

Nucleic acid labeling and modification

Intracellular Nucleic Acid Localization

Label IT® Plasmid Tracker™ Intracellular Nucleic Acid Kits

- ◆ Label and transfect the plasmid of your choice.
- ◆ Easy one-step covalent attachment with a variety of labels enabling multi-color tracking : Cy™3, Cy™5, CX-Rhodamine, TM-Rhodamine, Fluorescein and Biotin.
- ◆ High efficiency plasmid delivery using TransIT®-LT1 Transfection Reagent (included in kit).
- ◆ Real time tracking of nucleic acid transfer and transgene expression.

The *Label IT*® Tracker™ Intracellular Nucleic Acid Localization Kit provides a straight forward approach to directly label and deliver plasmid DNA, of your design, in an efficient yet non-destructive manner, for in vitro tracking experiments. Both subcellular localization and reporter transgene expression can be monitored simultaneously following introduction of the labeled plasmid into mammalian cells.

Each kit contains *Label IT*® Tracker™ Reagent, TransIT®-LT1 Reagent, Tracker Reconstitution Buffer and 10X Labeling Buffer. Store all components at -20°C.

Description	Cat.#	Qty
<i>Label IT</i> ® Tracker™ Cy™3	J65390	1 kit ⁽¹⁾
<i>Label IT</i> ® Tracker™ Cy™5	J66110	1 kit
<i>Label IT</i> ® Tracker™ Fluorescein	J71570	1 kit
<i>Label IT</i> ® Tracker™ CX-Rhodamine	J66860	1 kit
<i>Label IT</i> ® Tracker™ TM-Rhodamine	J69990	1 kit
<i>Label IT</i> ® Tracker™ Biotin	J70260	1 kit

⁽¹⁾ Kit J65390 provides sufficient reagents to label 50 to 200 µg of plasmid DNA, which is enough to perform at least 50 transfections (1 µg/well) in 6-well plates and includes a vial of TransIT®-LT1 Transfection Reagent. The protocol has been optimized to work with TransIT® transfection reagents.

Label IT® siRNA Tracker Kits

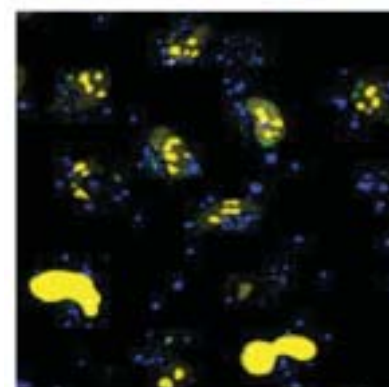
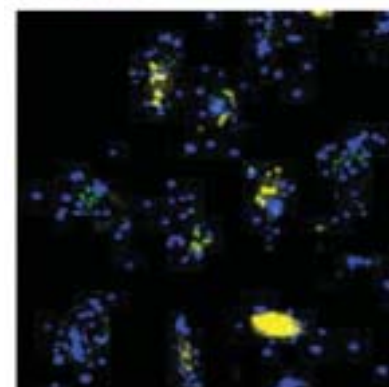
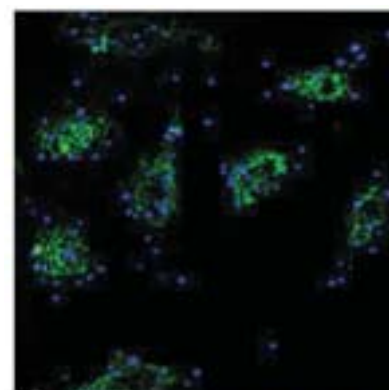
- ◆ Efficiently label the siRNA of your choice.
- ◆ Easy one-step covalent attachment with a variety of labels enabling multi-color tracking : Cy™3, Cy™5, CX-Rhodamine, TM-Rhodamine, Fluorescein and Biotin.
- ◆ siRNA labeled with the kit can be delivered to cells in vitro or in vivo using a transfection reagent or your method of choice.

The *Label IT*® siRNA Tracker Intracellular Localization Kit provides a straight forward approach to directly label siRNA, of your design, in an efficient yet non-destructive manner. The covalently labeled siRNA can then be used for in vitro or in vivo tracking experiments. Subcellular localization and functional inhibition of target gene expression can be monitored following introduction of the labeled siRNA into mammalian cells.

