

ImidoesterCrosslinkers:DMA, DMP, DMS

Cat.No.:C100411/C100412/ C100413

C100411 package: 250 mg/1 g DMA

C100412 package: 250 mg/1 g DMP

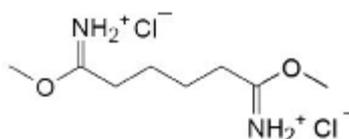
C100413 package: 250 mg/1 g DMS

Description

DMA (Dimethyl adipimidate•2 HCl)

Molecular Weight: 245.15

Spacer Arm Length: 8.6 Å

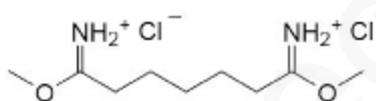


DMP (Dimethyl pimelimidate•2 HCl)

DMP (Dimethyl pimelimidate•2 HCl), 50 mg

Molecular Weight: 259.17

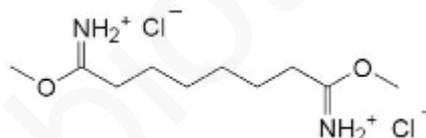
Spacer Arm Length: 9.2 Å



DMS (Dimethyl suberimidate•2 HCl)

Molecular Weight: 273.2

Spacer Arm Length: 11.0 Å



Storage

Upon receipt store desiccated at 4°C. Product is shipped at ambient temperature.

Introductions

DMA, DMP and DMS are water soluble, membrane permeable, homobifunctional imidoester crosslinkers. The imidoester functional group is one of the most specific acylating groups available for the modification of primary amines and has minimal cross reactivity toward other nucleophilic groups in proteins. In addition, the imidoamide reaction product does not alter the overall charge of the protein, potentially retaining the native conformation and activity of the protein.

General Procedure for Crosslinking Proteins

The following protocol is adapted from a procedure described by Packman and Perham.

A. Materials Required

1. Crosslinking Buffer: 0.2 M triethanolamine, pH 8.0. Do not use buffers that contain primary amines, as these buffers will compete with the crosslinking reaction.
2. Stop Solution: Glacial acetic acid. Alternatively, Tris or glycine can be used to quench the reaction.

B. Procedure

1. Prepare the appropriate protein sample in crosslinking buffer.
2. Add a 10-fold molar excess of the cross-linker to the protein when the protein concentration is above 5 mg/ml. If the protein concentration is below 5 mg/ml add a 20- to 30-fold molar excess of the crosslinker.
3. Incubate the reaction at room temperature for 30-60 minutes.
4. Add glacial acetic acid at a 1:4 ratio to the sample to stop the reaction. Alternatively, stop the reaction by adding Tris or glycine at a 20-50 mM final concentration.

Note

1. Imidoester crosslinkers are moisture sensitive. To avoid condensation onto the product, fully equilibrate vial to room temperature before opening (typically requires at least 30 minutes).
2. For imidoester crosslinking reactions use buffers such as phosphate, borate, carbonate and HEPES that do not contain primary amines. Imidoesters react with amines at pH 7-10. For optimal crosslinking efficiency, use pH 8-9.
3. Imidoester crosslinkers cannot be stored in solution because the imidate moiety is easily hydrolyzed. DMA, DMP and DMS are non-cleavable forms of imidoester crosslinkers. By contrast, crosslinks with DTBP can be cleaved by reducing the disulfide bond of the spacer arm with 100-150 mM DTT at 37°C for 30 minutes.

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