tel:4006551678 email: fige007@163.com

IRON OXIDE-BASED SUPERPARAMAGNETIC CONTRAST AGENTS

Molday ION™ product line is a family of iron oxide-based superparamagnetic contrast reagents designed to label cells and mark the vascular space. These MRI contrast reagents have a colloidal size of 30-50 nm and are classified as darkening agents acting through the T2 relaxation process.

Molday ION comes with many chemical surfaces and is presented below organized by applications. These applications are as follows:

Application 1: Vascular and Functional Imaging	Page 2
Application 2: Cell Labeling	Page 3
Application 3: Functional Chemistry for Conjugations	Page 4
Application 4: Receptor Targeting	Page 6
Application 5: Fluorescent Labeled Iron Oxides	Page 7
Application 6: Molecular Imaging	Page 8
Application 7: Molday ION Gycoprotein	Page 8
Application 8: Helpful Products for Staining and Fixing Iron-Labeled Cells	Page 9

BioPAL can also prepare custom nano-iron oxides. *Please Inquire!*

BioPAL is actively developing novel and innovative MRI products to assist the biomedical research community. The following are a list of our *NEWEST* products introduced on June 15 2012.

Molday ION Autoclaved	CL-30Q02-A2
Molday ION C6Amine Autoclaved	CL-50Q02-A6A
Molday ION Iodine	CL-30Q02-165
Molday ION Ovalbumin	CL-50Q01-OVA
Egg Ovalbumin ELISA kit	FIT-0615

IRON OXIDE-BASED SUPERPARAMAGNETIC CONTRAST AGENTS

NOT FOR HUMAN USE.

Application 1: Vascular and Functional Imaging

Catalog Number		
CL-30Q02-2	Molday ION™	4675

2.0 ml of 30 nm iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml having a zeta potential of ~ -5mV. As an intravascular contrast agent, Molday ION has a blood half-life of several hours and can be used in a wide range of cardiovascular research applications.
Applications: MRI vascular/functional imaging, Blood pool agent, EM, Magnetic cell-sorting.
References: 1 and 2

CL-30Q02-A2	Molday ION™ Autoclaved	5100

2.0 ml of 30 nm iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle and autoclaved. 10 mg Fe/ml having a zeta potential of ~ -5mV. As an intravascular contrast agent, Molday ION has a blood half-life of several hours and can be used in a wide range of cardiovascular research applications.
Applications: MRI vascular/functional imaging, Blood pool agent, EM, Magnetic cell-sorting.

CL-70Q02-2	Molday ION™	4675

2.0 ml of 70 nm iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml having a zeta potential of ~ -5mV. Molday ION (70 nm) can be used to complement studies obtained with Molday ION (30 nm) or where a larger nanoparticle is needed.
Applications: MRI vascular/functional imaging, Blood pool agent, EM, Magnetic cell-sorting.

CL-20Q02-3	Molday ION Aminodextran™	4675

2.0 ml of 20 nm iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml.
Applications: MRI vascular/functional imaging, Blood pool agent, EM, Magnetic cell-sorting.

CL-30Q02-5	Molday ION CLI**OH** ™	8075

2.0 ml of 30 nm iron-based superparamagnetic contrast agent having a neutral surface packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml having a zeta potential of ~ 0mV.
Molday ION CLIOH is formulated to provide a stable neutral inert surface.

CL-30Q02-7	Molday ION Carboxyl™	4675

2.0 ml of 20 nm iron-based superparamagnetic contrast agent containing carboxyl groups packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml having a zeta potential of ~ -20mV.
Applications: MRI vascular/functional imaging, EM, Magnetic cell-sorting.

CL-30Q02-6	Molday ION (-)™	5100

2.0 ml of 30 nm iron-based superparamagnetic contrast agent having a negative colloid surface packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml having a zeta potential of ~ -15mV.
Molday ION (-) is formulated for labeling cells using Poly-L-Lysine.
Applications: Cell labeling, Cell labeling with MRI tracking, EM.

