that contains the Biotinylation tag. In general, per 10 nmol of target substrate to be biotinylated, 2.5 µg BirA is suitable for labeling in a 40 µM reaction. An example reaction is shown below for labeling 100 µg of a 150 kDa antibody (0.67 nmol) at 1 mg/ml. In this case, although the concentration of the substrate is less than 40 µM, efficient labeling can be achieved in a range of 2-8 µM using as little as 0.3 µg of BirA.

Example reaction for labeling 150 kDa antibody with an avidin tag:

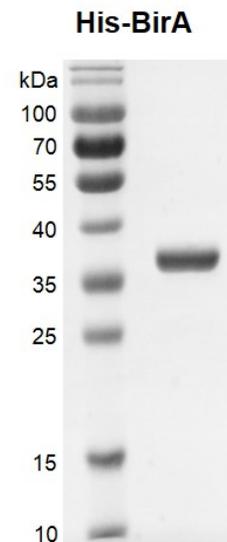
100 µl antibody (1 mg/ml)
 20 µl 0.5M Bicine pH 8.3
 20 µl 10X Reaction Buffer (100 mM ATP, 100 mM MgOAc, 500 µM d-biotin)
 0.5 µg (1.5 mg/mL BirA)
 59.5 µl ddH₂O

Total: 200 µl

Incubate at 30 degrees for 2 hrs. Room temperature reactions are possible if the molarity of the substrate is sufficiently high. Increasing the concentration of BirA enzyme can also be employed to accelerate the reaction.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

This product is for research use only and is not for use in diagnostic procedures.



Recombinant BirA protein, His-Tag protein gel.
 BirA run on a 12.5% SDS-PAGE gel and stained with Coomassie blue.