Product data sheet



MedKoo Cat#: 571621		
Name: DSS Crosslinker		
CAS: 68528-80-3		
Chemical Formula: C ₁₆ H	-	
Exact Mass: 368.122	O U	
Molecular Weight: 368.		
Product supplied as:	Powder	
Purity (by HPLC):	$\geq 98\%$	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.	
-	In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

DSS crosslinker, or Disuccinimidyl suberate, is a homobifunctional crosslinker that is cell membrane permeable. DSS crosslinker has amine-reactive NHS esters at both ends of an 8-atom (11.4 angstrom) spacer arm that are used to conjugate proteins. DSS crosslinker can be used to conjugate or crosslink intracellular proteins.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM		
DMF	10.0	0.27		
DMSO	114.67	311.30		
DMSO:PBS (pH 7.2)	0.15	0.41		
(1:5)				

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.71 mL	13.57 mL	27.15 mL
5 mM	0.54 mL	2.71 mL	5.43 mL
10 mM	0.27 mL	1.36 mL	2.71 mL
50 mM	0.05 mL	0.27 mL	0.54 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study In vitro study

1. Park JM, Kim MY, Jose J, Park M. Covalently Immobilized Regenerable Immunoaffinity Layer with Orientation-Controlled Antibodies Based on Z-Domain Autodisplay. Int J Mol Sci. 2021 Dec 31;23(1):459. doi: 10.3390/ijms23010459. PMID: 35008883; PMCID: PMC8745110.

2. Chung Y, Kim Y, Yun N, Oh YJ. Dysregulated autophagy is linked to BAX oligomerization and subsequent cytochrome c release in 6-hydroxydopmaine-treated neuronal cells. Biochem Biophys Res Commun. 2021 Apr 9;548:20-26. doi: 10.1016/j.bbrc.2021.02.045. Epub 2021 Feb 22. PMID: 33631669.

In vivo study

1. Huang B, Wang Q, Jiang L, Lu S, Li C, Xu C, Wang C, Zhang E, Zhang X. Shikonin ameliorated mice colitis by inhibiting dimerization and tetramerization of PKM2 in macrophages. Front Pharmacol. 2022 Aug 17;13:926945. doi: 10.3389/fphar.2022.926945. PMID: 36059938; PMCID: PMC9428403.

2. Lu X, Zheng C, Xu Y, Su Z. Disuccinimidyl suberate cross-linked hemoglobin as a novel red blood cell substitute. Sci China C Life Sci. 2005 Feb;48(1):49-60. doi: 10.1360/04yc0014. PMID: 15844357.

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7. Bioactivity

Biological target:

DSS Crosslinker is a non-cleavable ADC linker used in the synthesis of antibody-drug conjugates (ADCs).

In vitro activity

For antibody orientation control, antibody-binding Z-domain-autodisplaying Escherichia coli (E. coli) cells and their outer membrane (OM) were utilized, and a disuccinimidyl crosslinker was employed for covalent antibody binding. To fabricate the regenerable immunoaffinity layer, capture antibodies were bound to autodisplayed Z-domains, and then treated with the crosslinker for chemical fixation to the Z-domains. Various crosslinkers, namely disuccinimidyl glutarate (DSG), disuccinimidyl suberate (DSS) and poly (ethylene glycol)-ylated bis (sulfosuccinimidyl)suberate (BS(PEG)5), were evaluated, and DSS at a concentration of 500 µM was confirmed to be optimal.

Reference: Int J Mol Sci. 2021 Dec 31;23(1):459. https://pubmed.ncbi.nlm.nih.gov/35008883/

In vivo activity

Result of isoelectric focusing showed that the pl of DSS cross-linked Hb was in the range of 4.6-5.2, similar to that of serum albumin. The safety of DSS cross-linked Hb was favored by animal tests on rats and guinea pigs. Exchange transfusion experiment with DSS cross-linked Hb using rats as a model indicated no pressor effect or other significant side effects.

Reference: Sci China C Life Sci. 2005 Feb;48(1):49-60. https://pubmed.ncbi.nlm.nih.gov/15844357/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.