

Crosslinking

Crosslinking is the process of chemically joining two or more molecules by a covalent bond. Crosslinking reagents contain reactive ends to specific functional groups (primary amines, thiols, etc.) on proteins or other molecules. Crosslinking reagents have been used to assist in determination of near-neighbour relationships, three-dimensional structures of proteins, and molecular associations in cell membranes. They also are useful for solid-phase immobilisation, hapten-carrier protein conjugation, preparing antibody-enzyme conjugates, immunotoxins and other labelled protein reagents. Other uses include modification of nucleic acids, drugs and solid surfaces.

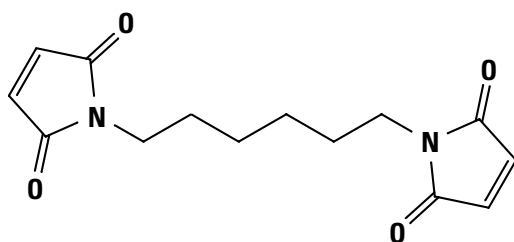
Conformational changes of proteins associated with a particular interaction may be analysed by performing crosslinking studies before and after the interaction occurs. Comparing crosslinkers with different arm lengths for success of conjugation can provide information about the distances between interacting molecules. Examining which crosslinkers effectively conjugate to particular domains of a protein reveals information about tertiary and quaternary structure.

BMH, Thermo Scientific Pierce

Thermo
SCIENTIFIC

NEW

PN



BMH
M.W. 276.29
Spacer Arm 13.0 Å

Mild sulfhydryl-to-sulfhydryl crosslinker.

- Reactive groups: maleimide (homobifunctional)
- Reactive toward: sulfhydryl groups

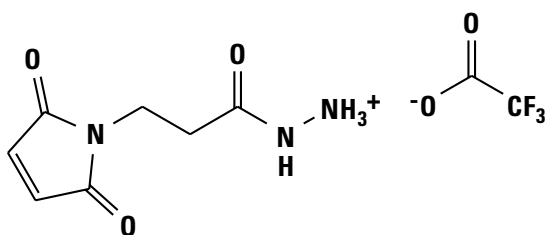
Catalogue No	Description	Quantity
PN22330	BMH (Bismaleimido-hexane)	50mg

BMPH, Thermo Scientific Pierce

Thermo
SCIENTIFIC

NEW

PN



BMPH
M.W. 297.19
Spacer Arm 8.1 Å

Facilitates glycoconjugate formation.

- Water soluble
- Reactive groups: maleimide and hydrazide
- Reactive toward: sulfhydryl groups and carbonyl aldehyde groups (or carboxyl groups when used with EDC)

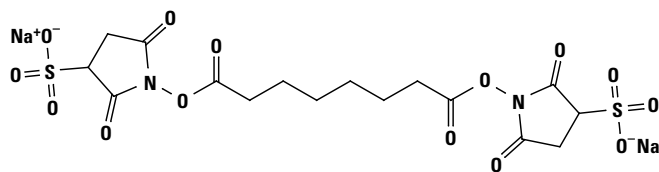
Catalogue No	Description	Quantity
PN22297	BMPH (N-[β-Maleimidopropionic acid] hydrazide·TFA)	50mg

BS³ (Sulfo-DSS), Thermo Scientific Pierce

Thermo
SCIENTIFIC

NEW

PN



BS³
M.W. 572.43
Spacer Arm 11.4 Å

A popular membrane impermeable, water soluble DSS analogue.

- Reactive groups: sulfo-NHS ester (homobifunctional)
- Reactive toward: amino groups

Applications:

- Crosslink cell-surface proteins before cell lysis and immunoprecipitation
- Identify receptor-ligand interactions by chemical crosslinking
- 'Fix' protein interactions to allow identification of weak or transient protein interactions
- Identify near-neighbour protein interactions
- Protein crosslinking to create bioconjugates via single-step reactions
- Immobilise proteins onto amine-coated surfaces

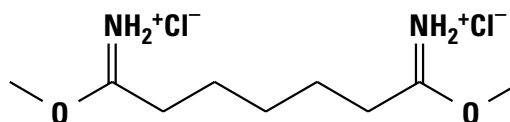
Catalogue No	Description	Quantity
PN21580	BS³ (Bis[sulfosuccinimidyl]suberate)	50mg
PN21585	BS³, no-weight format	8 x 2mg
PN21586	BS³	1g

DMP, Thermo Scientific Pierce

Thermo
SCIENTIFIC

NEW

PN



DMP
M.W. 259.17
Spacer Arm 9.2 Å

Crosslinks retain native charge of proteins.

- Water soluble
- Rapid reaction with amines at alkaline pH values (pH8 to pH10)
- Amidine bond retains net charge character of protein
- Reversible at high pH values
- Reactive groups: imidoester (homobifunctional)
- Reactive toward: amino groups

Catalogue No	Description	Quantity
PN21666	DMP (Dimethyl pimelimidate·2HCl)	50mg
PN21667	DMP	1g