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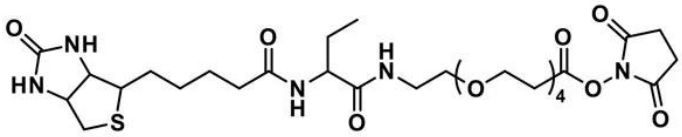
NHS-DPEG®4-BIOTINIDASE RESISTANT BIOTIN

SKU: QBD-10202



"NHS-dPEG®4-biotinidase-resistant biotin, product number QBD-10202, is a water-soluble biotinylation reagent modified to resist hydrolysis by biotinidase (EC 3.5.1.12). This product combines Biotinoyl-2-aminobutyric acid with the N-hydroxysuccinimidyl (NHS) ester of a single molecular weight, discrete polyethylene glycol (dPEG®) linker. NHS-dPEG®4-biotinidase-resistant biotin retains biotin's typical high affinity for avidin and streptavidin. However, the modified biotin prevents recycling by biotinidase. This product is useful in applications such as ELISAs of tissue samples and antibody pretargeting, where endogenous biotinidase can recycle biotin.
Biotinidase is an amidohydrolase that breaks the covalent bond between biotin and amino acids such as lysine (i.e., biocytin). In vivo, biotinidase recycles biotin. Although necessary for healthy bodily function, biotinidase potentially creates problems when biotinylated proteins are used in serological assays, since endogenous biotinidase removes the biotin from these proteins.

Dr. D. Scott Wilbur and colleagues at the University of Washington in Seattle developed biotinidase-resistant biotin in 2006 to facilitate in vivo antibody pretargeting. However, to improve the product's water solubility, a short amino-dPEG®4-propionic acid linker was conjugated to the biotinidase-resistant biotin and subsequently functionalized as an NHS ester.

Like our other dPEG® biotinylation products, NHS-dPEG®4-biotinidase-resistant biotin will not cause aggregation and precipitation of biomolecules to which it is conjugated, and the dPEG® spacer reduces non-specific binding.

NHS-dPEG®4-biotinidase-resistant biotin resists amide hydrolysis because of the non-natural amino acid to which it is conjugated. It is potentially beneficial for applications using serological fluids that contain endogenous biotinidase. Useful roles for NHS-dPEG®4-biotinidase-resistant biotin include the following:
therapeutic applications such as antibody pretargeting with biotin-streptavidin systems;
supramolecular constructs (e.g., nanoparticles) used in vivo that depend on biotin-(strept)avidin affinity to maintain structural integrity; and,

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

ELISAs of serological fluids and tissue samples using biotin-(strept)avidin affinity."

Specifications

Unit Size	100 mg, 1000 mg
Molecular Weight	673.78; single compound
Chemical formula	$C_{29}H_{47}N_5O_{11}S$
CAS	1334172-61-0
Purity	> 96%
Spacers	dPEG® Spacer is 19 atoms and 21.5 Å
Shipping	Ambient
Typical solubility properties (for additional information contact Customer Support)	Methylene chloride, DMAC or DMSO. Limited solubility in acetontrile.
Storage and handling	-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.