NanoHYBRIDS
ADVANCED IMAGING SOLUTIONS

Gold NanoRods

Sample Tech Spec Sheets

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MADE BY RESEARCHERS FOR RESEARCHERS

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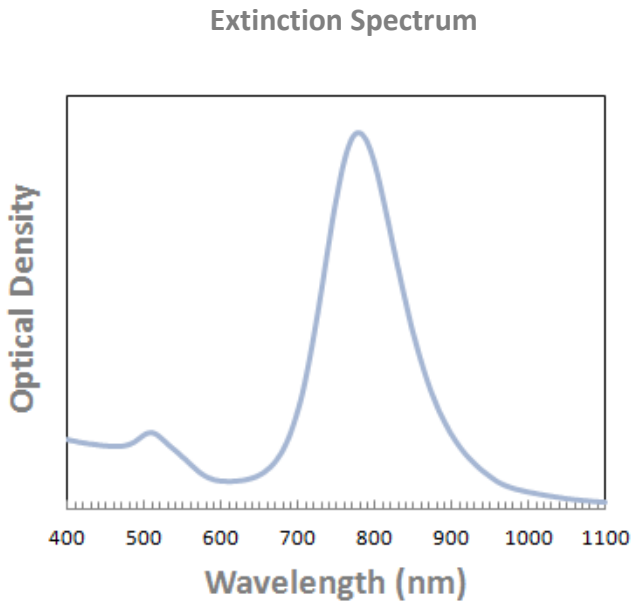
Gold NanoRods

Gold NanoRods, CTAB coating, LSPR 780 nm

	Product Specs	Lot-specific
LSPR peak	770 - 790 nm	782 nm
NanoRod Diameter	9.5 – 11.5 nm	11.2 ± 1.3 nm
NanoRod Length	35 – 45 nm	42.6 ± 4.1 nm
Aspect Ratio	3.7 – 3.9	3.8
LSPR/TSPR Ratio	> 3.8	4.1
LSPR Width at 80% Max	< 75 nm	71 nm
Particle concentration (per mL) for OD = 1	7.8 – 8.2 x 10^{11}	8.0 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.05
Particle Molar Concentration for OD = 1	1.2 – 1.4 x 10^{-9}	1.32 x 10^{-9}
Zeta potential	+20 ± 5 mV	+30.1 mV
pH	5 – 7	6.8
Solvent	1 mM CTAB in DIUF Water	



CTAB = Cetyltrimethylammonium bromide

LSPR = Longitudinal Surface Plasmon Resonance, TSPR = Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 780 nm
CTAB	OD = 1	10 mL	28645-L010ML

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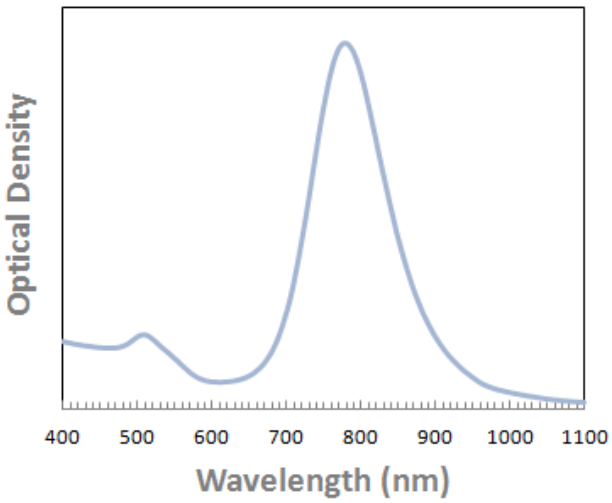
ADVANCED IMAGING SOLUTIONS

Gold NanoRods

Gold NanoRods, PEG coating, LSPR 780 nm

	Product Specs	Lot-specific
LSPR peak	770 - 790 nm	776 nm
NanoRod Diameter	9.5 – 11.5 nm	10.3 ± 1.7 nm
NanoRod Length	35 – 45 nm	38.1 ± 2.1 nm
Aspect Ratio	3.7 – 3.9	3.7
LSPR/TSPR Ratio	> 3.7	4.1
LSPR Width at 80% Max	< 75 nm	67 nm
Particle concentration (per mL) for OD = 1	7.8 – 8.2 x 10^{11}	7.9 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.049
Particle Molar Concentration for OD = 1	1.2 – 1.4 x 10^{-9}	1.32 x 10^{-9}
Zeta potential	5 ± 5 mV	1.2 mV
pH	6 – 8	7.4
Particle surface	PEG	
Solvent	DIUF Water	

Extinction Spectrum



PEG = Polyethylene glycol (5 kDa)

LSPR = Longitudinal Surface Plasmon Resonance, TSPR = Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 780 nm
PEG	OD = 1	10 mL	78124-L010ML
		2.5 mL	78124-L2.5ML
	OD = 100	1 mL	78124-H001ML
		250 µL	78124-H250UL

