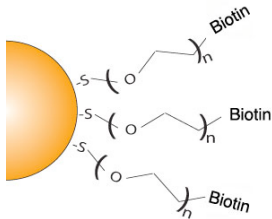


PRODUCT DATA SHEET

Biotin Gold Nanoparticles



Description

Cytodiagnosics biotin functionalized gold nanoparticles are suitable for binding of streptavidin labeled conjugates. The gold nanoparticle label allows for straightforward detection of streptavidin by measuring the increase in absorbance of the sample upon binding. The absorption maximum is gold nanoparticle size dependent, and ranges from around 520nm for a 5nm particle to 570nm for a 100nm particle.

Our Biotin gold nanoparticles are available in 12 different sizes ranging from 5 -100nm, are more than 95% spherical and have uniform size distribution (CV <12%).

For custom sizes, formulations or bulk quantities please contact our customer service department.

Features

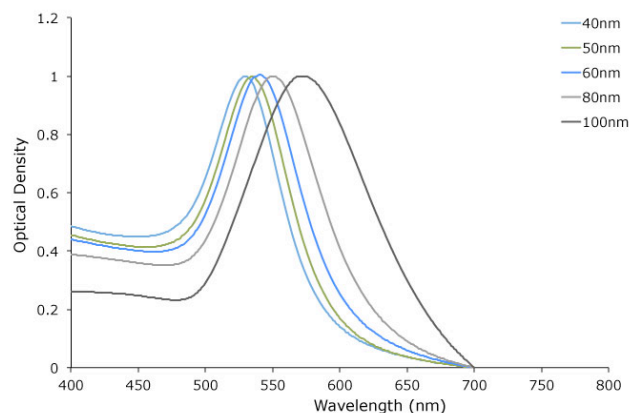
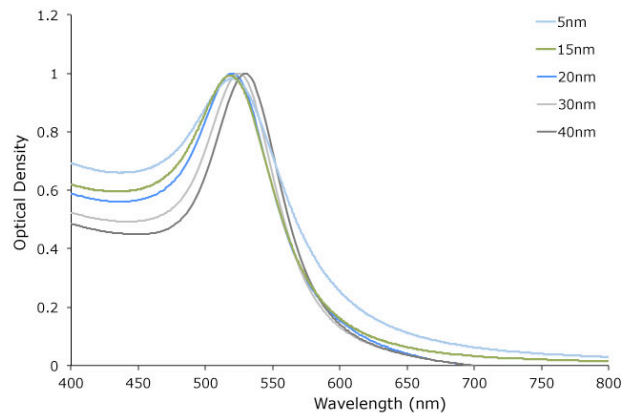
- Superior size distribution compared to the leading competitor; available from 5nm to 100nm.
- Precisely engineered surface with an optimized biotin group density for easy conjugation.

Applications

- Ideal for development of gold conjugates for use in applications such as blotting, lateral flow assays, LSPR assays, light microscopy, and transmission electron microscopy (TEM) among others.

Characteristics

Core diameter: 5 -100nm (Coefficient of Variance < 12%)
 Polydispersity Index (PDI): < 0.150
 Amount: OD=50
 Absorbance (λ_{max}): 510-570nm
 Nr of biotin groups on surface: $\sim 0.5/nm^2$
 Supplied in USP Grade H₂O



Storage

This product should be stored at 4°C. Do not freeze. If stored as specified, Cytodiagnosics Biotin Gold Nanoparticles 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 true for larger particle sizes. Prior to use, re-suspend the sedimented particles by swirling until a homogenous solution is obtained.

Precautions and Disclaimer

These products are for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet available online at www.cytodiagnosics.com for information regarding hazards and safe handling procedures.



