



Amine Gold Nanoparticles-PEG5K PRODUCT DATA SHEET

Amine 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.

Amine gold nanoparticles are available with two different lengths of PEG surface spacers, i.e. 3000 Da and 5000 Da offering control of particle hydrodynamic size. These products are suitable for conjugating proteins and DNA using standard EDC/NHS coupling chemistry. Our amine gold nanoparticles are available in 11 different sizes ranging from 5 ~ 100 nm, are more than 95% spherical and have uniform size distribution (CV < 12%).

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 **Phone:** +1 929-202-3014 **Email:** info@abvigenus.com

Characteristics

Composition: Amine 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-NH₂

Absorbance (λ_{max}): 510 ~ 570 nm

Nr of amine groups on surface: $\sim 1/\text{nm}^2$

Buffer: DI Water

Form: Suspension

Advantages

Monodisperse

Well defined sizes from 5 nm to 100 nm

Precisely engineered surface with an optimized amine group density for easy conjugation

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

Application

Ideal for development of gold conjugates for use in applications such as blotting, lateral flow assays, LSPR assays, light microscopy, and transmission electron microscopy (TEM) among others.

Storage

This product should be stored at 4°C. **DO NOT FREEZE.** If stored as specified, Abvigen Amine 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.

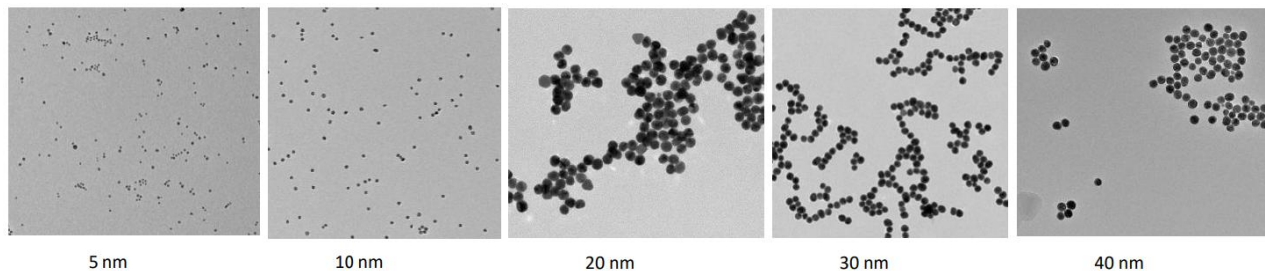
NPS of Gold Nanoparticles, OD 50

| 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

Website: www.abvigen.com

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Email: info@abvigenus.com