



GOLD nanoparticles

have many applications in biology and medicine due to their unique optical and physical properties.

These versatile reagents can be used for biosensor development, as cellular probes, as drug delivery vehicles, or as optical contrast agents among others.

Cytodiagnostics' spherical and non-spherical gold nanoparticle products are made with proprietary protocols resulting in particles with uniform shapes and a narrow size distributions.

APPLICATIONS

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|--|-----------------------------|
| • Conjugate Development | • Nanotoxicology |
| • Plasmonic Sensor Development | • Lateral and Vertical Flow |
| • Molecular Imaging | • Cellular Uptake |
| • Surface Enhanced Raman Spectroscopy (SERS) | • Immunoblotting |
| • Dark Field Microscopy | • ELISA |

PROPERTIES

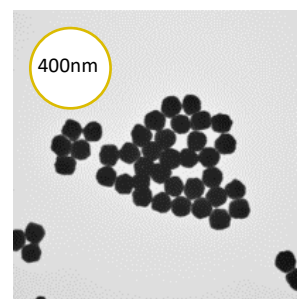
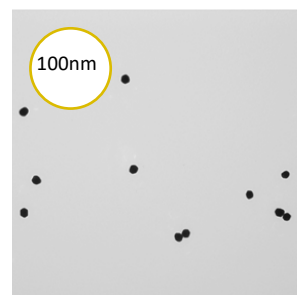
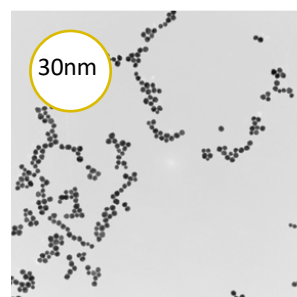
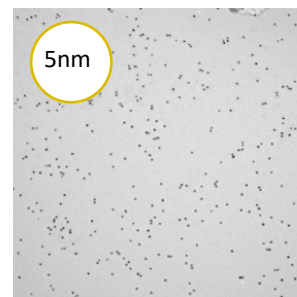
- Monodisperse, uniform shape, narrow size distribution
- Well defined sizes from 5nm to 400nm
- Precisely engineered & functionalized surfaces
- Extensive range of surface functionalities designed for *in vitro* and *in vivo* applications
- Comprehensive technical reference library and experienced technical support

PRODUCTS

- | | |
|--|--|
| • Endotoxin Free Gold Nanoparticles | • OligoREADY™ and AptamerREADY™ Gold Nanoparticles |
| • Reactant Free Gold Nanoparticles | • Gold NanoUrchins |
| • Stabilized Gold Nanoparticles | • Gold NanoRods |
| • Antibody and Streptavidin Gold Conjugates | • Gold and Silver Staining Kits |
| • NHS and Maleimide Activated Gold Nanoparticles | • Passive Adsorption and Covalent Conjugation Kits |
| • Carboxy, Amine, NTA, Azide, Alkyne, DBCO and Biotinylated Gold Nanoparticles | • Custom Conjugation Service |

RELATED PRODUCTS

- | | |
|--|---------------------------------|
| • Silver Nanoparticles | • Fluorescent Nanocrystals |
| • Universal Lateral Flow Development Kit | • Iron Oxide Magnetic Particles |





Choose **GOLD nanoparticle** products based on application

Application	Range	Surface Chemistry	Benefits
Protein Conjugation	5nm-100nm	Standard (citrate)	Quick
		NTA	Binding of Histidine Tagged Proteins.
		NHS	Covalent conjugation to primary amines, increased stability, less non-specific protein binding.
		Maleimide	Covalent conjugation to thiol groups, increased stability, less non-specific protein binding.
		Carboxyl, Amine	Covalent conjugation, increased stability, less non-specific protein binding.
		Azide, Alkyne, DBCO	Conjugation of ligands using Click Chemistry.
		Streptavidin, Biotin	Can be used with any biotinylated or streptavidin ligand, ideal for high-throughput screenings.
Modification with thiolated ligands (PEG-SH etc.)	5nm-100nm	Standard (citrate)	Classic starting material, no additional stabilizers added.
		Stabilized (surfactant)	Increased stability during functionalization but reduced kinetics.
Oligonucleotide Conjugation Aptamer Conjugation	5nm-15nm	Standard (citrate)	Ideal for conjugation of thiolated oligonucleotides to small particle sizes.
	5nm-100nm	OligoREADY™, AptamerREADY™	Ideal for conjugation of thiol modified oligos to particles between 5nm-100nm in diameter.
	5nm-100nm	Maleimide	Ideal for covalent conjugation of thiol modified oligos to particles between 5nm-100nm in diameter.
	5nm-100nm	NHS	For covalent conjugation of amine functionalized oligonucleotides. Ideal when a linker is required between the gold surface and conjugated oligonucleotide.
Immuno-dot blot/Western blot	5nm-20nm	Protein conjugated gold nanoparticles (antibodies, streptavidin etc)	Colorimetric straightforward detection (no equipment required). Generates a permanent label.
Immunohistochemistry (TEM)	5nm-40nm	Protein conjugated gold nanoparticles (antibodies, streptavidin etc)	High contrast label.
Flow Cytometry	50nm-400nm	Gold Size Standards	Ideal for standardization of results between runs and experiments when analyzing particles in the 50nm-400nm range.
Cellular Uptake	30nm-60nm	Transferrin gold conjugate	Active uptake through endocytosis.
		Standard (citrate)	Non-specific cellular uptake.
		Cationic gold (available upon request)	High efficiency non-specific cellular uptake.
Darkfield Microscopy	50nm-100nm	Gold conjugates	
Lateral Flow/Dip-Stick Assays	30nm-80nm	Standard (citrate)	Allows for development of rapid testing kit, point of care assays.
		NHS, Maleimide	
		Carboxyl, Amine	
		Azide, Alkyne, DBCO	
		Streptavidin	
		Protein A	
		Protein G	
Tumor Targeting	30nm-80nm	Methoxy-PEG	Allows for passive targeting of certain tumors <i>in vivo</i> . Inert material with low non-specific protein binding in serum.
Light Microscopy	5nm-10nm	Gold secondary antibody conjugates	Ability to label tissue sections for both light and electron microscopy. Alternative to peroxidase and PAP based stains. Sensitivity can be enhanced with silver enhancement techniques.
ELISA	5nm-30nm	Gold antibody conjugates	Straightforward colorimetric detection.