



Gold Nanoparticles-Azide PRODUCT DATA SHEET

Gold Nanoparticles-Azide

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.

Azide functionalized gold nanoparticles are precisely engineered for covalent conjugation to any molecule tagged with an alkyne group. With the use of a copper(I) catalyst, the azide group on the gold and the alkyne-tagged molecule undergo a cycloaddition to form a stable and permanent linkage. The reaction between these 2 functional groups typically occurs rapidly, in high yield, and with no by-products, meaning that the customer will always have a stable conjugate and enough of it to use in subsequent downstream applications such as lateral flow assays and imaging. These reactions are also especially useful in applications involving oligonucleotides due to the higher prevalence of alkyne modifications. Abvigen azide functionalized gold nanoparticles are available in 11 different sizes ranging from 5 nm ~ 100 nm, are more than 95% spherical and have a uniform size distribution (CV < 12%). Products are provided as suspensions at 50 OD.

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: Gold Nanoparticles-Azide

Shape: Spherical

Core diameter: 5 ~ 100 nm

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

Polydispersity index (PDI): < 0.200

Size: 0.5 mL; 1 mL

Amount: OD = 50

Surface: Azide

Absorbance (λ_{max}): 510 ~ 570 nm

Azide surface density: 1/nm²

Buffer: DI Water

Form: Suspension

Advantages

Monodisperse

Well defined sizes from 5 nm to 100 nm

Precisely engineered surface with an optimized azide density

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, 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 Gold Nanoparticles-Azide 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 prominent for larger particle sizes. Prior to use, re-suspend the sedimented particles by thorough mixing 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

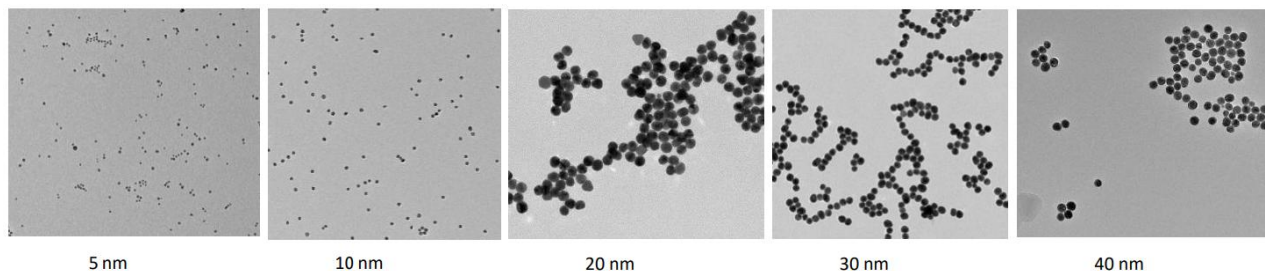
Diameter	Peak SPR Wavelength	Optical density	Wt. conc	Size Dispersity %PDI	Particles/ml	Molarity mol/ml
5 nm	515-520 nm	OD 50	2.5 mg/ml	< 20%	1.98E+15	3.28E-09
10 nm	520 nm	OD 50	2.5 mg/ml	< 15%	2.47E+14	4.10E-10
20 nm	524 nm	OD 50	2.5 mg/ml	< 10%	3.09E+13	5.13E-11
30 nm	526 nm	OD 50	2.5 mg/ml	< 6%	9.15E+12	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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Email: info@abvigenus.com