CL-00-01	Poly-L-Lysine	1700

1.0 ml poly-l-lysine (10 mg/ml) packaged in a 2 ml sealed serum bottle.
Applications: For use with Molday ION (-) for the application of labeling cells
The procedure for labeling Poly-L-Lysine onto CL-30Q02-6 is provided as a separate PDF download on BioPAL's web site – **Application Note #1**.

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com

IRON OXIDE-BASED SUPERPARAMAGNETIC CONTRAST AGENTS

CL-30Q02-6C **Molday ION Carboxyl Terminated™** 6715
2.0 ml of 30 nm iron-based superparamagnetic contrast agent containing carboxyl groups packaged in 2 ml sealed serum bottle. 2.5 mg Fe/ml, having a zeta potential of ~ -35 mV.
Applications: MRI, EM, Magnetic cell-sorting, Cell targeting, Conjugation – **Application Note #10**.

CL-30Q02-CA **Molday ION Carboxyl/Amine Terminated™** 8075
2.0 ml of 30 nm iron-based superparamagnetic contrast agent containing amine and carboxyl groups designed to approximate the surface of a protein packaged in a 2 ml serum bottle. 5 mg Fe/ml, having a zeta potential of ~ +4 mV.
Applications: MRI, EM, Magnetic cell-sorting, Cell labeling.

CL-30Q02-165 **Molday ION™ Iodine** 7650
2.0 ml of 30 nm iron-based superparamagnetic contrast agent conjugated with iodine packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml and 0.8 mg I/ml.
Applications: Combined micro-CT and MRI.

Application 2: Cell Labeling

Catalog Number

CL-50Q02-6A **Molday ION C6Amine™** 8075
2.0 ml of 35 nm iron-based superparamagnetic contrast agent with amine groups separated by a 6 carbon spacer packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml having a zeta potential of ~ +48 mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site.
Applications: Cell labeling, Cell labeling with MRI tracking, Drug delivery, Theranostics.
For additional information, please review **Application Note #7** on BioPAL Web Site.

CL-50Q02-A6A **Molday ION C6Amine™ Autoclaved** 8500
2.0 ml of 35 nm iron-based superparamagnetic contrast agent with amine groups separated by a 6 carbon spacer packaged in a 2 ml sealed serum bottle and autoclaved.
5 mg Fe/ml having a zeta potential of ~ +48 mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site.
Applications: Cell labeling, Cell labeling with MRI tracking, Drug delivery, Theranostics.
For additional information, please review **Application Note #7** on BioPAL Web Site.

CL-50Q02-6A-50 **Molday ION Rhodamine B™** 7650
2.0 ml of 35 nm rhodamine B labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +31 mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site.
PDF downloads depicting labeled cells, as well as presented posters, is also provided.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #3** on BioPAL Web Site.

CL-50Q02-6A-51 **Molday ION EverGreen™** 7650
2.0 ml of 35 nm EverGreen labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +31 mV.
Labeled cells may be visualized using a standard fluorescein filter set. Molday Ion EverGreen has an excitation and emission maxima at 498 nm and 526 nm, respectively.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #3** on BioPAL Web Site.

IRON OXIDE-BASED SUPERPARAMAGNETIC CONTRAST AGENTS

CL-50Q02-6A-52 Molday ION **Coumarin™** 7650

2.0 ml of 35 nm Coumarin labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +30 mV. Labeled cells may be visualized using a standard DAPI filter set. Molday Ion Coumarin has an excitation and emission maxima at 356 nm and 456 nm, respectively.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #3** on BioPAL Web Site.

CL-50Q02-6A-53 Molday ION **Rose Bengal™** 7650

2.0 ml of 35 nm Rose Bengal labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +31 mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #9** on BioPAL Web Site.