Diameter (nm)	Peak SPR Wavelength (nm)	NPS/ml	Wt. Conc. (mg/ml)	Molar Ext ($M^{-1}cm^{-1}$)	Size Dispersity (+/-nm)	Particle Volume (nm^3)	Surface Area (nm^2)	Surface/Volume Ratio	Particle Mass (g)	Molar Mass (g/mol)	Molar Conc.
5	515-520	2.74E+15	3.47	1.10E+07	<15%	6.54E+01	7.85E+01	1.2	1.27E-18	7.64E+05	4.54E-06
10	515-520	2.99E+14	3.04	1.01E+08	<15%	5.24E+02	3.14E+02	0.6	1.02E-17	6.11E+06	4.97E-07
15	520	8.20E+13	2.81	3.67E+08	<12%	1.77E+03	7.07E+02	0.4	3.43E-17	2.06E+07	1.36E-07
20	524	3.27E+13	2.66	9.21E+08	<12%	4.19E+03	1.26E+03	0.3	8.12E-17	4.89E+07	5.45E-08
30	526	8.95E+12	2.46	3.36E+09	<12%	1.41E+04	2.83E+03	0.2	2.74E-16	1.65E+08	1.49E-08
40	530	3.58E+12	2.33	8.42E+09	<12%	3.35E+04	5.03E+03	0.15	6.50E-16	3.91E+08	5.95E-09
50	535	1.76E+12	2.23	1.72E+10	<10%	6.54E+04	7.85E+03	0.12	1.27E-15	7.64E+08	2.92E-09
60	540	9.80E+11	2.15	3.07E+10	<10%	1.13E+05	1.13E+04	0.1	2.19E-15	1.32E+09	1.63E-09
70	548	6.00E+11	2.09	5.03E+10	<10%	1.80E+05	1.54E+04	0.086	3.48E-15	2.10E+09	9.95E-10
80	553	3.91E+11	2.03	7.70E+10	<10%	2.68E+05	2.01E+04	0.075	5.20E-15	3.13E+09	6.50E-10
90	564	2.69E+11	1.99	1.12E+11	<8%	3.82E+05	2.54E+04	0.067	7.40E-15	4.46E+09	4.46E-10
100	572	1.92E+11	1.95	1.57E+11	<8%	5.24E+05	3.14E+04	0.06	1.02E-14	6.11E+09	3.19E-10

Catalog Number	Description	Lambda max (nm)	Sizes
CGB5K-5-X*	5nm Biotin Gold Nanoparticles (5000Da PEG)	515-520	0.5ml, 1.0ml (50 OD)
CGB5K-10- X*	10nm Biotin Gold Nanoparticles (5000Da PEG)	515-520	0.5ml, 1.0ml (50 OD)
CGB5K-15- X*	15nm Biotin Gold Nanoparticles (5000Da PEG)	520	0.5ml, 1.0ml (50 OD)
CGB5K-20- X*	20nm Biotin Gold Nanoparticles (5,000Da PEG)	524	0.5ml, 1.0ml (50 OD)
CGB5K-30- X*	30nm Biotin Gold Nanoparticles (10,000Da PEG)	526	0.5ml, 1.0ml (50 OD)
CGB5K-40- X*	40nm Biotin Gold Nanoparticles (10,000Da PEG)	530	0.5ml, 1.0ml (50 OD)
CGB5K-50- X*	50nm Biotin Gold Nanoparticles (10,000Da PEG)	535	0.5ml, 1.0ml (50 OD)
CGB5K-60- X*	60nm Biotin Gold Nanoparticles (10,000Da PEG)	540	0.5ml, 1.0ml (50 OD)
CGB5K-70- X*	70nm Biotin Gold Nanoparticles (10,000Da PEG)	548	0.5ml, 1.0ml (50 OD)
CGB5K-80- X*	80nm Biotin Gold Nanoparticles (10,000Da PEG)	553	0.5ml, 1.0ml (50 OD)
CGB5K-90- X*	90nm Biotin Gold Nanoparticles (10,000Da PEG)	564	0.5ml, 1.0ml (50 OD)
CGB5K-100- X*	100nm Biotin Gold Nanoparticles (10,000Da PEG)	572	0.5ml, 1.0ml (50 OD)

Note: X* is either -25 for the 0.5ml format, or -50 for the 1.0ml format.

For custom sizes (up to 400nm available), bulk quantities, and custom gold nanoparticle surface chemistry, please order online at www.cytodiagnosics.com under custom synthesis or contact our customer service department.

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