DiR小动物活体成像荧光试剂

产品名称: DiR

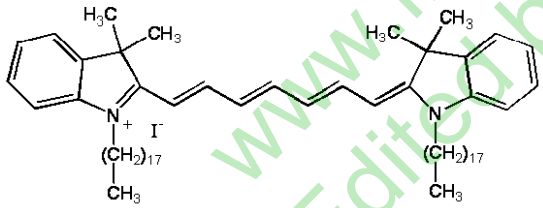
(DiIC18(7)1,1'-dioctadecyltetramethyl indotricarbocyanine Iodide)

分子式/分子量: $C_{63}H_{101}IN_2$=1013.4

最大吸收波长/发射波长: 748/780 nm

推荐滤光片设置: 710 ex/760 em

结构式:



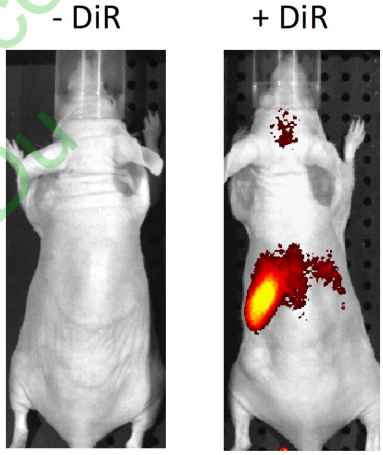


Figure 1. T-cells isolated from the spleen were fluorescently stained with DiR and i.v. injected (5x10^6 cells/mouse) into a Nu/Nu mouse. Images above taken 24hrs post injection with IVIS Spectrum show cells homing to the spleen.

DiR染料是亲脂性的近红外花菁荧光染料，可以用来染细胞膜和其它脂溶性生物结构。18个碳的长链插入细胞膜中从而对细胞进行染色，而细胞间的染料转移可以忽略不计。DiR的发射的是近红外荧光可以穿透细胞和组织，在活体成像中用来示踪。

DIR一般对原代细胞进行荧光染色并可进行活体成像分布观察, (例如下列细胞embryonic stem cells, bone marrow derived stem cells, adipose derived stem cells, lymphocytes and erythrocytes),

***In Vivo* Imaging of DiR Stained Spleen T-cell Distribution**

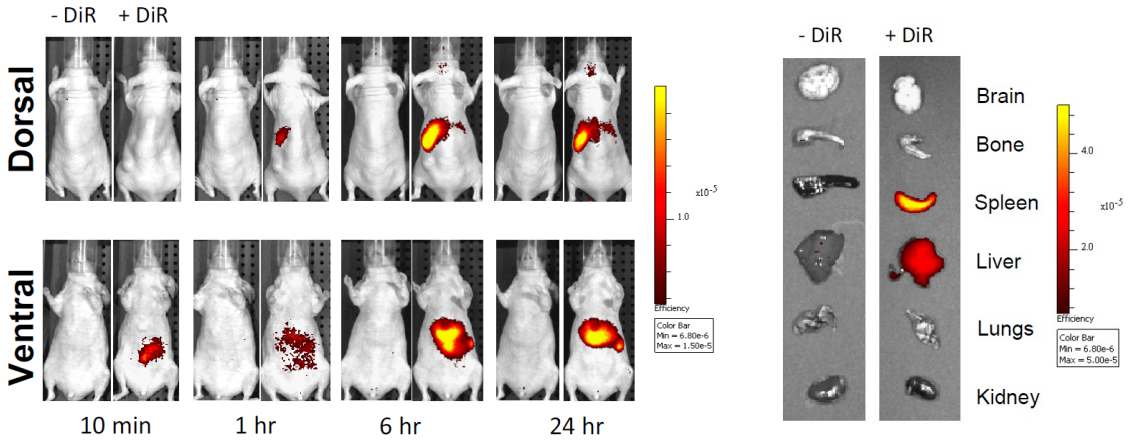


Figure 2. DiR stock was prepared by dissolving 25 mg in 3 mL ethanol. Working solution of 320 µg/mL was prepared by diluting 199 µL of stock solution in 5 mL PBS. T-cells isolated from the spleen were incubated with 320 µg/mL DiR. After 30 min incubation, cells were spun down for 3 min at 1000 rpm at 4 °C resulting in a blue pellet. Cells were washed twice in PBS and injected intravenously (5 x 10^6 cells/mouse). Control group was injected with 5 x 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.

参考文献: 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).