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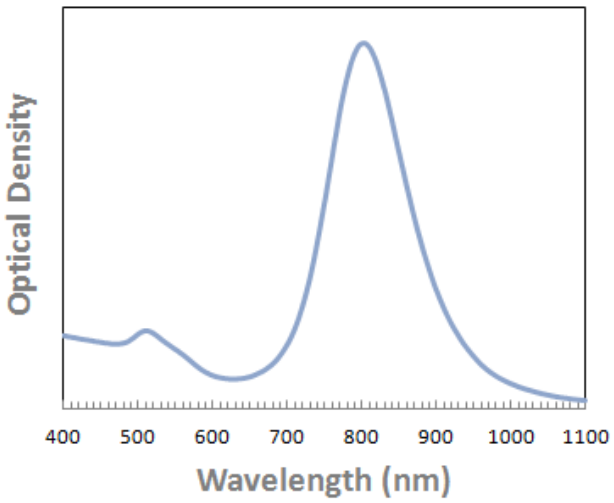
Gold NanoRods

Gold NanoRods, CTAB coating, LSPR 808 nm

	Product Specs	Lot-specific
LSPR peak	798 - 818 nm	812 nm
NanoRod Diameter	9.5 – 11.5 nm	10.8 ± 1.2 nm
NanoRod Length	38 – 48 nm	44.3 ± 1.9 nm
Aspect Ratio	4.0 – 4.3	4.3
LSPR/TSPR Ratio	> 3.8	4.1
LSPR Width at 80% Max	< 80 nm	69 nm
Particle concentration (per mL) for OD = 1	7.0 – 7.5 x 10^{11}	7.24 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.045
Particle Molar Concentration for OD = 1	1.1 – 1.3 x 10^{-9}	1.20 x 10^{-9}
Zeta potential	+20 ± 5 mV	+23 mV
pH	5 – 7	6.2
Solvent	1 mM CTAB in DIUF Water	

Extinction Spectrum



CTAB = Cetyltrimethylammonium bromide

LSPR = Longitudinal Surface Plasmon Resonance, TSPR = Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 808 nm
CTAB	OD = 1	10 mL	34070-L010ML

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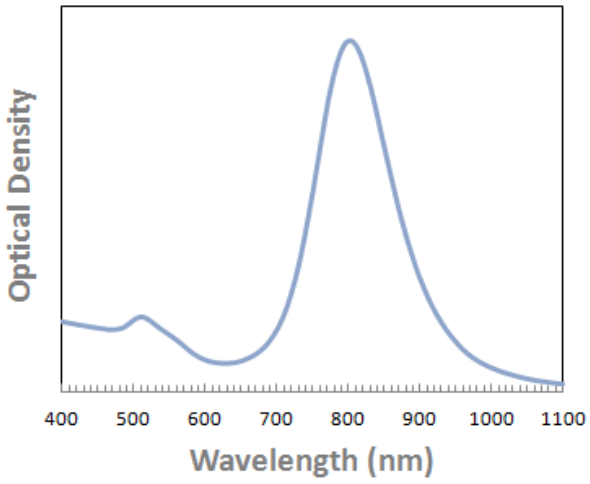
Gold NanoRods

Gold NanoRods, PEG coating, LSPR 808 nm

	Product Specs	Lot-specific
LSPR peak	798 - 818 nm	798 nm
NanoRod Diameter	9.5 – 11.5 nm	10.3 ± 1.1 nm
NanoRod Length	38 – 48 nm	42.2 ± 2.2 nm
Aspect Ratio	4.0 – 4.3	4.1
LSPR/TSPR Ratio	> 3.7	3.9
LSPR Width at 80% Max	< 80 nm	68 nm
Particle concentration (per mL) for OD = 1	7.0 – 7.5 x 10^{11}	7.24 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.049
Particle Molar Concentration for OD = 1	1.1 – 1.3 x 10^{-9}	1.20 x 10^{-9}
Zeta potential	5 ± 5 mV	3 mV
pH	6 – 8	7.1
Particle surface	PEG	
Solvent	DIUF Water	

Extinction Spectrum



PEG = Polyethylene glycol (5 kDa)

LSPR = Longitudinal Surface Plasmon Resonance, TSPR = Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 808 nm
PEG	OD = 1	10 mL	68630-L010ML
		2.5 mL	68630-L2.5ML
	OD = 100	1 mL	68630-H001ML
		250 µL	68630-H250UL