CL-50Q02-6S-51 Molday SION **EverGreen™** 7225

Molday SION is designed to minimize interference from Serum.
1.0 ml of 35 nm EverGreen labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +31 mV. Labeled cells may be visualized using a standard fluorescein filter set. Molday Ion EverGreen has an excitation and emission maxima at 498 nm and 526 nm, respectively.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #3** on BioPAL Web Site.

CL-30Q02-6 Molday ION (-)™ 5100

2.0 ml of 30 nm iron-based superparamagnetic contrast agent having a negative colloid surface packaged in a 2 ml sealed serum bottle. 10 mg Fe/ml having a zeta potential of ~ -15mV. Molday ION (-) is formulated for labeling cells using Poly-L-Lysine.
Applications: Cell labeling, Cell labeling with MRI tracking, EM.

CL-00-01 Poly-L-Lysine.....1700

1.0 ml poly-l-lysine (10 mg/ml) packaged in a 2 ml sealed serum bottle.
Applications: For use with Molday ION (-) for the application of labeling cells
The procedure for labeling Poly-L-Lysine onto CL-30Q02-6 is provided as a separate PDF download on BioPAL's web site – **Application Note #1**.

CL-50Q02-71 Molday ION Spermidine™ 8075

1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with spermidine packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml having a zeta potential of ~ +35mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site (**Application Note #5**).
Applications: Cell labeling, Cell labeling with MRI tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

Application 3: Functional Chemistry for Conjugations

Catalog Number

Molday ION Containing Reactive Amines

CL-50Q02-6A Molday ION C6Amine™.....8075

2.0 ml of 35 nm iron-based superparamagnetic contrast agent with amine groups separated by a 6 carbon spacer packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml having a zeta potential of ~ +48 mV.
Applications: Conjugation with bifunctional agents, Click chemistry, NHS esters, Isothiocyanates.

CL-50Q02-A6A **Molday ION C6Amine™ Autoclaved**.....8500
2.0 ml of 35 nm iron-based superparamagnetic contrast agent with amine groups separated by a 6 carbon spacer packaged in a 2 ml sealed serum bottle and autoclaved. 5 mg Fe/ml having a zeta potential of ~ +48 mV.

CL-30Q02-CA **Molday ION Carboxyl/Amine Terminated™** 8075
2.0 ml of 30 nm iron-based superparamagnetic contrast agent containing amine and carboxyl groups designed to approximate the surface of a protein packaged in a 2 ml serum bottle. 5 mg Fe/ml, having a zeta potential of ~ +4 mV.
Applications: Conjugation with bifunctional agents, Click chemistry, NHS esters, Isothiocyanates.

CL-50Q02-15 **Molday ION Aromatic Amine™** 6715
2.0 ml of 40 nm iron-based superparamagnetic contrast agent containing aromatic amine groups packaged in a 2 ml sealed serum bottle. 2.5 mg Fe/ml having a zeta potential of ~ +48 mV. This nanoparticle is designed not to independently bind to or be internalized by cells. Therefore, cell labeling is achieved exclusively *via* your conjugated ligand.
Applications: After activation to an isothiocyanate this nanoparticle will react with amine containing compounds.

CL-50Q02-161 **Poly's L-Lysin Molday ION Amine Terminated™** 8075
2.0 ml of 40 nm iron-based 2.0 ml of 40 nm iron-based superparamagnetic contrast agent coated with L-lysine packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml having a zeta potential of ~ +20 mV. The epsilon-amines groups of lysine are ideally suited for conjugation of ligands and macromolecules. This nanoparticle is designed not to independently bind to or be internalized by cells. Therefore, cell labeling is achieved exclusively via your conjugated ligand.
Applications: Conjugation of amine containing nanoparticles, MRI, EM, Drug delivery, Theranostics, Magnetic cell-sorting.

