



Gold Nanoparticles-Ni-NTA PRODUCT DATA SHEET

Gold Nanoparticles-Ni-NTA

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.

Ni-NTA gold nanoparticles have precisely engineered surface chemistry consisting of a PEG spacer terminated with a nitrilotriacetic acid (NTA) group chelated to a Ni^{2+} ion. This specific functionality binds to His tags, which are a common modification added to the terminal end of proteins or antibodies, consisting of 6 sequential histidine residues. The interaction between Ni-NTA and His tags enables many applications when coupled to our gold nanoparticles: preparation of gold conjugates, protein purification and isolation, cell localization and uptake studies, use in assays, and more. Abvigen Ni-NTA 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 ($\text{CV} < 12\%$). 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-Ni-NTA

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: Ni-NTA

Absorbance (λ_{max}): 510 ~ 570 nm

Ni-NTA surface density: 1/nm²

Buffer: DI Water

Form: Suspension

Supplied in H₂O

Advantages

Monodisperse

Well defined sizes from 5 nm to 100 nm

Precisely engineered surface with an optimized Ni-NTA 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, 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-Ni-NTA 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

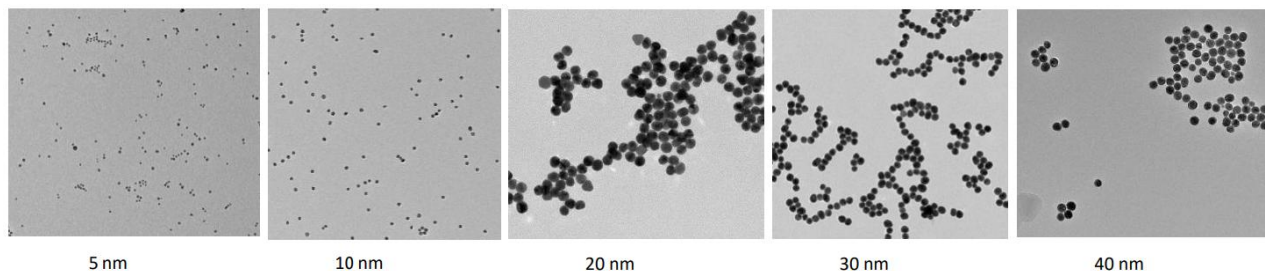
Diameter	Peak SPR Wavelength	Optical density	Wt. conc	Size Dispersity %PDI	Particles/ml	Molarity mol/ml
5 nm	515-520 nm	OD 50	2.5 mg/ml	< 20%	1.98E+15	3.28E-09
10 nm	520 nm	OD 50	2.5 mg/ml	< 15%	2.47E+14	4.10E-10
20 nm	524 nm	OD 50	2.5 mg/ml	< 10%	3.09E+13	5.13E-11
30 nm	526 nm	OD 50	2.5 mg/ml	< 6%	9.15E+12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