Each Kit contains *Label IT*® siRNA Tracker Reagent, *Label IT*® Reconstitution Solution, 10X Labeling Buffer A, and siRNA Dilution Buffer. siRNA delivery reagents are not supplied with this kit.

This kit provides sufficient reagents to label 50 µg of siRNA.

Description	Cat.#	Qty
<i>Label IT</i> ® siRNA Tracker Cy™3 Kit	BE7850	labels 50 µg siRNA
<i>Label IT</i> ® siRNA Tracker Cy™5 Kit	BE7860	labels 50 µg siRNA
<i>Label IT</i> ® siRNA Tracker Fluorescein Kit	BI1530	labels 50 µg siRNA
<i>Label IT</i> ® siRNA Tracker CX-Rhodamine Kit	BE7870	labels 50 µg siRNA
<i>Label IT</i> ® siRNA Tracker TM-Rhodamine Kit	BE7880	labels 50 µg siRNA
<i>Label IT</i> ® siRNA Tracker Biotin Kit	GS0380	labels 50 µg siRNA



COS-7 cells transfected with *Label IT*® Tracker™ Cy™5 labeled peYFP-nuc and *TransIT*®-LT1 Transfection Reagent in complete media. Images were acquired at 3, 8 and 20 hours post-transfection.

For more information on siRNA delivery in vivo, see the following references :

Lewis, *Nature Genetics*, 32, 107(2002)
Zhang, *Human Gene Therapy*, 10, 1735(1999)
Liu, *Gene Therapy*, 6, 1258 (1999)
Hagstrom, *Molecular Therapy*, 10, 386(2004).

See also Transfection reagents page D.103

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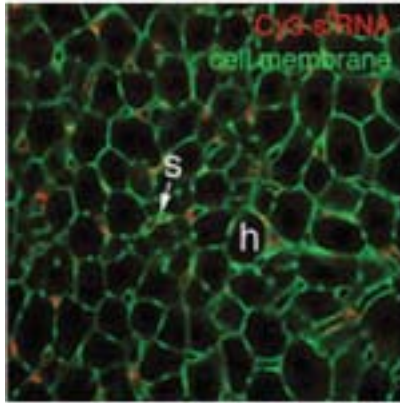


Figure 1

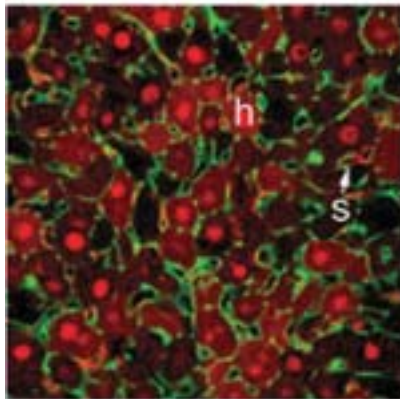
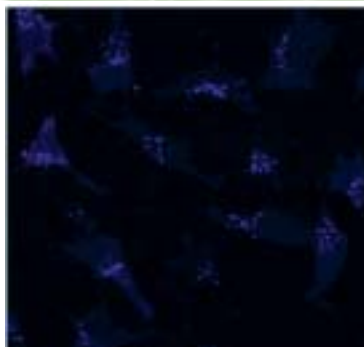
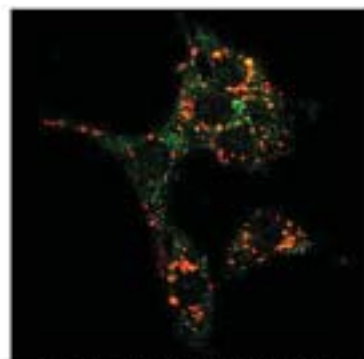


Figure 2

siRNA (25 µg) was labeled post-synthetically with the *Label/IT*[®] siRNA Tracker CyTM3 Kit and delivered into mice through the tail vein using either low volume injection conditions (100 µl) (Figure 1) or hydrodynamic injection conditions (2 ml over 6-8 seconds)(Figure 2). Mouse livers were harvested 30 minutes after injection, fixed in paraformaldehyde, sectioned (10 µm thick) and analyzed via confocal microscopy (Zeiss Axioplan 2/LSM 510 confocal microscope).