Molday ION Containing Reactive Carboxyls

CL-30Q02-6C **Molday ION Carboxyl Terminated™** 6715
2.0 ml of 30 nm iron-based superparamagnetic contrast agent designed for conjugating a ligand, peptide, antibody, or protein using water soluble carbodiimide packaged in a 2 ml sealed serum bottle. 2.5 mg Fe/ml, having a zeta potential of ~ -35 mV.
This nanoparticle is designed not to independently bind to or be internalized by cells. Therefore, cell labeling is achieved exclusively *via* your conjugated ligand. A suggested procedure for conjugation of amine containing compounds is provided as a PDF download on BioPAL's web site (**Application Note #5 and #10**).
Applications: Conjugation of amine containing compounds using water soluble carbodiimide, MRI, EM, Drug delivery, Theranostics, Magnetic cell-sorting.

CL-30Q02-CA **Molday ION Carboxyl/Amine Terminated™** 8075
2.0 ml of 30 nm iron-based superparamagnetic contrast agent containing amine and carboxyl groups designed to approximate the surface of a protein packaged in a 2 ml serum bottle. 5 mg Fe/ml, having a zeta potential of ~ +4 mV.
Applications: Conjugation with bifunctional agents, Click chemistry, NHS esters, Isothiocyanates.

Molday ION Containing Other Reactive Groups

CL-30Q02-10 **Molday ION Aldehyde™** 6715
2.0 ml of 30 nm iron-based superparamagnetic contrast agent designed for conjugating amine containing ligand packaged in a 2 ml sealed serum bottle. 2.5 mg Fe/ml having a zeta potential of ~ -35 mV.
A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site.
Applications: Labeling liposomes, preparation of ferrosomes, Cell labeling.
References: 3 and 4

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com

CL-50Q02-162 Poly's L-Tyrosine Molday ION Phenol Terminated™ 8075

2.0 ml of 40 nm iron-based superparamagnetic contrast agent coated with L-tyrosine packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml having a zeta potential of ~ -5 mV. The phenol group of tyrosine is ideally suited for applications as a substrate for tyrosine kinases, iodination with 124-I (PET), 125-I (metabolic studies), and 127-I (CT). This nanoparticle is designed not to independently bind to or be internalized by cells. Therefore, cell labeling is achieved exclusively via your conjugated ligand.
Applications: MRI, PET, CT, Metabolism studies, EM, Drug delivery, Theranostics.

Application 4: Receptor Targets

Catalog Number

CL-50Q02-6C-54 Molday ION Biotin™ 8075

1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with Biotin packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml having a zeta potential of ~ -35mV. CL-50Q02-6C-54 reacts with streptavidin as shown by receptor double diffusion. Biotin Is conjugated to Molday ION using an extended linker.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-50Q01-6C-54 Molday ION Biotin PEG™ 8415

1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with Biotin packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml. CL-50Q01-6C-54 reacts with streptavidin as shown by receptor double diffusion. Biotin Is conjugated to Molday ION through a PEG extended linker.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-160Q01-22 Molday ION StreptAvidin™ 9350

1.0 mg of Fe of 160 nm iron-based superparamagnetic contrast agent conjugated with Streptavin packaged in a 2 ml sealed serum bottle. CL-160Q01-22 reacts with biotin-fluorescein as shown by fluorescent measurements.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-100Q01-21 Molday ION GAM™ 9350

1.0 ml of 100 nm iron-based superparamagnetic contrast agent conjugated with Goat anit-mouse IgG packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml. CL-100Q01-21 reacts with mouse IgG-fluorescein as shown by fluorescent measurements.
Applications: Mouse-IgG conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-50Q02-71 Molday ION Spermidine™ 8075

1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with spermidine packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml having a zeta potential of ~ +35mV. CL-50Q02-71 enters cells via the polyamine receptor.
Applications: Cell labeling, Cell labeling with MRI tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

MR-7100 PolyGalactose*Magnetite*™ 6375

Packaged as 200 mg powder in a 10 ml sealed serum bottle.
For additional information, please see **Application Note #4**.

