# Data Sheet (Cat.No.TMPY-03650)

TargetMol

## BirA Protein, E. coli, Recombinant (His & MBP)

### General Information

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| Synonyms: | BirA;dhbB;bioR |
| Protein Construction: | A DNA sequence encoding the E.coil BirA (P06709) (Met1-Lys321) was fused with an N-terminal polyhistidine-tagged MBP tag at the N-terminus. Predicted N terminal: Met |
| Species: | E. coli |
| Expression Host: | E. coli |
| Accession: | P06709 |
| Molecular Weight: | 78.3 kDa (predicted); 64-68 kDa (reducing conditions) |

### QC Testing

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| Biological Activity: | Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first. |
| Purity: | > 95 % as determined by SDS-PAGE |
| Endotoxin: | Please contact us for more information. |
| Formulation: | Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, 10% Glycerol, pH 8.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization. |

### Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

The enzyme BirA is a key reagent because of its ability to biotinylate proteins at a specific residue in a recognition sequence. This enzyme is used to biotinylate the C termini of membrane proteins, allowing these proteins to be tetramerized by binding to streptavidin. Because of the specificity of the biotinylation at the C terminus, the orientation of the membrane proteins on the streptavidin is equivalent to that of the native protein on the cell surface. These tetrameric proteins can be used to study protein receptor-ligand interactions at the cell surface,

and site-specific biotinylation can be used to study proteins in vitro using a defined orientation. The biotinylation of histones by BirA ligase is consistent with the proposed role of human HCS in chromatin. The N-terminal BirA domain is required for both transcriptional regulation of biotin synthesis and biotin protein ligase activity.



Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481