Luna Nanotech

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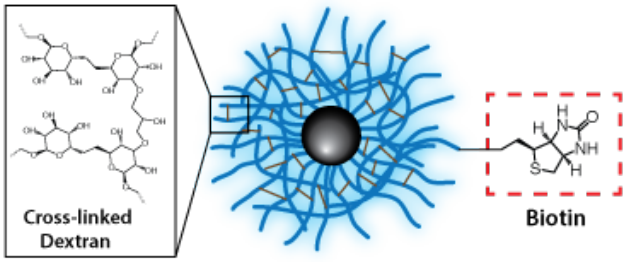
www.lunanano.com

Magnetic CLIO Nanoparticles: Biotin Functionalized

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.
- Easy loading of biomolecules through Streptavidin-biotin interaction.

General Information

Biotin functionalized Dextran coated crosslinked iron oxide nanoparticles (CLIO-BIOT) have 1-3 superparamagnetic Fe_3O_4 iron oxide cores (8-10 nm in diameter) imbedded within the matrix of dextran strands of 40 or 70 kDa in size. Dextran strands are cross-linked to prevent their disassociation, ensuring long-term stability. Biotin is covalently conjugated to the nanoparticle surface.

Applications

- *In vitro* and *in vivo* magnetic labels for cells and tissues.
- Magnetic cell separation.
- Probes for MRI.

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 PBS

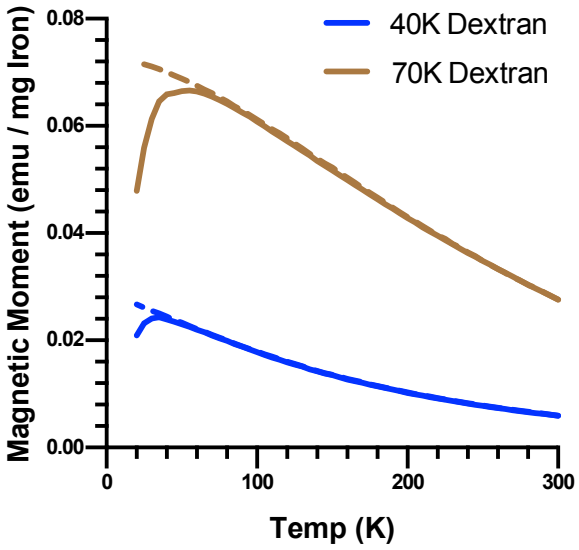
Storage and Handling

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

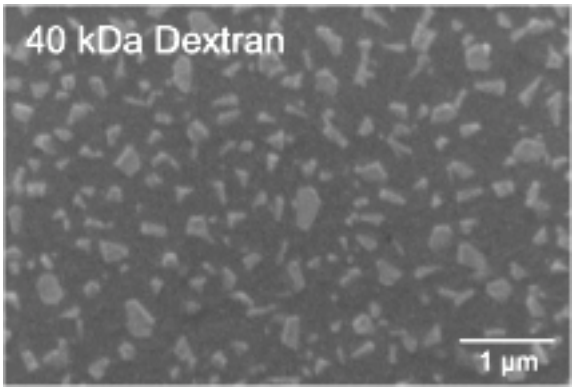
Vortex briefly prior to use to resuspend nanoparticles.

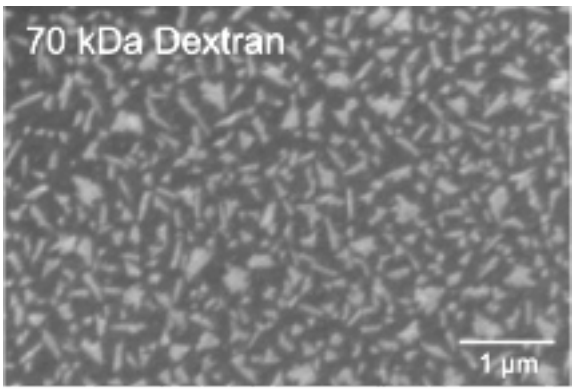
This product is for R&D uses only.
MSDS is available at www.lunanano.com.

Magnetic Momentum vs Temperature



Scanning Electron Microscopy





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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)	71 (±10)	0.19 (±0.5)	- 2.4 (±6)	35 (±5)	5	15 – 25 %
70	9.5 (±1)	74 (±10)	0.15 (±0.5)	- 1.5 (±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-BIOT-40-1	Biotin-functionalized CLIO Nanoparticles	40 kDa	5 mg/mL	1 mL	5 mg
CLIO-BIOT-40-2	Biotin-functionalized CLIO Nanoparticles	40 kDa	5 mg/mL	2 mL	10 mg
CLIO-BIOT-40-5	Biotin-functionalized CLIO Nanoparticles	40 kDa	5 mg/mL	5 mL	25 mg
CLIO-BIOT-40-10	Biotin-functionalized CLIO Nanoparticles	40 kDa	5 mg/mL	10 mL	50 mg
CLIO-BIOT-70-1	Biotin-functionalized CLIO Nanoparticles	70 kDa	5 mg/mL	1 mL	5 mg
CLIO-BIOT-70-2	Biotin-functionalized CLIO Nanoparticles	70 kDa	5 mg/mL	2 mL	10 mg
CLIO-BIOT-70-5	Biotin-functionalized CLIO Nanoparticles	70 kDa	5 mg/mL	5 mL	25 mg
CLIO-BIOT-70-10	Biotin-functionalized CLIO Nanoparticles	70 kDa	5 mg/mL	10 mL	50 mg