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com

Application 5: Fluorescent Labeled Iron Oxides

Catalog Number

CL-50Q02-6A-50 Molday ION **Rhodamine B™** 7650
2.0 ml of 35 nm rhodamine B labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~+31 mV. A suggested procedure for labeling cells is provided as a PDF download on BioPAL's web site (**Application Note #3**).
PDF downloads depicting labeled cells, as well as presented posters, is also provided.
Applications: Cell labeling, Cell labeling combined with MRI and fluorescent tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-50Q02-6A-51 Molday ION **EverGreen™** 7650
2.0 ml of 35 nm EverGreen labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~+31 mV. Labeled cells may be visualized using a standard fluorescein filter set. Molday Ion EverGreen has an excitation and emission maxima at 498 nm and 526 nm, respectively.
Applications: Cell labeling, Cell labeling combined with MRI and fluorescent tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-50Q02-6A-52 Molday ION **Coumarin™** 7650
2.0 ml of 35 nm Coumarin labeled iron-based superparamagnetic contrast agent packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +30 mV. Labeled cells may be visualized using a standard DAPI filter set. Molday Ion Coumarin has an excitation and emission maxima at 356 nm and 456 nm, respectively.
Applications: Cell labeling, Cell labeling with MRI tracking, Live cell imaging (*in vitro*), Drug delivery, Theranostics, Fluorescent detection.
For additional information, please review **Application Note #3** on BioPAL Web Site.

CL-50Q02-6C-50 Molday ION **Rhodamine B** Carboxyl™ 7650
2.0 ml of 35 nm rhodamine B labeled iron-based superparamagnetic contrast agent designed for conjugating a ligand, peptide, antibody, or protein using water soluble carbodiimide packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ -35 mV. This nanoparticle is designed not to independently bind to or be internalized by cells. Therefore, cell labeling is achieved exclusively *via* your conjugated ligand. A suggested procedure for conjugation of amine containing compounds is provided as a PDF download on BioPAL's web site (**Application Note #5**).
Applications: Conjugation of amine containing compounds using water soluble carbodiimide, MRI, EM, Drug delivery, Theranostics, Magnetic cell-sorting.

CL-50Q02-CA-50 Molday ION Carboxyl/Amine **Rhodamine B™** 7650
2.0 ml of 50 nm rhodamine B labeled iron-based superparamagnetic contrast agent containing amine and carboxyl groups designed to approximate the surface of a protein packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml having a zeta potential of ~ +4 mV.
Applications: MRI, EM, Fluorescent detection, Magnetic cell-sorting.

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com

Application 6: Molecular Imaging

Catalog Number

CL-50Q02-6C-54 — Molday ION Biotin™ 8075
1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with Biotin packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml having a zeta potential of ~-35mV. CL-50Q02-6C-54 reacts with streptavidin as shown by receptor double diffusion. Biotin Is conjugated to Molday ION using an extended linker.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-50Q01-6C-54 — Molday ION Biotin PEG™ 8415
1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with Biotin packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml. CL-50Q01-6C-54 reacts with streptavidin as shown by receptor double diffusion. Biotin Is conjugated to Molday ION through a PEG extended linker.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-160Q01-22 — Molday ION StreptAvidin™ 9350
1.0 ml of 160 nm iron-based superparamagnetic contrast agent conjugated with Streptavin packaged in a 2 ml sealed serum bottle. 1.6 mg Fe/ml. CL-160Q01-22 reacts with biotin-fluorescein as shown by fluorescent measurements.
Applications: Biotin-Streptavidin conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-100Q01-21 — Molday ION GAM™ 9350
1.0 ml of 100 nm iron-based superparamagnetic contrast agent conjugated with Goat anit-mouse IgG packaged in a 2 ml sealed serum bottle. 2 mg Fe/ml. CL-100Q01-21 reacts with mouse IgG-fluorescein as shown by fluorescent measurements.
Applications: Mouse-IgG conjugation strategies, Cell labeling, Cell labeling with MRI tracking, Tumor tracking, EM, Magnetic cell-sorting, Drug delivery, Theranostics.

