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Product Information

CF™ Dye Human Transferrin Conjugates

Catalog #	Conjugate
00081	Human Transferrin, CF™488A
00082	Human Transferrin, CF™543
00083	Human Transferrin, CF™568
00084	Human Transferrin, CF™594
00085	Human Transferrin, CF™640R
00086	Human Transferrin, CF™680R
00087	Human Transferrin, CF™750

Unit Size: 1 mg

Storage and Handling

Store at -20°C upon arrival and protect from light. The lyophilized product is stable for at least six months from date of receipt when stored as recommended. Reconstitute in phosphate-buffered saline, add sodium azide to a final concentration of 2 mM, and store at 4°C. Briefly centrifuge the tube prior to use to remove any aggregates. This product contains human holo-transferrin and has tested negative for HIV and HBsAg, but should be treated as containing potentially infectious agents. Please handle and dispose of this product using universal laboratory safety precautions.

Spectral Properties

Conjugate	Abs_{max} (nm)	Em_{max} (nm)
CF™488A Human Transferrin	490	515
CF™543 Human Transferrin	541	560
CF™568 Human Transferrin	562	583
CF™594 Human Transferrin	593	614
CF™640R Human Transferrin	642	662
CF™680R Human Transferrin	663	682
CF™750 Human Transferrin	755	777

Product Description

Transferrin is an iron-binding glycoprotein that delivers iron to cells by binding to the transferrin receptor when in its holo form (saturated with iron). The complex is subsequently internalized via clathrin-mediated endocytosis. Several factors, including endosomal pH and oxidoreductase activity, allow for the release of iron from transferrin. The apo-transferrin is then recycled back to the surface of the cell with the transferrin receptor via the endocytic recycling pathway and released to bind more iron.

Labeled human holo-transferrin is used for microscopic studies of the endosomal pathway and/or transferrin uptake. Biotium's holo-transferrin conjugates are labeled with a selection our CF™ dyes, a series of next-generation fluorescent dyes developed at Biotium to have combined advantages in brightness, photostability, and water solubility compared to other fluorescent dyes.

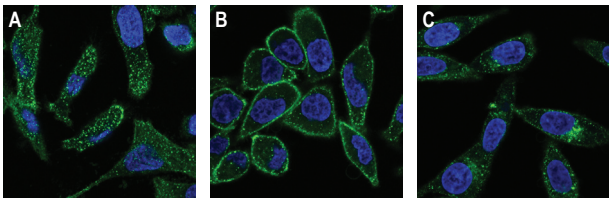

Figure 1. HeLa cells labeled with CF™488A Human Transferrin. Cells were incubated at 4°C for 90 minutes with 25 ug/mL CF™488A Human Transferrin (green) and were either fixed immediately or placed at 37°C for 15 minutes prior to fixation. Cells were also stained with DAPI (blue). A) Surface labeling - cell surface view, B) surface labeling - cross-section of cells, C) trafficked transferrin - cross section of cells.

Assay Protocol

The following is a protocol for labeling transferrin receptors on mammalian cells.

1. Reconstitute CF™ dye conjugated human transferrin in 1X PBS to a concentration of 1 mg/mL. For storage at 4°C, sodium azide can be added to a final concentration of 2 mM if it is compatible with your application.

2. Serum starve cells for one hour prior to labeling. Then, wash cells with cold PBS + 0.1% Bovine Serum Albumin (BSA). Add a final concentration of 25 ug/mL CF™ dye conjugated human transferrin in cold PBS + 0.1% BSA and incubate at 4°C for 90 minutes in the dark. Wash cells three times with cold PBS + 0.1% BSA.

3. A: For surface staining, immediately fix cells in 4% paraformaldehyde in 1X PBS for 15 minutes at room temperature (protected from light).

   B: For trafficking assays, add warm complete cell medium to the cells and incubate at 37°C for 5 minutes to 1 hour in the dark. Wash cells three times in cold PBS + 0.1% BSA prior to fixing the cells in 4% paraformaldehyde in 1X PBS for 15 minutes at room temperature (protected from light).

4. Wash cells twice with 1X PBS and process samples for imaging or subsequent immunostaining.

Related Products

Catalog #	Product Name	Unit Size
40061-T	RedDot™2 Far Red Nuclear Counterstain, 200X in DMSO, Trial Size	25 uL (15-20 tests)
40046	Hoechst 33342, 10 mg/mL in H_2O	10 mL
23001	EverBrite™ Mounting Medium	10 mL
23002	EverBrite™ Mounting Medium with DAPI	10 mL
23003	EverBrite™ Hardset Mounting Medium	10 mL
23004	EverBrite™ Hardset Mounting Medium with DAPI	10 mL
23005	CoverGrip™ Coverslip Sealant	15 mL
22005	Mini Super^{HT} Pap Pen 2.5 mm tip, ~400 uses	1 pen
22006	Super^{HT} Pap Pen 4 mm tip, ~800 uses	1 pen

Please visit www.biotium.com to view our full selection of CF™ dye bioconjugates, including secondary antibodies, anti-tag and anti-hapten antibodies, phalloidin, alpha-bungarotoxin, lectins, Annexin V, and many other innovative products for life science research.