



# Product Catalog


Leading innovator, producer and provider of monodisperse  
discrete pegtm (dPEG™) derivatives

**QUANTA BIODESIGN**  
L I M I T E D

Fax your orders to 614 760-9781 or **NEW:** Order online at [www.quantabiodesign.com](http://www.quantabiodesign.com)

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Last update 12/09

 uanta BioDesign, Ltd. was founded in March, 1999 in Powell, Ohio by **Paul D. Davis, Ph.D.** for the purpose of developing and commercializing an extensive line of products for companies involved in drug discovery and diagnostic development programs. These products are based on our proprietary discrete polyethylene glycol (dPEG<sup>®</sup>) chemistries, including our unique processes for making these important compounds. Our single molecular weight ethylene glycol conjugation technology, dPEG<sup>®</sup>, can eliminate common problems found in the development of diagnostic and therapeutic products, such as aggregation and non-specific interactions, poor water solubility, poor delivery, delivery issues/options, short serum half life, toxicity and antigenicity.

The dPEG<sup>®</sup> product line is a unique technology platform which can be custom tailored to meet specific physical, chemical and morphological requirements in a broad array of diagnostic and therapeutic applications. Chemistry applications which incorporate dPEG<sup>®</sup> products include conjugations, simple chemical modifications, cross linking, biotinylation, signal amplification, modification of biological therapeutics and peptide synthesis.

Recently we introduced dPEG<sup>®</sup> products that offer new delivery options as well. We are involved in developing new cross-linking and labeling chemistries that incorporate the dPEG<sup>®</sup> technology, and will allow for completely new approaches to existing opportunities in these same areas of therapeutic and diagnostic development, and will revolutionize many of these areas as the new generations of drugs and diagnostics evolve.

Each product is of high purity, a single discrete compound and available in bulk quantities at discounted prices.

Please also visit our website: [www.QuantaBioDesign.com](http://www.QuantaBioDesign.com).



## How do I order?

- **Phone:** (866) 792-9222 or (614) 792-2958  
Monday through Friday 9:00 am to 5:00 pm (EST)
- **Fax:** (614) 760-9781 (24 hours, 7 days a week)
- **E-mail:** [sales@quantabiodesign.com](mailto:sales@quantabiodesign.com)
- **Website:** [www.quantabiodesign.com](http://www.quantabiodesign.com)

## Ordering Information needed

- Your name or customer account name
- Telephone and /or Fax
- Shipping and Billing Addresses
- Purchase Order # or Credit Card Information or other Payment Method
- Product number and Quantities
- Valid e-mail address (if available)
- If confirmation is requested, please request on the order form
- Orders can be placed any time by fax or e-mail

## Payment

We accept MasterCard, Visa, American Express, USD check, and bank transfers. Our banking information will be on the invoice. (Please do not send cash)

## Shipping and Storage Details

Products will usually ship the order the same day, if it is received by 3:00pm EST. Most of the compounds we sell are stable under normal conditions. We ship our compounds via Fedex overnight with ice packs or under refrigerated conditions as necessary. Orders outside the United States are shipped by Fedex International Priority. We recommend storing Quanta products in the freezer at -20°C or in the refrigerator at 4° for long term storage. The storage details will be shipped with the product.

**No products are shipped or delivered on weekends or U.S. holidays.**



If you have a technical question about a product you received or have seen in the catalog, please send an e-mail to [tech@quantabiodesign.com](mailto:tech@quantabiodesign.com) or call us at (614)792-2958 or (866) 792-9222.

## Material Safety Data Sheets

MSDS's are available on our website under each individual product. We can also fax or e-mail a copy. Please mention your request on the order form if needed.

## Product Analysis

Quanta BioDesign's products are unique, single molecular weight (MW), discrete PEG (dPEG™) compounds, synthesized de novo from pure, small units (e.g., triethylene glycol or tetraethylene glycol). Purity is assayed by HPLC, TLC, and/or NMR.

## Certificate of Analysis

A certificate of analysis (C of A) will be sent with your product(s) if requested. The C of A provides the test method used, the results, and the purity level of the product.



## United States

**Peptides International**  
11621 Electron Drive  
Louisville, Kentucky 40299  
Phone: 1-800-777-4779  
Fax: (502)-267-1329  
Web: [www.pepnet.com](http://www.pepnet.com)

**ThermoFisher Scientific**  
P.O. Box 117  
Rockford, Illinois 61105  
Phone: (800) 874-3723  
Fax: (800) 842-5007  
Web: [www.piercenet.com](http://www.piercenet.com)

**VWR International**  
1310 Goshen Parkway  
West Chester, PA 19380  
Orders: 800-932-5000  
Web: [www.vwr.com](http://www.vwr.com)

**Tim Tec, Inc.**  
100 Interchange Boulevard  
Newark, Delaware 19711  
Phone: (302) 292-8500  
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Web: [www.timtec.net](http://www.timtec.net)

## Japan

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Fax: +81 75 251-1762  
Web: [www.wako-chem.co.jp](http://www.wako-chem.co.jp)  
E-mail: [info.intl@nacalai.co.jp](mailto:info.intl@nacalai.co.jp)  
Web: [www.nacalai.com](http://www.nacalai.com)

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Fax: +49 (0) 30 9489 2351  
Web: [www.celares.co](http://www.celares.co)

dPEG<sup>®</sup>  
Reagents  
for  
Nucleic Acid

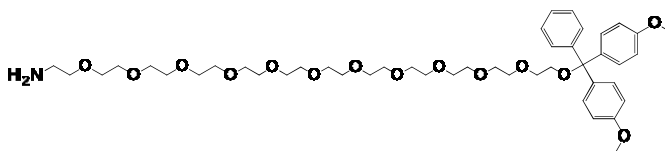
# Amino-dPEG<sup>®</sup><sub>12</sub>-ODMT



