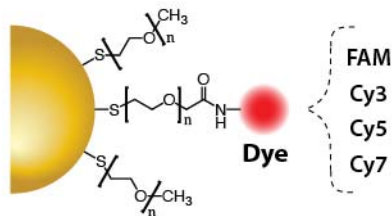


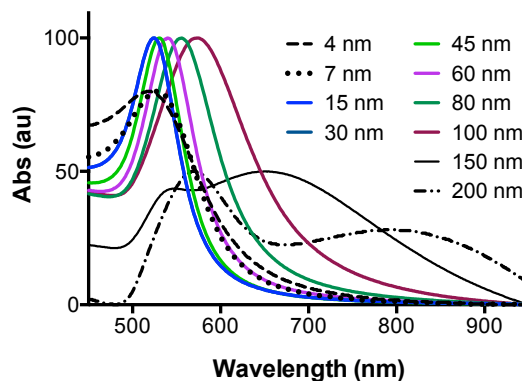
PRODUCT DATA SHEET

Gold Nanoparticles – Fluorescently Labeled



PEG Spacer = 5000, 10000 Da

Absorbance Spectra



Features

- A range of available sizes: 4 to 200 nm diameter.
- High monodispersity (PDI < 0.1) and circularity (> 0.9).
- 4 available dyes: FAM, Cy3, Cy5, Cy7.
- 5 kDa or 10 kDa PEG spacer.
- Stable in high salt conditions.

General Information

Gold nanoparticles are tagged with a fluorescence dye using polyethylene glycol (PEG) as a spacer. To prevent fluorophore quenching, longer PEG of 5 kDa or 10 kDa is used to ensure the separation between the dye and the nanoparticle surface.

Methoxy-terminated PEG is used as the backfill to stabilize the particles against charge-induced aggregation.

Applications

- Gold nanoparticle fluorescence tracking *in vitro* and *in vivo*
- Nanoparticle-cell interactions using flow cytometry analysis
- Fluorescence and side scatter flow cytometry standards

Specifications

Core Diameter: 4 nm – 200 nm

Polydispersity Index (PDI): < 0.1

Absorbance peak: 520 – 850 nm

Methoxy-to-fluorescent PEG ratio: 6-to-4

Shelf life: > 1 year (4°C storage)

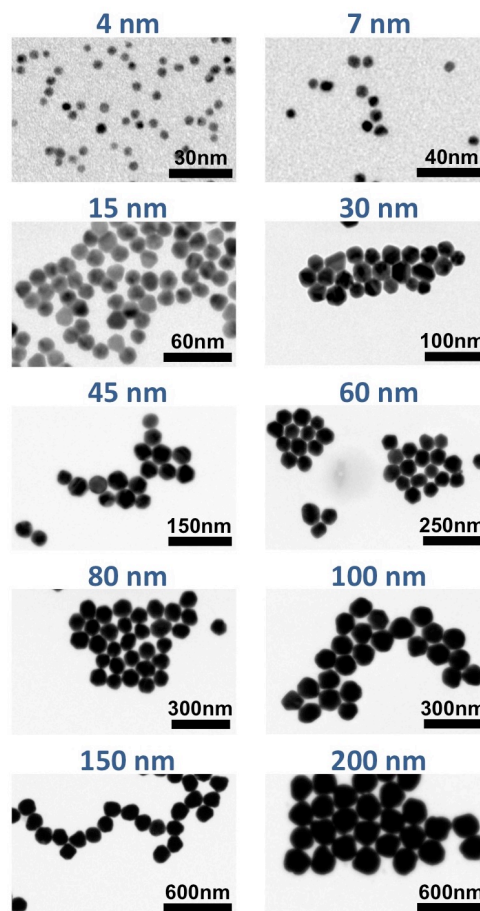
Supplied as liquid suspension in PBS or in water with 0.05% (w/v) Tween-20

Storage and Handling

For long-term storage (>1 month), store the product at 4°C. For shorter periods (<1 week) product can be stored at room temperature. **DO NOT FREEZE**: freezing will cause nanoparticles to aggregate.

Vortex briefly prior to use to resuspend nanoparticles.

