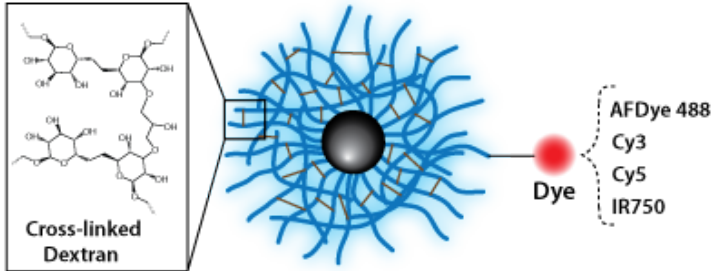


Magnetic CLIO Nanoparticles: Fluorescent Dye Labeled

PRODUCT DATA SHEET



Features

- Highly magnetic.
- Highly biocompatible, non-toxic.
- Long term stable under physiological conditions.
- 40 kDa and 70 kDa dextran coats are available.
- Dual-modality magnetic and fluorescence probes.

General Information

Fluorescence dye functionalized Dextran coated crosslinked iron oxide nanoparticles (CLIO-DYE) have 1-3 superparamagnetic Fe₃O₄ iron oxide cores (8-10 nm in diameter) imbedded within the matrix of dextran sugar strands of 40 kDa or 70 kDa size. Dextran strands are crosslinked to prevent their disassociation, ensuring long term stability. Fluorophores are covalently conjugated to the nanoparticle surface.

Applications

- Dual-modality probes for MRI and Fluorescence imaging.
- *In vitro* and *in vivo* labels for cells and tissues.
- Dual magnetic and fluorescence cell separation.

Specifications

- Iron Oxide Core Diameter: 8 – 10 nm
- Hydrodynamic Diameter: 60 – 80 nm
- Polydispersity Index (PDI): < 0.25
- Magnetization: 5 – 30 emu/g (room temperature)
- Shelf life: > 1 year (4°C storage)
- Supplied as liquid suspension in water

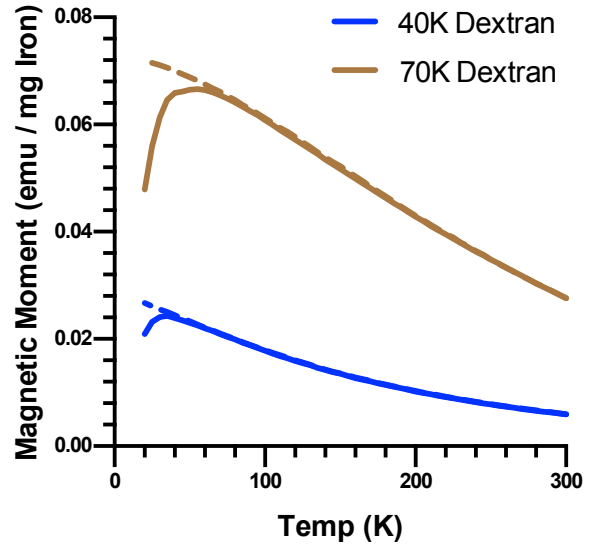
Storage and Handling

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

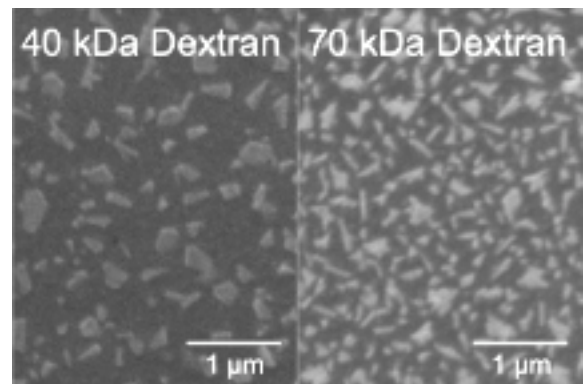
Vortex briefly prior to use to resuspend nanoparticles.

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

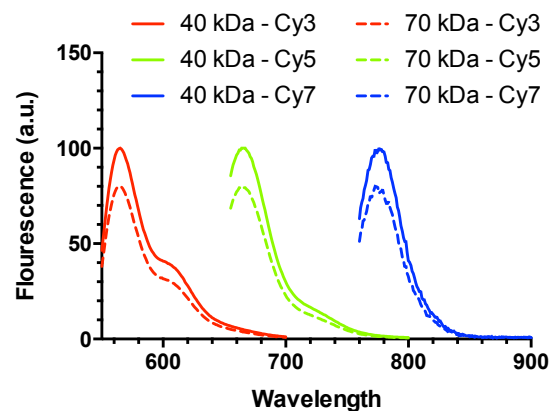
Magnetic Momentum vs Temperature



Scanning Electron Microscopy



Fluorescence Spectra



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Physicochemical properties

Dextran MW (kDa)	Iron Core Size (nm)	Hydrodynamic Diameter (nm)	PDI	Z-Potential (mV)	Blocking Temperature, Tb (K)	Conc. Iron (mg/mL)	% Iron (by weight)
40	8.2 (±1)	65 (±10)	0.15 (±0.5)	- 0.5 (±6)	35 (±5)	5	15 – 25 %
70	9.5 (±1)	73 (±10)	0.15 (±0.5)	- 0.5 (±6)	55 (±5)	5	5 – 15 %

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	Dextran MW	Iron Conc.	Volume	Iron Amount
CLIO-DYE-40-05-X	Fluorescent Magnetic CLIO Nanoparticles	40 kDa	5 mg/mL	0.5 mL	2.5 mg
CLIO-DYE-40-1-X	Fluorescent Magnetic CLIO Nanoparticles	40 kDa	5 mg/mL	1 mL	5 mg
CLIO-DYE-40-2-X	Fluorescent Magnetic CLIO Nanoparticles	40 kDa	5 mg/mL	2 mL	10 mg
CLIO-DYE-70-05-X	Fluorescent Magnetic CLIO Nanoparticles	70 kDa	5 mg/mL	0.5 mL	2.5 mg
CLIO-DYE-70-1-X	Fluorescent Magnetic CLIO Nanoparticles	70 kDa	5 mg/mL	1 mL	5 mg
CLIO-DYE-70-2-X	Fluorescent Magnetic CLIO Nanoparticles	70 kDa	5 mg/mL	2 mL	10 mg

X = 'AF4' – AFDye 488, 'C3' – Cy3, 'C5' – Cy5, 'IR7' – IR750