## Product Features and Benefits:

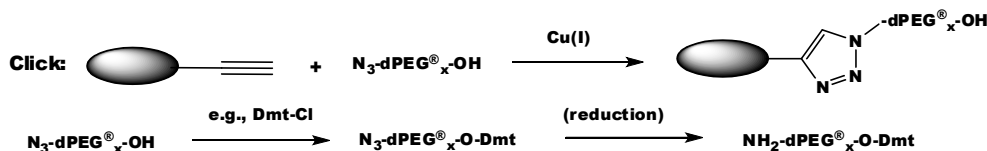
- Carbonyl/carboxyl reactive dPEG<sup>®</sup> pegylation reagent that reacts with acids (activated in situ), active esters and aldehydes (and optionally with NaCNBH<sub>3</sub>)
- The PROTECTED HYROXYL, as the 4,4'-dimethoxytrityl (Dmt-) alcohol is easily deprotected with mild acid, including TFE (trifluoroethanal)
- Imparts significant and surprising water solubility, and the modifier itself is non-immunogenic and non-toxic
- Adds 560 D as the pegylation chain which is 38 atoms and 43.9 Å long (extended form)

Product #	Description	100 mg	1000 mg
10342	Amino-dPEG <sup>®</sup> <sub>12</sub> -ODMT	\$225	\$900



Single compound: Mol. Wt.: 848.03  
dPEG<sup>®</sup> Spacer is 38 atoms and 43.9 Å

# Azido-dPEG<sup>®</sup><sub>x</sub>-alcohol



## Product Features and Benefits:

- x = 4, 8, 12, 24 or 36
- Unique AZIDO containing dPEG<sup>®</sup>-pegylation reagent. The azide can potentially be reacted with an acetylene moiety (Click reaction) or an anylphosphite derivative, as part of several Staudinger ligation options (see references).
- Hydroxy functionality can be converted to a more reactive functional group.
- dPEG<sup>®</sup> pegylation arm or spacer is extremely hydrophilic and non-immunogenic/ non-antigenic
- HO-dPEG<sup>®</sup><sub>12</sub> pegylation tail will reduce or eliminate problems with aggregation and immunogenicity --
- dPEG<sup>®</sup><sub>12</sub> pegylation tail is one of several choices of spacer size we can make available, providing a range of size options for optimizing the properties of your particular application.

## Applications:

Two very active areas of development using the azide functionality are a) "Click" chemistry, the particular example of the Cu catalyzed reaction of the azide and a terminal acetylene; and b) the Staudinger ligation using functionalized diaryl phosphines to couple the azide in a covalent fashion to form amides.

The tremendous attraction to the azide functionality is its very low reactivity and high stability under most conditions, especially where other conjugating functionality have to be used very cautiously due to their limited stability, or require careful control of variables like pH in order to insure high yielding reactions. However, under very specific conditions, the azide is very reactive and highly selective in its reactivity.

As is the case in the current very economically competitive environment, many of the applications of these chemistries may be protected intellectual property.

## Protocols:

For particular protocols, please look in the references cited or more detailed application references contained within.

## References:

**Click Applications:** a. "Click Chemistry: Diverse Chemical Function form a Few Good Reactions," H. C. Kolb, M.G. Finn, and K. Barry Sharpless, *Angew. Chem., Int. Eng. Ed.*, 40, 2004-2021 (2001); b. "The growing impact of click chemistry on drug discovery," H. C. Kolb and K. Barry Sharpless, *Drug Discovery Today*, 8(24), 128-1137 (2003); c. "CuI-Catalyzed Alkyne-Azide "Click" Cycloadditions from a Mechanistic and Synthetic Perspective," V. C. Bock, H. Hiemstra and J. H. van Maarseveen, *Eur. J. Org. Chem.*, 51-68 (2006); d. "A3-Type Star Polymers via Click Chemistry," O. Altintas, B. Yankul, G Hizal and U. Tunca, *J. Poly. Sci.: Part A, Polymer Chem.*, 44, 6458-6465 (2006); e. "Preparation of alumina supported copper nanoparticles and their application in the synthesis of 1, 2, 3-triazoles," M. L. Kantam, et al., *J. Mol. Catal. A: Chem.*, 256, 273-277 (2006); f. "A Rapid and Versatile Method to Label Receptor Ligands Using "Click" Chemistry: Validation with the Muscarinic M1 Antagonist Pirenzepine," *Bioconjugate Chemistry*, 17, 1618-1623 (2006).

**Staudinger ligations:** a. "The Staudinger Ligation-A Gift to Chemical Biology," M. Kohn and R. Breinbauer, *Angew. Chem. Int. Ed.*, 43, 3106 (2004); b. "Traceless Staudinger Ligation of Glycosyl Azides with Triaryl Phosphines: Stereoselective Synthesis of Glycosyl Amides," A. Bianchi and A. Bernardi, *J. Org. Chem.*, 71, 4565-4577 (2006); c. "Reaction Mechanism and Kinetics of the Traceless Staudinger Ligation," M. Soelner, B. L. Nilsson and R. T. Raines, *J. Amer. Chem. Soc.*, 128 (27), 8820-8828 (2006). The first reference is an excellent and recent review in a very active area. Search engines for "Staudinger ligation" for many excellent and additional references.