Electron Microscopy



This product is for R&D uses only. MSDS documentation is available at www.lunanano.com

Physicochemical properties

Diameter (nm)	Size Dispersity (+/- nm)	Peak SPR Wavelength (nm)	OD	Molar Extinction ($M^{-1} cm^{-1}$)	Conc. (M)	Surface Area (nm^2)	Particle Volume (nm^3)	Atoms / Particle	MW (g/mol)	Weight Conc. (mg/mL)	Particles per mL (#)
4	0.8	518	50	2.15E+06	2.33E-05	5.03E+01	3.35E+01	1.99E+03	3.91E+05	9.10	1.40E+16
7	1.2	528	50	1.10E+07	4.55E-06	1.54E+02	1.80E+02	1.06E+04	2.10E+06	9.53	2.74E+15
15	2.5	520	50	3.67E+08	1.36E-07	7.07E+02	1.77E+03	1.05E+05	2.06E+07	2.81	8.20E+13
30	4.7	525	50	3.36E+09	1.49E-08	2.83E+03	1.41E+04	8.38E+05	1.65E+08	2.46	8.96E+12
45	5.8	530	50	1.23E+10	4.07E-09	6.36E+03	4.77E+04	2.83E+06	5.57E+08	2.26	2.45E+12
60	6.5	540	50	3.07E+10	1.63E-09	1.13E+04	1.13E+05	6.70E+06	1.32E+09	2.15	9.80E+11
80	7.2	555	50	7.70E+10	6.49E-10	2.01E+04	2.68E+05	1.59E+07	3.13E+09	2.03	3.91E+11
100	8.5	574	50	1.57E+11	3.18E-10	3.14E+04	5.24E+05	3.10E+07	6.11E+09	1.95	1.92E+11
150	11	550 / 665	50	2.48E+11	2.02E-10	7.07E+04	1.77E+06	1.05E+08	2.06E+10	4.16	1.21E+11
200	18	575 / 790	50	4.35E+11	1.15E-10	1.26E+05	4.19E+06	2.48E+08	4.89E+10	5.62	6.92E+10

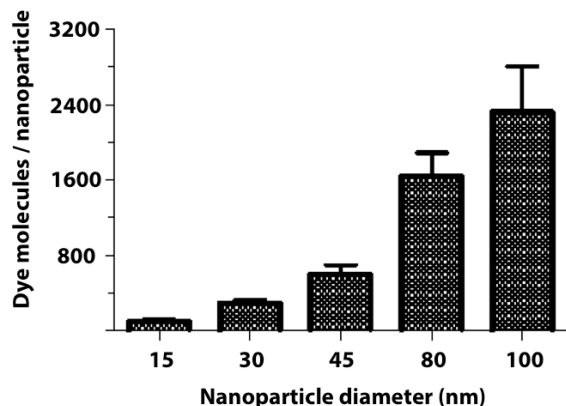


Figure 1: Estimated number of dye molecules per nanoparticle for selected nanoparticle sizes with 5 kDa PEG spacer.

Ordering Information

- Order through our website at www.lunanano.com, by calling 1-800-474-4055, or by e-mail at sales@lunanano.com.
- Please contact us for custom quantities, nanoparticle sizes, or surface modifications.
- More information is available at www.lunanano.com.

Catalog Number	Product Description	Dye Label	PEG	Conc.	Scale
GNP-DYE-4-X-Y-D	4 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-7-X-Y-D	7 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-15-X-Y-D	15 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-30-X-Y-D	30 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-45-X-Y-D	45 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-60-X-Y-D	60 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-80-X-Y-D	80 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-100-X-Y-D	100 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-150-X-Y-D	150 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL
GNP-DYE-200-X-Y-D	200 nm Fluorescently Labeled Gold Nanoparticles	FAM, Cy3, Cy5, Cy7	5 kDa, 10 kDa	50 OD	0.4 mL, 1 mL, 3 mL

X = '5' – 5 kDa, '10' – 10 kDa PEG spacer

Y = '04' – 0.4 mL, '1' – 1 mL, '3' – 3 mL scale

D = 'F' – FAM, 'C3' – Cy3, 'C5' – Cy5, 'C7' – Cy7 dye