HeLa cells transfected with *Label IT*[®] siRNA Tracker[™] CyTM5 labeled siRNA and *TransIT-TKO*[®] Transfection Reagent in complete media for 24 hours



C6 cells transfected with *Label IT*[®] siRNA Tracker[™] CyTM3 labeled siRNA and *TransIT-TKO*[®] Transfection Reagent in complete media for 24 hours.

Label IT[®] siRNA Tracker Kits with *TransIT-TKO*[®] Transfection Reagent

- ◆ Efficiently label, transfect and track the siRNA of your choice.
- ◆ Easy one-step covalent attachment with a variety of labels enabling multi-color tracking : CyTM3, CyTM5, CX-Rhodamine, TM-Rhodamine, Fluorescein and Biotin.
- ◆ High efficiency siRNA delivery using *TransIT-TKO*[®] Transfection Reagent (included in kit).
- ◆ Real time tracking of siRNA delivery.

The *Label IT*[®] siRNA Tracker Intracellular Localization Kits with *TransIT-TKO*[®] Transfection Reagent provide a straight forward approach to directly label and deliver siRNA, of your design, in an efficient yet non-destructive manner, for in vitro tracking experiments. Subcellular localization and functional inhibition of target gene expression can be monitored following introduction of the labeled siRNA into mammalian cells.

Each Kit contains all reagents for labeling and transfecting siRNA: *Label IT*[®] siRNA Tracker Reagent, *Label IT*[®] Reconstitution Solution, 10X Labeling Buffer A , siRNA Dilution Buffer, and *TransIT-TKO*[®] Transfection Reagent.

The kits provide sufficient reagents to label 50 µg of siRNA and perform at least 500 transfections in 24-well plates. *TransIT-TKO*[®] Transfection Reagent, which is included, is designed specifically for high efficiency, low toxicity siRNA transfections in a variety of cell lines.

Description	Cat.#	Qty
<i>Label IT</i> [®] siRNA Tracker Cy TM 3 Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3240	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Cy TM 5 Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3250	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Fluorescein Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3290	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker CX-Rhodamine Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3260	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker TM-Rhodamine Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3270	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Biotin Kit , <i>TransIT-TKO</i> [®] Transfection Rt	AL3280	labels 50 µg siRNA

Label IT[®] siRNA Tracker Kits with *TransIT*[®]-*siQUEST*[™] Transfection Reagent

- ◆ Efficiently label, transfect and track the siRNA of your choice.
- ◆ Easy one-step covalent attachment with a variety of labels enabling multi-color tracking : CyTM3, CyTM5, CX-Rhodamine, TM-Rhodamine, Fluorescein and Biotin.
- ◆ High efficiency siRNA delivery using *TransIT*[®]-*siQUEST*[™] Transfection Reagent (included in kit).
- ◆ Real time tracking of siRNA delivery.

The *Label IT*[®] siRNA Tracker Intracellular Localization Kit with *TransIT*[®]-*siQUEST*[™] Transfection Reagent provides a straight forward approach to directly label and deliver siRNA, of your design, in an efficient yet non-destructive manner, for in vitro tracking experiments. Subcellular localization and functional inhibition of target gene expression can be monitored following introduction of the labeled siRNA into mammalian cells.

Each Kit contains *Label IT*[®] siRNA Tracker Reagent, *Label IT*[®] Reconstitution Solution, 10X Labeling Buffer A, siRNA Dilution Buffer, and *TransIT*[®]-*siQUEST*[™] siRNA Transfection Reagent.

The kits provide sufficient reagents to label 50 µg of siRNA and perform at least 500 transfections in 24-well plates. *TransIT*[®]-*siQUEST*[™] Transfection Reagent, which is included, is designed specifically for the high efficiency, low toxicity transfection of siRNA in a variety of cell lines.

