Product Data Sheet

Product Name: Iodoacetyl-LC-Biotin
Cat. No.: GC11968

Chemical Properties

Cas. No.	93285-75-7		
Chemical Name	5-[(3aS,4S,6aR)-2-oxo-1,3,3a,4,6,6a-hexahydrothieno[3,4-d]imidazol-4-yl]-N-[6-[(2-iodoacetyl)amino]hexyl]pentanamide		
SMILES	C1C2C(C(S1)CCCCC(=O)NCCCCCCNC(=O)CI)NC(=O)N2		
Formula	$C_{18}H_{31}IN_4O_3S$	M.Wt	510.43
Solubility	≥ 51mg/mL in DMSO with gentle warming	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Iodoacetyl-LC-Biotin		

Protocol

Biotinylation method [1]:

Sample	Immunoglobulin G
Preparation method	Soluble in DMSO or DMF.
Reaction Conditions	4mM, room temperature for 90min

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Applications	Immunoglobulin G (26.7 nmol) was dissolved in 1ml of 0.1M sodium phosphate, 5Mm EDTA buffer, pH 6. To this solution, DTT was added to produce a 50mM final concentration and incubation for 90min at 37 °C, the solution was allowed to cool to room temperature. Excess DTT was removed by molecular sieve chromatography using 50mM Tris, pH 8.3, with 5mM EDTA as the elution buffer. The IgG with reduced sulfhydryl groups was then biotinylated; 30 µl of 4mM iodoacetyl-LC-biotin in Me2SO was added and the mixture was incubated for 90min at room temperature in the dark. Finally, residual biotinylating reagent and free biotin were removed by dialysis against 0.1mM PBS, pH 7.2, for 72h. Protein concentrations were determined by BCA protein assay. Total biotin covalently bound to IgG was determined by an avidin-binding assay.

References:

[1]. Anna Bogusiewicz,Nell I. Mock, and Donald M. Mock. Instability of the biotin–protein bond in human plasma. Analytical Biochemistry 327 (2004) 156–161.

Background

Iodoacetyl-LC-Biotin (N-iodoacetyl-N-biotinylhexylenediamine), a sulfhydryl-reactive biotinylation agent, is a water-insoluble reagent that requires the dissolution of suitable solvents, including dimethyl sulfoxide (DMSO) and dimethylformamide (DMF), prior to

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the addition into aqueous reactions. Iodoacetyl-LC-Biotin consists of a bicyclic biotin rings structure, a 1,6-diaminohexane spacer group attached to the valeric acid side chain of biotin and an iodoacetyl group at the end of the spacer providing sulfhydryl reactivity. The iodoacetyl group at the end of Iodoacetyl-LC-Biotin is able to react with sulfhydryl groups on proteins and other molecules forming a nonreversible bond. The long spacer arm of Iodoacetyl-LC-Biotin enables the modified molecule to better bind to the avidin or streptavidin probes.

Reference

[1].Bioconjugate Techniques , 2nd ed. By Greg T.Hermanson (Pierce Biotechnology, Thermo Fisher Scientific, Rockford, IL). Academic Press (an imprint of Elsevier): London, Amsterdam, Burlington, San Diego . 2008. ISBN 978-0-12-370501-3.