

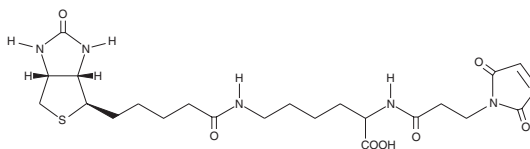
# Product Information



## 3-(N-Maleimidopropionyl)-biocytin

Catalog No. 10008879

**CAS Registry No.:** 102849-12-7  
**Formal Name:** N<sup>2</sup>-[3-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)-1-oxopropyl]-N<sup>6</sup>-[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-1-oxopentyl]-L-lysine  
**Synonym:** MPB  
**MF:** C<sub>23</sub>H<sub>33</sub>N<sub>5</sub>O<sub>7</sub>S  
**FW:** 523.6  
**Purity:** ≥85%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



For long term storage, we suggest that 3-(N-maleimidopropionyl)-biocytin (MPB) be stored as supplied at -20°C. It should be stable for at least two years.

MPB is supplied as a crystalline solid. A stock solution may be made by dissolving the MPB in an organic solvent purged with an inert gas. MPB is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of MPB in these solvents is approximately 2.5 and 1.5 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of MPB can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of MPB in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

MPB is a versatile thiol-specific biotinylation reagent. It is specific for sulfhydryl groups or reduced disulfide bonds and will not label proteins lacking a free sulfhydryl group at a pH between 6.5 and 7.5. This probe can be used in combination with the appropriate avidin- or streptavidin-conjugated markers (i.e., fluorescent, enzyme-conjugated, etc.). MPB can be used to detect protein sulfhydryl groups on dot blots with sensitivities in the femtomole range.<sup>1</sup> MPB can be utilized for cell sorting, enzyme immunoassay, protein blotting, and various cytochemical procedures.<sup>1</sup>

### Laboratory Procedures

A suggested protocol for protein labeling is as follows:

1. Dissolve the protein (50-100 μM) in a suitable buffer such as 10-100 mM PBS, pH 7.0-7.5, at room temperature. If necessary, reduction of disulfide bonds can be carried out using a 10-fold molar excess of a reducing agent such as DTT or TCEP. Dialysis may be required to remove excess reducing agent. *NOTE: It is important to carry out thiol modification under an inert atmosphere in order to prevent formation/re-formation of disulfide bonds.*
2. Prepare a 1-10 mM stock solution of MPB in DMF. *NOTE: It is not recommended to store this solution for more than 24 hours.*
3. Add sufficient MPB stock solution to give approximately 10-20 moles of reagent/mole of protein. Add the MPB solution dropwise to the protein solution as it is stirring. Mix well and allow the reaction to proceed for two hours at room temperature or overnight at 4°C. Once the reaction is complete, an excess of glutathione, mercaptoethanol, or other soluble low molecular weight thiol can be used to react with the excess MPB.
4. Purify of the biotinylated protein by gel filtration or extensive dialysis at 4°C in the proper buffer.

### Reference

1. Bayer, E.A., Zalis, M.G., and Wilchek, M. *Anal. Biochem.* **149**, 529-536 (1985).

### Related Product

S-Nitrosylated Protein Detection Kit - Cat. No. 10006518

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

custserv@caymanchem.com

#### Web

www.caymanchem.com