VECTOR LABORATORIES

CERTIFICATE OF ANALYSIS

Product **BIOTIN (LONG ARM) MALEIMIDE**

Catalog No. SP-1501

Amount 12 mg

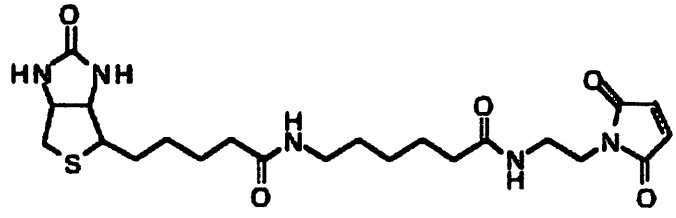
Lot No. ZF0814

Storage -20 °C to -80 °C. Storage in solution not recommended.

Empirical formula $C_{22}H_{33}N_5O_5S$

FW 479.6

Structure:



Biotin (Long Arm) Maleimide is designed for biotinylating proteins[1], nucleic acids[2] or other molecules containing one or more thiol groups. The presence of the 6-aminohexanoate spacer arm between the maleimide group and biotin reduces the possibility of steric hindrance. Molecules to be labeled with Biotin (Long Arm) Maleimide require free thiol groups. In the case of proteins, Biotin (Long Arm) Maleimide will react with exposed cysteine residues. Alternatively, free thiols may be generated by reducing disulfide bonds or by modifying other reactive groups such as primary amines with componds like Traut's reagent (2-iminothiolane). Once free thiol groups are available, labeling can be carried out as outlined below. For labeling nucleic acids, thiols can be introduced into DNA, RNA, or oligonucleotides using the 5' EndTag or 3' EndTag nucleic acid labeling systems.

Note: Labeled DNA standard (50µl of λ/*Hin*d III, 2.0 ng/µl in TE) is provided as a control for the FastTag nucleic acid labeling protocol and is not intended for use in the procedure for labeling proteins. TE=10 mM Tris, pH 8.0, 1 mM EDTA.

(see instructions for use and references on the reverse side)

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5' EndTag™ or 3' EndTag™ labeling of nucleic acids:
Dissolve Biotin (Long Arm) Maleimide in 312 µl of anhydrous dimethyl formamide (DMF) and store at -20 °C to -80 °C in the dark.

Follow the labeling procedure included with the 5' EndTag™ or 3' EndTag™ systems.

Protein labeling procedure:

1. Dissolve the protein to be labeled in 100 mM phosphate buffer, pH 7.0 at a concentration of 5 mg/ml.
2. Dissolve a slight excess of Biotin (Long Arm) Maleimide in dimethyl formamide (DMF) at a concentration of 20 mg/ml.
3. Add 25 µl Biotin (Long Arm) Maleimide per ml of protein solution.
4. Incubate at room temperature for 3 hours with occasional stirring.
5. Separate the unreacted material from the protein by gel filtration or dialysis.

References:

[1]Deziel, M.R. and Mau, M.M. 1990. Biotin-conjugated reagents as site-specific probes of membrane protein structure: application to the study of the human erythrocyte hexose transporter. *Anal. Biochem. 190*:297-303

Selected reagents for the detection of the biotin label:

Alkaline Phosphatase Anti-Biotin, made in goat	SP-3020	•	1ml
Alkaline Phosphatase Streptavidin	SA-5100	•	1ml
Anti-Biotin-M, made in mouse	MB-9100	•	1ml
Anti-Biotin, made in goat	SP-3000	•	1mg
Fluorescein Anti-Biotin, made in goat	SP-3040	•	0.5mg
Peroxidase Anti-Biotin, made in goat	SP-3010	•	1mg
Peroxidase Streptavidin	SA-5004	•	1mg
VECTASTAIN® ABC Kit (Standard)	PK-6100	•	1 kit

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