CL-30Q02-165 — Molday ION™ Iodine.....7650
2.0 ml of 30 nm iron-based superparamagnetic contrast agent conjugated with iodine packaged in a 2 ml sealed serum bottle. 5 mg Fe/ml and 0.8 mg I/ml.
Applications: Combined micro-CT and MRI.

Application 7: Molday ION Gycoprotien

Catalog Number

CL-50Q01-OVA — Molday ION™ Ovalbumin 6800
1.0 ml of 40 nm iron-based superparamagnetic contrast agent conjugated with ovalbumin packaged in a 2 ml sealed serum bottle. 1 mg Fe/ml having a zeta potential of ~-11mV. Quality control by ovalbumin ELISA.

FIT-0615 — Egg Ovalbumin ELISA Kit.....3400
The kit contains ovalbumin concentrate, ovalbumin antiserum, goat anti-rabbit IgG-HRP, HRP substrate and stop reagents, an ovalbumin 96 well coated plate, two plate sealers, FIT-GFR Inulin kit manual and documentation.

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com

Application 8: Helpful Products for Staining and Fixing Iron-Labeled Cells

Catalog Number

CL-01-50 Prussian Blue Reagent Pack 1800

Pack consists of Reagent A (50 ml) and Reagent B (50 ml) plus phosphate buffered saline (100 ml). BioPAL's Prussian Blue Reagent Pack has been formulated for visualizing cells labeled with Molday ION family of products. It can also be used for visualizing cells labeled with other iron containing compounds, such as ferritin.
Applications: For visualizing iron-labeled cells.
The procedure for Prussian Blue staining of iron-labeled cells is provided as a separate PDF download on BioPAL's web site (**Application Note #7**).

CL-01-51 PBS++ 1500

Phosphate buffered saline supplemented with (0.1 g/L $CaCl_2$) and (0.1 g/L $MgCl_2$).
Amount 100 ml, Store at 4°C.
Applications: Cell Fixation.
The procedure for fixing cells is provided as a separate PDF download on BioPAL's web site (**Application Note #3**).

CL-01-52 25% Glutaraldehyde.....1300

Amount 5 ml, Store at 4°C.
Applications: Cell Fixation.
The procedure for fixing cells is provided as a separate PDF download on BioPAL's web site (**Application Note #6**).

CL-01-53 40% Formalin.....1300

Amount 5 ml, Store at 4°C.
Applications: Cell Fixation.
The procedure for fixing cells is provided as a separate PDF download on BioPAL's web site (**Application Note #6**).

References

1. JuanYin J, Tracy K, Zhang L, Munasinghe J, Shapiro E, Koretsky A, *et al*.: Noninvasive imaging of the functional effects of anti-VEGF therapy on tumor cell extravasation and regional blood volume in an experimental brain metastasis model. *Clin Exp Metastasis* (2009) **26**; 403-14.
2. Lee J, Hirano Y, Fukunaga M, Silva A, and Dyun, JH: Investigating the sources of phase contrast: iron oxide nanoparticle study to exclude deoxyhemoglobin as a major source for the gray/white matter phase contrast. *NeuroImage* (2009) **47** Supplement 1, S39-S41.
3. Bogdanov AA, Jr., Martin C, Weissleder R, Brady TJ: Trapping of dextran-coated colloids in liposomes by transient binding to aminophospholipid: preparation of ferrosomes. *Biochim Biophys Acta* (1994) **1193**; 212-8.
4. Groman EV, Yang M, Reinhardt, CP, Weinberg, JS, Vaccaro, DE: Polycationic Nanoparticles: (1) Synthesis of a Polylysine-MION Conjugate and its Application in Labeling Fibroblasts. *J of Cardiovasc Trans Res* (2009) **2**; 30-38.

BioPAL, Inc. • 80 Webster Street • Worcester, MA 01603 • TEL: 508-770-1190 • FAX: 508-770-1191 • e-mail: cs@BioPAL.com • web site: www.BioPAL.com