

# Gold Nanoparticles Selection Guide

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## 1 Protein Conjugation

Diameter: 5 nm-100 nm

### 1.1 Surface: Citrate

Advantage: Quick.

### 1.2 Surface: NHS

Advantage: Covalent conjugation to primary amines, increased conjugate stability, less non-specific protein binding.

### 1.3 Surface: Maleimide

Advantage: Covalent conjugation to thiols, increased conjugate stability, less non-specific protein binding.

### 1.4 Surface: Carboxyl

Advantage: Covalent conjugation to primary amines, increased conjugate stability, less non-specific protein binding.

### 1.5 Surface: Amine

Advantage: Conjugation of NHS and carboxyl ligands.

### 1.6 Surface: Streptavidin

Advantage: Conjugation to biotinylated ligands.

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## 2 Modification with thiolated ligands

Diameter: 5 nm-100 nm

### 2.1 Surface: Citrate

Advantage: Classic starting material, no additional stabilizers added.

## 3 Oligonucleotide Conjugation

Diameter: 5 nm-20 nm, 5 nm-100 nm

### 3.1 Surface: Citrate

Advantage: Ideal for conjugation of thiol-modified oligos to small particle sizes (5 nm-20 nm). Does not work well for larger particles.

### 3.2 Surface: OligoREADY

Advantage: Ideal for conjugation of thiol-modified oligos directly to the gold surface.

### 3.3 Surface: NHS

Advantage: Ideal for covalent conjugation of amine-modified oligos. Final conjugate will have a PEG-linker between oligo and gold surface.

### 3.4 Surface: Maleimide

Advantage: Ideal for covalent conjugation of thiol-modified oligos. Final conjugate will have a PEG-linker between oligo and gold surface.

## 4 Immunoblotting/Western Blot

Diameter: 5 nm-20 nm

#### **4.1 Surface: Secondary Antibody Gold Conjugates**

Advantage: Colorimetric detection. Permanent label.

### **5 Immunohistochemistry**

Diameter: 5 nm-40 nm

#### **5.1 Surface: Secondary Antibody Gold Conjugates**

Advantage: High contrast label.

### **6 Flow Cytometry**

Diameter: 70 nm-400 nm

### **7 Cellular Uptake**

Diameter: 30 nm-80 nm

#### **7.1 Surface: Transferrin Gold Conjugates**

Advantage: Active uptake through endocytosis.

#### **7.2 Surface: CitrateCitrate**

Advantage: Non-specific cellular uptake.

### **8 Darkfield Microscopy**

Diameter: 50 nm-100 nm

### 8.1 Surface: Gold Conjugates

## 9 Lateral Flow/Dip-Stick Assays

Diameter: 20 nm-80 nm

### 9.1 Surface: Citrate

Advantage: Ideal for generation of gold conjugates through passive adsorption of antibodies to the gold nanoparticle surface.

### 9.2 Surface: NHS

Advantage: Ideal for covalent conjugation of antibodies to gold nanoparticles.

### 9.3 Surface: Maleimide

Advantage: Ideal for conjugation of thiol-modified ligands to gold nanoparticles.

### 9.4 Surface: Gold Conjugates

Advantage: Pre-made secondary antibody conjugates.

## 10 Vertical Flow

Diameter: 20 nm-40 nm

### 10.1 Surface: Citrate

Advantage: Ideal for generation of gold conjugates through passive adsorption of antibodies to the gold nanoparticle surface.

### 10.2 Surface: NHS

Advantage: Ideal for covalent conjugation of antibodies to gold nanoparticles.

### **10.3 Surface: Maleimide**

Advantage: Ideal for conjugation of thiol-modified ligands to gold nanoparticles.

### **10.4 Surface: Gold Conjugates**

Advantage: Pre-made secondary antibody conjugates.

## **11 Tumor Targeting**

Diameter: 20 nm-80 nm

### **11.1 Surface: Methyl Gold Nanoparticles**

Advantage: Can in some cases be used for passive targeting of certain tumors in vivo. Inert material with low non-specific protein binding in serum.

## **12 Light Microscopy**

Diameter: 5 nm-10 nm

### **12.1 Surface: Gold Conjugates**

Advantage: 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.

## **13 ELISA**

Diameter: 5 nm-30 nm

### **13.1 Surface: Gold Conjugates**

Advantage: Colorimetric Detection.

## Ordering and Inquiring

You can place an order or Inquire through the following methods, and we will contact you within 1 hour:

**QQ 499854788**

**Email [biotyscience@163.com](mailto:biotyscience@163.com)**

**Tel 136 8125 6816**