

Product Data Sheet

Product Name: Sulfo-SMCC sodium

Cat. No.: GC30045

Chemical Properties

Cas. No. 92921-24-9

SMILES O=C(C1CCC(CN2C(C=CC2=O)=O)CC1)ON3C(C(S(=O)([O-])=O)CC3=O)=O.[Na+]

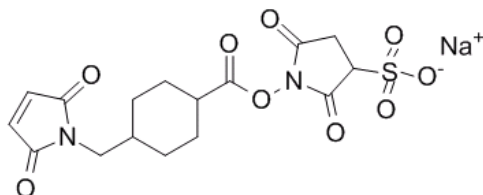
Formula $C_{16}H_{17}N_2NaO_9S$ M.Wt 436.37

Solubility Water : 6 mg/mL (13.75 mM) Storage 4°C, away from moisture and light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Protocol

Protocol for Protein Labeling Using Sulfo-SMCC Sodium

1. Dissolve needed amount of Sulfo-SMCC sodium in anhydrous DMSO to a concentration of 1-10mM and use it immediately before hydrolysis occurs.
2. Dissolve the amine-containing (Protein-NH₂) and sulfhydryl-containing proteins (Protein-SH) in PBS at a concentration of 1-10mg/mL.
3. Add the Sulfo-SMCC solution to the amine-containing protein solution at a molar ratio of 10:1 to 20:1 (Sulfo-SMCC: Protein-NH₂).

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

4. Incubate reaction mixture at room temperature with gentle agitation for 30 minutes to 1 hour.
5. Remove unreacted Sulfo-SMCC by dialysis or using a desalting column to ensure that only the conjugated protein remains.
6. Add the conjugated protein solution to a solution containing the sulfhydryl-containing proteins (Protein-SH) in a molar ratio corresponding to that desired for the final conjugate and consistent with the relative number of sulfhydryl and activated amines that exist on the two proteins.
7. Incubate at room temperature with gentle agitation for 1-2 hours.
8. Purify the labeled protein using appropriate methods such as affinity chromatography or size-exclusion chromatography.

This protocol only provides a guideline, and should be modified according to your specific needs.

References:

[1]. Liu X, Mao D, Song Y, et al. Computer-aided design of reversible hybridization chain reaction (CAD-HCR) enables multiplexed single-cell spatial proteomics imaging. Sci Adv. 2022 Jan 14;8(2):eabk0133. doi: 10.1126/sciadv.abk0133. Epub 2022 Jan 14. PMID: 35030012; PMCID: PMC8759754.

Background

Sulfo-SMCC sodium is a water-soluble heterobifunctional crosslinker, consists of a maleimide and an N-hydroxysuccinimide (NHS) ester group to bind to sulfhydryl groups and primary amines, respectively^[1]. Sulfo-SMCC sodium is commonly used in the field of bioconjugation, including peptide and protein labeling^[2], antibody-drug conjugates (ADCs)^{[3][4]}, and labeling biomolecules for detection and imaging^{[5][6]}.

References:

- [1]. Prabhune M, von Roden K, Rehfeldt F, et al. Sulfo-SMCC Prevents Annealing of Taxol-Stabilized Microtubules In Vitro. PLoS One. 2016 Aug 25;11(8):e0161623. doi: 10.1371/journal.pone.0161623. PMID: 27561096; PMCID: PMC4999061.
- [2]. Wängler B, Kostikov AP, Niedermoser S, et al. Protein labeling with the labeling precursor [(18)F]SiFA-SH for positron emission tomography. Nat Protoc. 2012 Nov;7(11):1964-9. doi: 10.1038/nprot.2012.111. Epub 2012 Oct 4. PMID: 23037311.
- [3]. Singh R, Setiady YY, Ponte J, et al. A New Triglycyl Peptide Linker for Antibody-Drug Conjugates (ADCs) with Improved Targeted Killing of Cancer Cells. Mol Cancer Ther. 2016 Jun;15(6):1311-20. doi: 10.1158/1535-7163.MCT-16-0021. Epub 2016 Mar 29. PMID: 27197308.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

- [4]. Si Y, Xu Y, Guan J, et al. Anti-EGFR antibody-drug conjugate for triple-negative breast cancer therapy. *Eng Life Sci.* 2020 Oct 7;21(1-2):37-44. doi: 10.1002/elsc.202000027. PMID: 33531889; PMCID: PMC7837297.
- [5]. Tiwari DK, Tanaka S, Inouye Y, et al. Synthesis and Characterization of Anti-HER2 Antibody Conjugated CdSe/CdZnS Quantum Dots for Fluorescence Imaging of Breast Cancer Cells. *Sensors (Basel).* 2009;9(11):9332-64. doi: 10.3390/s91109332. Epub 2009 Nov 19. PMID: 22291567; PMCID: PMC3260644.
- [6]. Wang G, Li W, Shi G, et al. Sensitive and specific detection of breast cancer lymph node metastasis through dual-modality magnetic particle imaging and fluorescence molecular imaging: a preclinical evaluation. *Eur J Nucl Med Mol Imaging.* 2022 Jul;49(8):2723-2734. doi: 10.1007/s00259-022-05834-5. Epub 2022 May 20. PMID: 35590110; PMCID: PMC9206605.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA