

Gold Nanoshells Conjugation Kit-Covalent PRODUCT DATA SHEET

Gold Nanoshells Conjugation Kit-Covalent

Description

Gold nanoshells (GNSs) commonly contain a silica core and a thin layer of gold. GNSs are considered a promising material for significantly enhancing the photothermal efficiency because of their high photothermal conductivity and strong absorption in the NIR region. In addition, gold nanoshells have also attracted extensive attention as excellent candidates for photothermal therapy because of their good biocompatibility and low toxicity. For further enhancement of polymer coating and anticancer drug loading, higher targeting, and a better therapeutic efficiency, a variety of thiol chitosan (TCS), paclitaxel (PTX), and anti-epidermal growth factor receptor (anti-EGFR) antibodies have been conjugated to the GNS surface.

Abvigen can provide high quality Gold Nanoshells Conjugation Kit-Covalent, which includes 10 mL of BioReady 150 nm Gold Nanoshells with a carboxyl surface, provided at 20 OD. The product has high repeatability between batches, which can meet the needs of different personalized materials such as research and development, testing and production of various customers.

For custom sizes, formulations or bulk quantities please contact our customer service department. Website: <u>www.abvigen.com</u> Phone: +1 929-202-3014 Email: <u>info@abvigenus.com</u>

Characteristics

Surface: Carboxyl Description: Covalently bound. Conjugatable surface. Solvent: 0.02 mM potassium carbonate Surface chemistry: Lipoic acid TEM diameter: 155 ± 15 nm CV: ≤ 15% Hydrodynamic diameter (DLS): 145 ~ 195 nm Zeta potential: ≤ -40 mV pH of solution: 6.0 ~ 9.5 Peak wavelength (λmax): 770 ~ 840 nm

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Kit composition

Item		Amount	Storage
Buffer exchange /	Column, 10 kDa, in	1 column in 1 tube	2–25°C
desalting column	housing tube		
Note: column and	Additional housing	1 tube	2–25°C
housing tubes	tube		
packaged together			
Desalting buffer for antibody, 10 mM potassium		10 mL	2–25°C
phosphate			
150 nm Gold Nanoshells, Carboxyl, 20 OD		10 mL	2–8°C
Potassium phosphate reaction buffer		50 mL	2–25°C
5 mM potassium phosphate, 0.5% PEG 20 kDa, pH			
7.4.			
Sodium phosphate reaction buffer		50 mL	2–25°C
5 mM sodium phosphate, 0.5% PEG 20 kDa, pH 7.4.			
PBS reaction buffer stock, 50×		1 mL	2–25°C
0.5x PBS, 25% PEG 20 kDa. Dilute prior to use.			
10 mL PETG reagent bottle, empty (for dilution of		1 each	2–25°C
50× PBS reaction buffer)			
Formulation will be 0.01x PBS, 0.5% PEG 20 kDa pH			
7.4 upon dilution to 1x.			
EDC & Sulfo-NHS set,	EDC	3 sets	2–8°C
10 mg aliquot of each.	Sulfo-NHS		
Single use only.			
Hydroxylamine quencher		100 µL	2–25°C
NCX block buffer		5 mL	2–8°C
4 mM sodium tetraborate, 1% BSA, 0.05% sodium			
azide, pH 8.2			
NCX conjugate diluent		10 mL	2–8°C
0.5× PBS, 0.5% BSA, 0.5% casein, 1% Tween 20,			
0.05 % azide pH 8			



1.5 mL microcentrifuge tubes	20 each	2–25°C
NCX lateral flow running buffer	10 mL	2–25°C
1× PBS, 1% Tween 20 pH 7.4		
High Sensitivity Conjugation Kit product guide	1 each	2–25°C

TEM of Gold Nanoshells



Advantages

Pre-validated consumables eliminate the risk of purchasing non-compatible reagents, saving weeks to months of unnecessary troubleshooting;

Increase your assay sensitivity up to 20-fold with 150 nm gold nanoshells compared to 40 nm gold nanoparticles;

Reduces antibody costs up to 65% compared to physisorption;

Saves time by reducing the number of conjugations necessary to find optimal antibody pairs;

Increases conjugate stability in a wide range of sample matrices;

Eliminates the need for repeated pH and salt sweeps for each new lot of gold nanoparticles;

Precisely controls the number of antibodies on the particle surface and extends the dynamic range in competitive assay formats;

Includes answers to frequently asked questions and troubleshooting tips to help you rapidly succeed in your diagnostic development projects.



Applications

Biological immune testing Protein labeling Optical imaging Drug carrier Photothermal therapy Sensors Catalyst

Quality Control

When stored as recommended (2 ~ 8°C), Gold Nanoshells are stable for > 1 year. Be sure to visually inspect your materials before each use. If there are any visible particulates floating in the solution, if the color of the solution has changed, or if the color intensity has decreased, the nanoparticles may have aggregated. These materials should be analyzed via UV-Visible spectroscopy, DLS, or TEM for quality verification.

Do not freeze. If nanomaterials in solution are frozen, the nanoparticles will irreversibly aggregate and the solution color may change.

Handling

Shake each bottle prior to use. During storage, the nanoparticles may settle to the bottom of the vial (especially nanoparticles > 30 nm in diameter). Prior to aliquoting or use, resuspend the settled nanoparticles by vigorously shaking the bottle until the solution is homogenous. This will typically require ~30 s of mixing. Visually inspect the bottom of the container to ensure that there are no remaining settled particles.

Ordering Information

Website: <u>www.abvigen.com</u> Phone: +1 929-202-3014 Email: <u>info@abvigenus.com</u>