

## NITgold Cit 12nm

#510004 & #510005

**STORE AT 4°C away from light. DO NOT FREEZE**

### Description

The 12nm gold nanoparticles are uniform quasi-spherical gold nanoparticles with a mean diameter of twelve capped with citrate. These nanoparticles present unique physico-chemical properties (i.e. optical, catalytic, electrochemical activity, etc.). Citrate gold nanoparticles are excellent candidates to be functionalized since a wide range of molecules can be tethered onto the AuNP surface by means of a thiol (SH) group displacing adsorbed citrate anions. Once functionalized, they can be employed as platforms for many applications such as target-specific drug delivery, sensors, lateral flow tests, imaging probes for dark-field microscopy, flow cytometry, cancer photothermal therapy, catalysis, and optoelectronic. They can be also conjugated with distinct molecules and/or other micro/nanostructures to generate new biosensors, therapeutics, etc. The optical and electronic properties of gold nanoparticles are tuneable by changing their size, shape, surface chemistry or even their aggregation state.

### Technical Specifications

**Particle Surface:** Citrate capping

**Peak SPR wavelength:** 517 nm

**Average Diameter:**<sup>1</sup> 12.0 ± 3.0 nm

**Hydrodynamic Diameter (DLS):** 11.9 ± 0.9 nm

**Molar Concentration:**<sup>2</sup> 5.8 nM

**O.D.:** 1

**Particle Concentration:** 3.5×10<sup>12</sup> particles/mL

**Z-Potential:** -21.1 mV

**Solvent:** Milli-Q Water

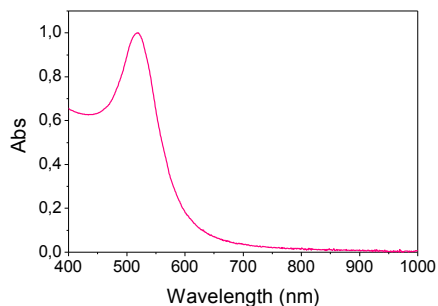
**pH of Solution:** 5.0

<sup>1</sup> Particle diameter determined by Surface Plasmon Resonance from the spectrum. Haiss et al. Anal. Chem. 2007, 79, 4215-4221.

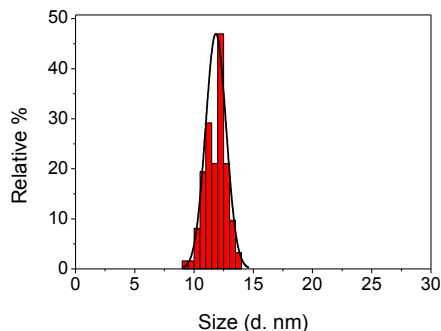
<sup>2</sup> Determined according to a  $\epsilon = 1.74 \times 10^9 \text{ M}^{-1} \cdot \text{cm}^{-1}$ . Werts et al. Analyst 2013, 138, 583-592.



### UV/visible absorbance spectrum



### Size Distribution (DLS)



### Suggested Application(s)

- Biosensing
- Catalysis
- Drug delivery
- Colorimetric probes
- Lateral flow immunoassays

### Ordering Information

Product Name	Nº Nanoparticles/mL	O.D.	$\epsilon$ (M <sup>-1</sup> cm <sup>-1</sup> )	Quantity	Catalogue No.
NITgold Cit 12nm	3,52E+12	10D	1,71E+08	25mL	51000417V
NITgold Cit 12nm	3,52E+12	10D	1,71E+08	100mL	510004160
NITgold Cit 12nm	3,52E+12	10D	1,71E+08	250mL	51000416C
NITgold Cit 12nm	3,52E+12	10D	1,71E+08	500mL	51000416F
NITgold Cit 12nm	1,06E+13	30D	1,71E+08	25mL	51000517V
NITgold Cit 12nm	1,06E+13	30D	1,71E+08	100mL	510005160
NITgold Cit 12nm	1,06E+13	30D	1,71E+08	250mL	51000516C

### Product disclaimer

This nitparticles® product is to be used for research purposes only. Unless stated in the documentation of on an individual product label, catalog or other information provided to the buyer, IT IS FORBIDDEN TO USE IT for different purposes, including but not limited to them: in vitro diagnostic, use in food, pharmaceutical purposes, medical purposes, or use in cosmetic products, neither for use in humans nor animals, nor for any commercial purposes. Please refer to [www.nitparticles.com](http://www.nitparticles.com) for the Material Safety Data Sheet of the product.

