Luna Nanotech

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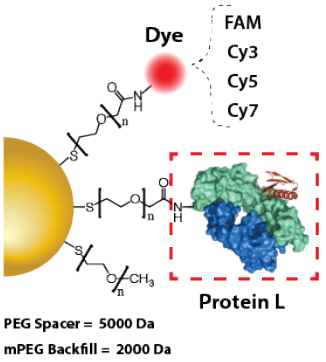
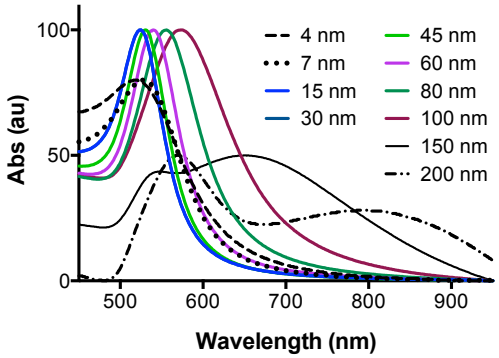
PRODUCT DATA SHEET

Gold Nanoparticles – Protein L



Absorbance Spectra



Features

- Surface functionalized with Protein L, which binds all classes of Ig containing kappa light chains.
- Contains 4 Ig binding domains per protein.
- A range of available sizes: 4 to 200 nm diameter.
- High monodispersity (PDI < 0.2) and circularity (> 0.9).
- Can be labeled with a fluorescent dye: FAM, Cy3, Cy5, Cy7.

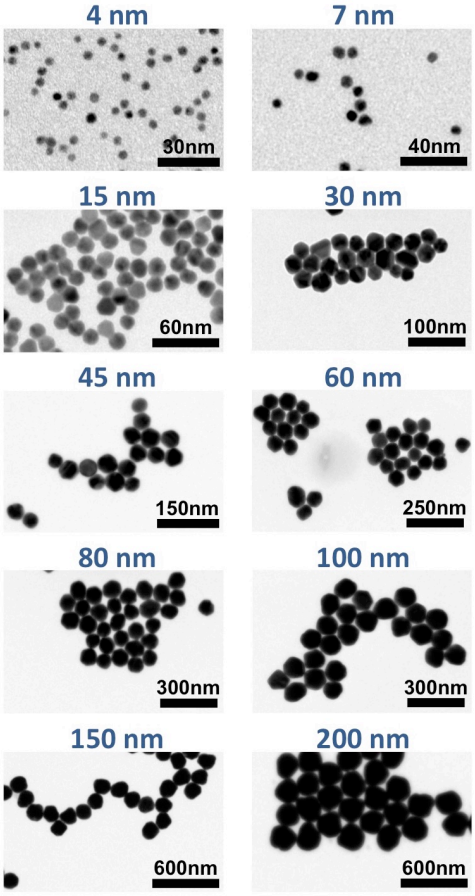
General Information

Polyethylene glycol (PEG) grafting introduces a terminal Protein L. Protein L strongly binds all classes of Ig (IgG, IgM, IgA, IgE and IgD) containing kappa light chains. Also binds kappa light chains in single chain variable fragments (scFv) and Fab fragments.

Gold nanoparticles can also be tagged with a fluorescence dye using polyethylene glycol (PEG) as a spacer. To prevent fluorophore quenching, longer PEG of 5 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 and to prevent non-specific protein adsorption.

Electron Microscopy



Applications

- Secondary antibody labels for ELISA, lateral flow, immunoblotting.
- Contrast agents for bright field, dark field, electron microscopy.
- Capturing of antibodies from solution.

Specifications

Core Diameter: 4 nm – 200 nm
Polydispersity Index (*PDI*): < 0.2
Absorbance peak: 520 – 800 nm
Shelf life: > 4 months (4°C storage)
Supplied as liquid suspension in PBS

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

Storage and Handling

Store the product at 4°C. **DO NOT FREEZE**: freezing will cause nanoparticles to aggregate.

Vortex briefly prior to use to resuspend nanoparticles.

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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

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	Conc.	Scale
GNP-PRL-4-*Y*-*D*	4 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-7-*Y*-*D*	7 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-15-*Y*-*D*	15 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-30-*Y*-*D*	30 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-45-*Y*-*D*	45 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-60-*Y*-*D*	60 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-80-*Y*-*D*	80 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-100-*Y*-*D*	100 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-150-*Y*-*D*	150 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL
GNP-PRL-200-*Y*-*D*	200 nm	Protein L-Coated Gold Nanoparticles	None, FAM, Cy3, Cy5, Cy7	10 OD	0.4 mL, 1 mL, 3 mL

Y = *'04' – 0.4 mL, '1' – 1 mL, '3' – 3 mL scale*
D = *'N' – no dye, 'F' – FAM, 'C3' – Cy3, 'C5' – Cy5, 'C7' – Cy7* dye