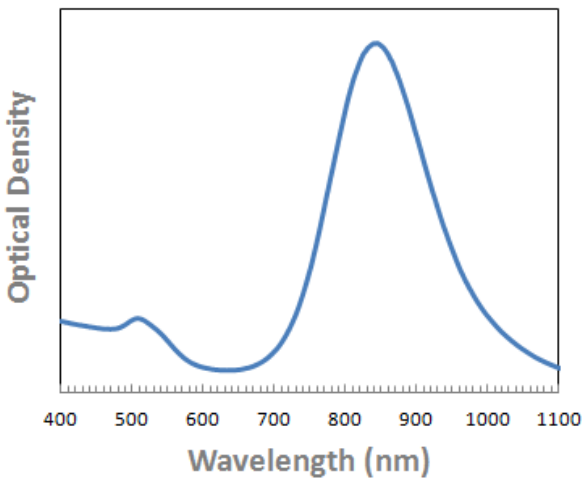
NANOHYBRIDS
ADVANCED IMAGING SOLUTIONS

Gold NanoRods

Gold NanoRods, CTAB coating, LSPR 850 nm

	Product Specs	Lot-specific
LSPR peak	840 - 860 nm	853 nm
NanoRod Diameter	9.5 – 11.5 nm	10.4 ± 1.2 nm
NanoRod Length	42 – 52 nm	46.8 ± 2.3 nm
Aspect Ratio	4.4 – 4.7	4.5
LSPR/TSPR Ratio	> 3.8	4.0
LSPR Width at 80% Max	< 95 nm	86 nm
Particle concentration (per mL) for OD = 1	6.2 – 6.7 x 10^{11}	6.40 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.049
Particle Molar Concentration for OD = 1	0.9 – 1.2 x 10^{-9}	1.06 x 10^{-9}
Zeta potential	+20 ± 5 mV	26 mV
pH	5 – 7	6.32
Solvent	1 mM CTAB in DIUF Water	

Extinction Spectrum



CTAB = Cetyltrimethylammonium bromide

LSPR = Longitudinal Surface Plasmon Resonance, TSPR = Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 850 nm
CTAB	OD = 1	10 mL	75871-L010ML

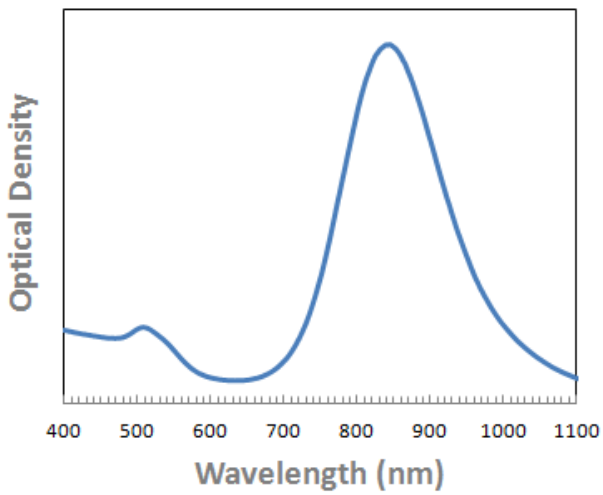
NANOHYBRIDS
ADVANCED IMAGING SOLUTIONS

Gold NanoRods

Gold NanoRods, PEG coating, LSPR 850 nm

	Product Specs	Lot-specific
LSPR peak	840 - 860 nm	849 nm
NanoRod Diameter	9.5 – 11.5 nm	10.3 ± 1.3 nm
NanoRod Length	42 – 52 nm	45.2 ± 2.2 nm
Aspect Ratio	4.4 – 4.7	4.4
LSPR/TSPR Ratio	> 3.7	4.1
LSPR Width at 80% Max	< 95 nm	83 nm
Particle concentration (per mL) for OD = 1	6.2 – 6.7 x 10^{11}	6.4 x 10^{11}
Mass concentration (Au) mg/mL for OD = 1	0.04 – 0.05	0.047
Particle Molar Concentration for OD = 1	0.9 – 1.2 x 10^{-9}	1.06 x 10^{-9}
Zeta potential	5 ± 5 mV	3 mV
pH	6 – 8	7.6
Particle surface	PEG	
Solvent	DIUF Water	

Extinction Spectrum



PEG = Polyethylene glycol (5 kDa)

LSPR = Longitudinal Surface Plasmon Resonance, TSPR= Transverse Surface Plasmon Resonance

DIUF = Deionized and ultrafiltrated water (18.1 MΩ-cm)

OD = Optical Density (using a 1 cm path length cuvette)

Product Numbers

	OD	Volume	LSPR 850 nm
PEG	OD = 1	10 mL	90228-L010ML
		2.5 mL	90228-L2.5ML
	OD = 100	1 mL	90228-H001ML
		250 µL	90228-H250UL

Storage and Handling Procedures

Store at 2-8 °C away from light. Storage at low temperature increases shelf life and stability of the nanoparticles, preventing changes in shape and/or size. Short term exposure to light and room temperature is acceptable.

DO NOT FREEZE. Freezing will induce irreversible aggregation of particles and destroy the product.

Bring to room temperature and shake well before each use. Particles may settle to the bottom over time. Shake vigorously for 30 seconds to ensure particles are fully dispersed before use. Visually inspect to ensure all product has redispersed. If particulates or plating remain, sonicate for 15 seconds, shake, and repeat as necessary. Do not sonicate for periods longer than 15 seconds.

Quality Control. If there are visible particulates or a change in the color or intensity of the dispersion, the nanoparticles may have aggregated. Filter the solution using a $\leq$ 0.45 µm polyvinylidene fluoride filter and save the filtered product. Check quality with spectrophotometry and electron microscopy.