

# 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.

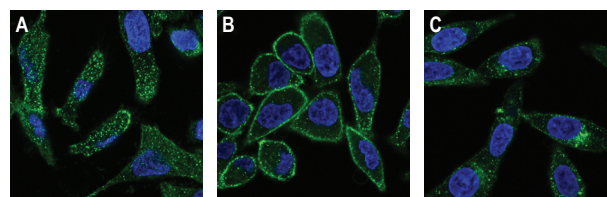
### Spectral Properties

Conjugate	Abs <sub>max</sub> (nm)	Em <sub>max</sub> (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 <sub>2</sub> O	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 <sup>HT</sup> Pap Pen 2.5 mm tip, ~400 uses	1 pen
22006	Super <sup>HT</sup> Pap Pen 4 mm tip, ~800 uses	1 pen

Please visit [www.biotium.com](http://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.

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