



CERTIFICATE OF ANALYSIS

Product **BIOTIN (LONG ARM) MALEIMIDE**

Catalog No. SP-1501

Amount 12 mg

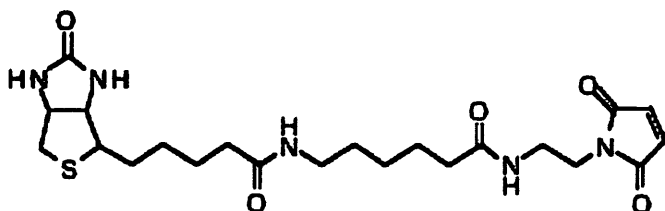
Lot No. ZF1120

Storage -25 °C to -15 °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 biotinylation proteins¹, nucleic acids 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 compounds 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.

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

Labeling Procedure: Biotin (Long Arm) Maleimide, Cat. No. SP-1501

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 the amount needed 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:

¹Deziel, 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:

Goat Anti-Biotin, Alkaline Phosphatase	SP-3020	1 ml
Streptavidin, Alkaline Phosphatase	SA-5100	1 ml
Anti-Biotin Mouse Monoclonal	MB-9100	1 ml
Goat Anti-Biotin, Unconjugated	SP-3000	1 mg
Goat Anti-Biotin, Fluorescein	SP-3040	0.5 mg
Goat Anti-Biotin, Peroxidase	SP-3010	1 mg
Streptavidin, Peroxidase	SA-5004	1 mg
VECTASTAIN® ABC Kit (Standard)	PK-6100	1 kit