

MAL-dPEG®24-acid, product number QBD-10315, is a crosslinker that joins sulfhydryl groups to free amines through a single molecular weight polyethylene glycol (PEG) chain of discrete length. The maleimidopropyl moiety reacts with sulfhydryl groups via a Michael addition reaction. The propionic acid terminus of the molecule reacts directly with free amines using EDC or another carbodiimide to form amide bonds. Alternatively, activation of the propionic acid group with N-hydroxysuccinimide (NHS), 2,3,5,6-tetrafluorophenol (TFP), or some other acylating agent permits amide bond formation under mild, controlled conditions.

Chemical couplings between free amines and free thiols are among the most popular, most useful crosslinking reactions in bioconjugate chemistry. These syntheses require heterobifunctional reagents that bridge the two groups. While traditional crosslinkers are hydrophobic molecules, Vector Laboratories' crosslinking products are water-soluble, amphiphilic, single molecular weight PEG compounds with discrete chain lengths, hence the dPEG® tradename under which we sell them. Almost inevitably, the conjugation of conventional hydrophobic crosslinking reagents to biomolecules triggers problems such as aggregation and precipitation of the conjugates. Conversely, these problems do not occur with our water-soluble, non-immunogenic dPEG® crosslinkers.

The reaction of the maleimide end of MAL-dPEG®24-acid with a sulfhydryl proceeds optimally at pH 6.5 – 7.5. Use the lowest reasonable pH within this range. Above pH 7.5, free amines compete with free thiols at the maleimide reaction site, which can cause confusing results. Moreover, at higher pH values, the maleimide ring may open to form unreactive maleamic acid.

**For research use only. Not intended for therapeutic or diagnostic use in animals or humans.**



After the maleimide end of the molecule reacts with a sulfhydryl, the terminal propionic acid group may be left unreacted for charge modification or the conjugate or activated with an acylating agent such as NHS or TFP. The active ester then reacts with free amines to complete the crosslink.

## SPECIFICATIONS

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAS Number</b>            | 871133-36-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Molecular Weight</b>      | 1297.47; single compound                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Chemical Formula</b>      | C <sub>58</sub> H <sub>108</sub> N <sub>2</sub> O <sub>29</sub>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Purity</b>                | > 98%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Unit Size</b>             | 100 mg, 1000 mg                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Solubility</b>            | Methylene chloride, DMAC or DMSO or waterMethylene chloride, Acetonitrile, DMAC or DMSO or water.                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Spacers</b>               | dPEG® Spacer is 82 atoms and 95.2 Å                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Storage Instructions</b>  | -20°C; Always let come to room temperature before opening; be careful to limit exposure to moisture and restore under an inert atmosphere; stock solutions can be prepared with dry solvent and kept for several days (freeze when not in use). dPEG® pegylation compounds are generally hygroscopic and should be treated as such. This will be less noticeable with liquids, but the solids will become tacky and difficult to manipulate, if care is not taken to minimize air exposure. |
| <b>Shipping Instructions</b> | Ambient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## DOCUMENTS

- [Safety Data Sheet](#)
- [Datasheet](#)

## GALLERY IMAGES

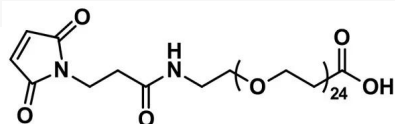
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