Description	Cat.#	Qty
<i>Label IT</i> [®] siRNA Tracker Cy TM 3 Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0440	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Cy TM 5 Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0430	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Fluorescein Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0450	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker CX-Rhodamine Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0420	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker [™] -Rhodamine Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0460	labels 50 µg siRNA
<i>Label IT</i> [®] siRNA Tracker Biotin Kit , <i>TransIT</i> [®] - <i>siQUEST</i> [™] Transfection Rt	GS0390	labels 50 µg siRNA

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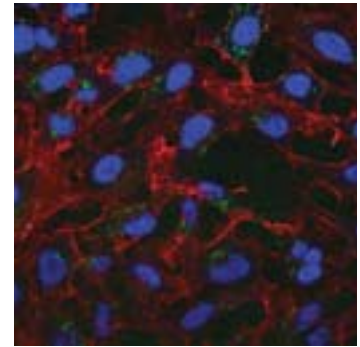
Label IT® Plasmid Delivery Controls

The Label IT® Plasmid Delivery Controls consist of CyTM3 or Fluorescein-labeled plasmid DNA (2.7 kb, double stranded, circular). They are designed to facilitate visualization of transfected plasmid DNA and assess delivery efficiency, both in vitro and in vivo, using direct fluorescent microscopic visualization of transfected cells

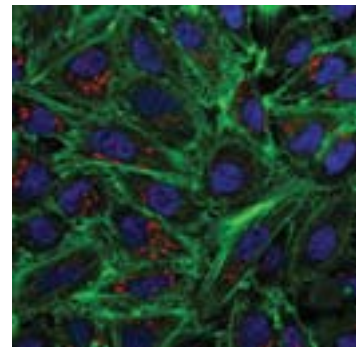
Label IT® RNAi Delivery Controls

The Label IT® RNAi Delivery Controls consist of a CyTM3 or Fluorescein-labeled short RNA duplex that has the same length, charge, and configuration as standard siRNA. The sequence of this RNA is not homologous to any known mammalian gene and is not known to cause off-target effects. It is designed to facilitate visualization and assessment of the delivery efficiency of dsRNA oligonucleotides, both in vitro and in vivo, using direct fluorescent microscopic visualization of transfected cells.

Description	Cat.#	Qty
Label IT® Plasmid Delivery Controls-Fluorescein	GS0400	10 µg
	GS0401	100 µg
Label IT® Plasmid Delivery Controls-Cy3	GS0410	10 µg
	GS0411	100 µg
Label IT® RNAi Delivery Controls-Fluorescein	BN1520	10 µg
	BN1521	100 µg
Label IT® RNAi Delivery Controls-Cy3	BN1530	10 µg
	BN1531	100 µg



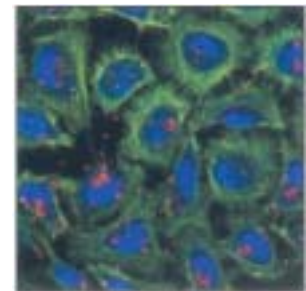
HeLa cells were transfected with Label IT® siRNA Tracker Fluorescein-labeled siRNA and TransIT-TKO® Reagent in complete media for 24 hours. Cells were then fixed, counterstained with TO-PRO®-3 to stain the nuclei (BLUE) and Alexa Fluor® 546 Phalloidin (Invitrogen) to stain the actin (RED). The confocal image was acquired on a Zeiss LSM 510 Confocal Microscope.



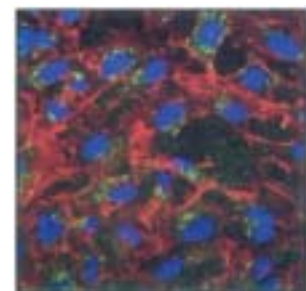
HeLa cells were transfected with Label IT® siRNA Tracker CyTM3-labeled siRNA and TransIT-siQUEST™ Reagent in complete media for 24 hours. Cells were then fixed, counterstained with TO-PRO®-3 to stain the nuclei (BLUE) and Alexa Fluor® 488 Phalloidin (Invitrogen) to stain the actin (GREEN). The confocal image was acquired on a Zeiss LSM 510 Confocal Microscope.

Related products for tissue preparation

Description	Cat.#	Qty
HistoChoice	672842	1 l
Fluoromount	FP-483331	25 ml



The visualization of Label IT® Plasmid Delivery Control.



Visualization of Label IT® RNAi Delivery Control.