



CDnir7

P007
1 μmol

- **Known Property** Activated macrophage probe
- **Application** Immunofluorescence
- **Cell selectivity mechanism:** unknown
- **Storage**
 - ① Delivery: Room Temperature
 - ② Dried compound: 4 °C or -20 °C
 - ③ Compound solution: 4 °C or -20 °C

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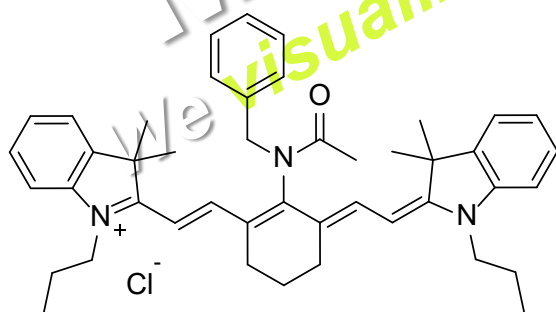
General Use Guide

More than 1/100 dilution of 10mM of DMSO stock solution is essential

For biomedical use to avoid DMSO concentration higher than 1%.

Working concentrations for specific applications should be determined by the investigator.

It is recommended to use up the buffer diluted solution within one day. The compound may be decomposed or precipitated out from buffer solution.



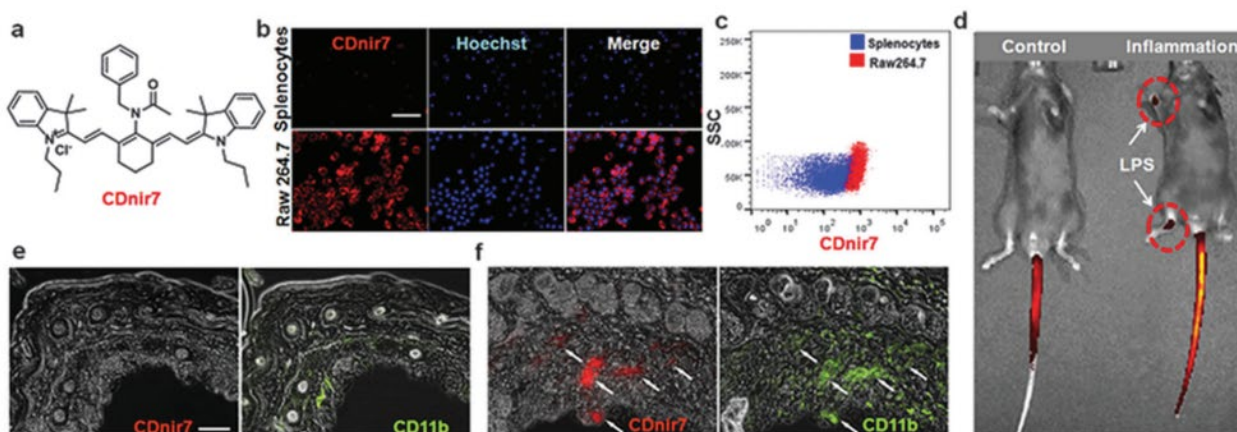
Molecular Weight

688.4 ($\text{C}_{45}\text{H}_{54}\text{ClN}_3\text{O}$)

$\lambda_{\text{ex}} / \lambda_{\text{em}}$

806 / 821 nm

CDnir7 (Compound of Designation near infra red 7) is a macrophage selective probe with a long wavelength of near infrared (NIR) excitation and emission. With the deep tissue penetration optical property, **CDnir7** visualize the inflammation site in mouse paw (LPS injection model) using fluorescence molecular tomography. **CDnir7** is also active probe for photoacoustic imaging and breast tumor in mouse model could be visualized by multi-spectral optoacoustic tomography (MSOT). **CDnir7** was also successfully applied for Alzheimer disease mouse brain imaging through MSOT.



Discovery of the NIR fluorescence probe CDnir7 and in vivo imaging of inflammation. (a) Chemical structure of CDnir7. (b) Fluorescence images of mouse splenocytes and the macrophage cell line Raw 264.7. (c) Flow cytometry dot plot images of splenocytes and Raw 264.7. (d) CDnir7 detection in inflamed regions of live mouse paws using the IVIS spectrum. LPS (1 mg mL⁻¹, 200 μ L) was injected into the right paws 2 days prior to the imaging. CDnir7 (100 μ M, 250 μ L, 1% PEG and 0.1% Tween 20 in PBS) was injected via the tail vein and the image was obtained 30 minutes later. (e) Immunostaining images of CDnir7 and CD11b using the left rear foot (control region, e) and the right rear foot (f). Scale bar: 50 μ m

- Related probes: CDg16

Reference

1. **A macrophage uptaking near-infrared chemical probe CDnir7 for in vivo imaging of inflammation**, Kang, N. Y.; Park, S. J.; Ang, X. W.; Samanta, A.; Driessen, W. H.; Ntziachristos, V.; Vasquez, K. O.; Peterson, J. D.; Yun, S. W.*; Chang, Y. T.* Chem. Commun. 2014, 50, 6589-6591.
2. **Visualizing Alzheimer's Disease Mouse Brain with Multispectral Optoacoustic Tomography using a Fluorescent probe, CDnir7**, Park, S. J.; Ho, C. J. H.; Arai, S.; Samanta, A.; Olivo, M.; Chang, Y. T.* Sci. Rep. 2019, 9, 12052.