



## **Methyl Gold Nanoparticles-PEG5K** **PRODUCT DATA SHEET**

### **Methyl Gold Nanoparticles-PEG5K**

#### **Description**

Gold nanoparticles are widely used nanomaterials and generally referred to as colloidal gold in biological research. Colloidal gold markers generally has a particle size between 10 and 100 nm, and will show different colors with the change of particle size. Gold nanoparticles have excellent biocompatibility, rich surface modification properties, and unique optical properties related to the surfactant, shape, size, and structure of the nanoparticles. According to their different characteristics, it can be applied to various fields of biomedicine, such as medical testing, medical imaging, drug delivery, etc.

Methoxy gold nanoparticles have precisely engineered surface chemistry that renders them inert in most applications. This inert property allows these nanoparticles to be used as excellent control samples when in combination with one of our many other functionalized nanoparticles. In applications where the nanoparticles are not being used as controls, the surface chemistry enables them to be used in solutions with much higher salt concentrations relative to the corresponding standard or stabilized nanoparticles. Methoxy gold nanoparticles are available with diameters ranging from 5 nm ~ 100 nm and are also available with 2 different spacer lengths (2 kDa and 5 kDa), allowing for better optimization.

Abvigen provides a variety of gold nanoparticles, gold nanorods, gold nanocages, gold nanostars, gold nanobipyramids, and other products, the product particle size is optional, the concentration can be customized, the surface can be modified with different groups, and can be appropriately selected according to the customer's use.

For custom sizes, formulations or bulk quantities please contact our customer service department.

**Website:** [www.abvigen.com](http://www.abvigen.com) **Phone:** +1 929-202-3014 **Email:** [info@abvigenus.com](mailto:info@abvigenus.com)

#### **Characteristics**

Composition: Methyl Gold Nanoparticles-PEG5K

Shape: Spherical

Core diameter: 5 ~ 100 nm



Size dispersity: Coefficient of Variance (CV) < 12%

Polydispersity index (PDI): < 0.150

Size: 0.5 mL; 1 mL

Amount: OD = 50

Surface functional group: PEG5K-CH3

Absorbance ( $\lambda_{\text{max}}$ ): 510 ~ 570 nm

Buffer: DI Water

Form: Suspension

Supplied in USP Grade H<sub>2</sub>O

### **Advantages**

Monodisperse

Well defined sizes from 5 nm to 100 nm

Precisely engineered surface

Low protein binding surface

Extensive range of surface functionalities designed for in vitro and in vivo applications

### **Application**

Ideal as an inactive control to other functionalized gold nanoparticles, e.g. carboxyl, amine, and biotin.

Ideal nanoparticles for passive tumor targeting studies in vivo.

### **Storage**

This product should be stored at 4°C. **DO NOT FREEZE.** If stored as specified, Abvigen Methyl Gold Nanoparticles-PEG5K are stable for at least 12 months.

### **Handling**

When stored for a long period of time gold nanoparticles may sediment at the bottom of the vial, which is especially true for larger particle sizes. Prior to use, re-suspend the sedimented particles by swirling until a homogenous solution is obtained.

### **Note**

These products are for R&D use only, not for drug, household, or other uses.

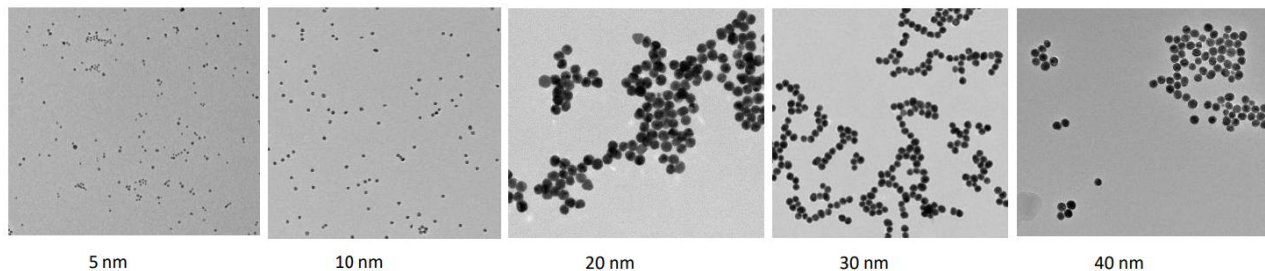
## NPS of Gold Nanoparticles, OD 50

Diameter	Peak SPR Wavelength	Optical density	Wt. conc	Size Dispersity %PDI	Particles/ml	Molarity mol/ml
5 nm	515-520 nm	OD 50	2.5 mg/ml	< 20%	1.98E+15	3.28E-09
10 nm	520 nm	OD 50	2.5 mg/ml	< 15%	2.47E+14	4.10E-10
20 nm	524 nm	OD 50	2.5 mg/ml	< 10%	3.09E+13	5.13E-11
30 nm	526 nm	OD 50	2.5 mg/ml	< 6%	9.15E+12	1.52E-11
40 nm	530 nm	OD 50	2.5 mg/ml	< 4%	3.86E+12	6.41E-12
50 nm	535 nm	OD 50	2.5 mg/ml	< 4%	1.98E+12	3.28E-12
60 nm	540 nm	OD 50	2.5 mg/ml	< 4%	1.14E+12	1.90E-12
70 nm	548 nm	OD 50	2.5 mg/ml	< 4%	7.21E+11	1.20E-12
80 nm	553 nm	OD 50	2.5 mg/ml	< 4%	4.83E+11	8.02E-13
90 nm	564 nm	OD 50	2.5 mg/ml	< 4%	3.39E+11	5.63E-13
100 nm	572 nm	OD 50	2.5 mg/ml	< 4%	2.47E+11	4.10E-13

## Gold Nanoparticles Centrifugation Parameters

Particle Size	Speed (g)	Time (min)
5 nm	100000	30
10 nm	17000	60 (~ 50% recovery)
20 nm	6500	30
30 nm	4500	30
40 nm	2500	30
50 nm	2000	30
60 nm	1125	30
80 nm	400	30
100 nm	400	30

## TEM of Abvigen gold nanoparticles of different size





## Ordering Information

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Phone: +1 929-202-3014

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