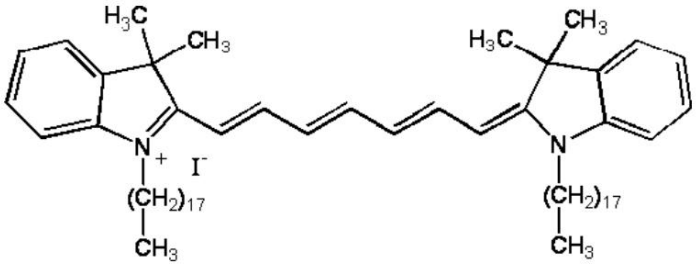
DiR

Cat: D9320
Specification:5mg /10mg
Storage: Store at -20℃.

Product Information

English name：(DiIC18(7)1,1'-dioctadecyltetramethyl indotricarbocyanine Iodide)
Molecular Formula： $C_{63}H_{101}IN_2$
Molecular Weight： 1013.39
Maximum absorption wavelength/emission wavelength: 748/780 nm
Recommended filter setting: 710 Ex/760 Em
Molecular Structure：



Introduction

DiR dye is a lipophilic near-infrared cyanine fluorescent dye that can be used to stain cell membranes and other lipid-soluble biological structures. The long chain of 18 carbons is inserted into the cell membrane to stain the cell, while the transfer of dye between cells is negligible. DiR is a near-infrared fluorescence emitter that can penetrate cells and tissues and is used for tracking in live imaging. DIR generally performs fluorescence staining on primary cells and can perform in vivo imaging distribution observation (such as the following cells embryonic stem cells, bone marrow derived stem cells, adipose derived stem cells, lymphocytes and erythrocytes).

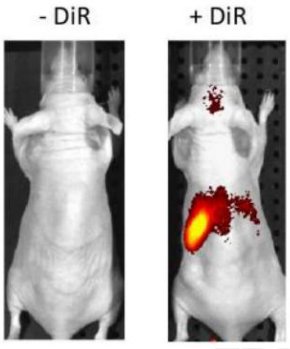


Figure 1. T-cells isolated from the spleen were fluorescently stained with DiR and i.v. injected (5×10^6 cells/mouse) into a Nu/Nu mouse. Images above taken 24hrs post injection with IVIS Spectrum show cells homing to the spleen.

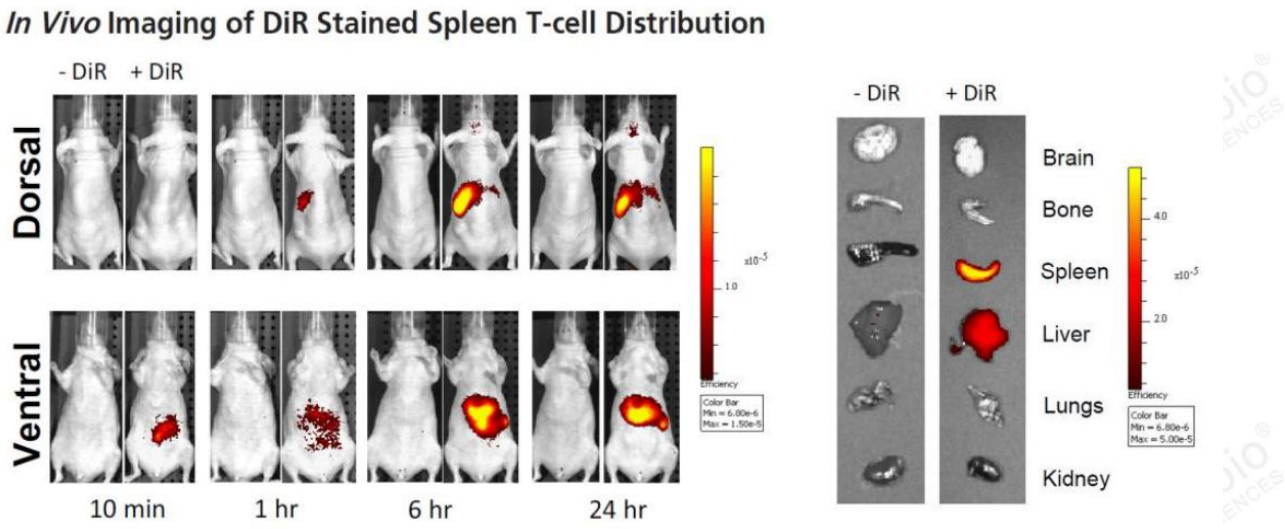


Figure 2. DiR stock was prepared by dissolving 25 mg in 3 mL ethanol. Working solution of 320 μg/mL was prepared by diluting 199 μL of stock solution in 5 mL PBS. T-cells isolated from the spleen were incubated with 320 μg/mL DiR. After 30 min incubation, cells were spun down for 3 min at 1000 rpm at 4 ºC resulting in a blue pellet. Cells were washed twice in PBS and injected intravenously (5×10^6 cells/mouse). Control group was injected with 5×10^6 cells/mouse in PBS. Mice were imaged with IVIS Spectrum at 10 min, 1hr, 6hr and 24 hrs post injection. Ideal filter set for DiR imaging is 710 nm excitation and 760 nm emission. Mice were imaged dorsally as well as ventrally at all time points. Brain, bones, spleen, liver, lungs and kidneys were harvested for ex vivo imaging 24 hrs post injection. Non-invasive in vivo imaging showed the homing process of injected T cells to the liver and spleen in real time, which was confirmed by ex vivo imaging.

Reference:

Kalchenko et al., Use of lipophilic near-infrared dye in whole-body optical imaging of hematopoietic cell homing. Journal of Biomedical optics, September/October 2006, Vol 11(5).

Note

1. Unless otherwise specified, the biochemical reagents produced by our company are generally non-sterile packaged. If they are to be used for cell experiments, please conduct pretreatment in advance.
2. Once dissolved, please store the solution in separate containers to avoid product degradation caused by repeated freezing and thawing.
3. The product information is for reference only. If you have any questions, please call 400-968-6088 for consultation.
4. The products are all for scientific research use only. Do not use it for medical, clinical diagnosis or treatment, food and cosmetics, etc. Do not store them in ordinary residential areas.
5. For your safety and health, please wear laboratory clothes, disposable gloves and masks to operate.