XenoLight RediJect 2-DG-750 Probe

XenoLight RediJect 2-DeoxyGlucosone (DG)-750 is a fluorescent probe for in vivo targeting of tumors that typically exhibit elevated glucose uptake rate in comparison to surrounding tissues. To achieve maximum glucose targeting and enhanced tumor uptake, the probe has been designed to contain four 2-DG molecules per dye molecule. As indicated in Figure 1, RediJect 2-DG-750 probe showed specific accumulation to LL-2 tumors shortly after delivery. In addition, specific tumor labeling with the RediJect 2-DG-750 probe has also been demonstrated with Breast (MDA-MB-231) Prostate (PC-3M) and Lung (NCI-H460) tumors, further validating the utility of this probe as a generic fluorescence reagent for in vivo tumor targeting.

- Novel ready-to-use probe to monitor glucose uptake in vivo non-invasively
- Dispensed to image 5 animals (explorer kit) or 20 animals (standard kit)
- Maximum glucose targeting and enhanced tumor uptake
- In vivo imaging quality, validated on IVIS imaging systems

Properties:

Color and Form: Clear blue colored solution in 1x PBS
Concentration: 10 nmoles/100 μL
Shipping Conditions: The kit will be shipped in cold gel packs to avoid temperature variations
Volume per Vial:
Explorer kit: 1 sterile amber vial containing 600 μL of 10 nmoles/100 μL probe
Standard kit: 4 sterile amber vials containing 600 μL of 10 nmoles/100 μL probe
Storage and Handling: Store the 2-DG-750 probe at 4 °C and protect from light. For in vivo imaging studies we recommend an intravenous injection of 100 μL/mouse. Allow the probe to warm up to room temperature before injection in an animal.

DYE CHARACTERISTICS:

Color and Form:
Peak Excitation: 750 nm
Peak Emission: 780 nm
Ideal IVIS Spectrum Filter Sets:
Ex 745 nm/Em 820 nm
Alternatively you can also use the spectral unmixing filter sets using imaging wizard program in the Living Image® software.

Available Kits
P/N 760561- Explorer Kit (Image 5 animals/kit)
P/N 760562- Standard Kit (Image 20 animals/kit)
P/N 760567- 2DG-750 Control Dye
**In Vivo Detection of Glucose Uptake with the 2-DG-750 Probe**

![Image of glucose uptake detection with 2-DG-750 probe](image)

**Figure 1.** C57 BL/6 albino mice with s.c. with 1x10^6 LL2-luc tumor cells. At 2 weeks, tumors were approximately 200 mm³. Mice were intravenously injected with 10 nmole of 2-DG-750 probe or control 750 dye and imaged at 3, 7, 24 and 72 hours with IVIS Spectrum (Ex745 nm/Em820 nm). Mice injected with the 2-DG-750 probe showed specific accumulation of the probe to the tumor sites. Quantification showed a peak signal at 3 hours and the tumor remained labeled at 72 hours. In comparison, mice that were injected with 750 control dye showed no specific targeting at the tumor site at 3 hours. Bioluminescence imaging showed similar luciferase activity in all the mice correlating with tumor volume.

**In Vivo Detection of Bone metastasis with 2-DG-750**

![Image of bone metastasis detection with 2-DG-750 probe](image)

**Figure 2.** Nu/nu mice were injected with MDA-MB-231-luc-D3H2Ln cell line by intracardiac injection. Few weeks post implantation of cells bioluminescence imaging shows cells metastasizing to the bone (A). RediJet 2-DG-750 probe was injected intravenously and mice were imaged 3 hours post injection. The fluorescence image shows clear targeting to the tumor (B). MicroCT images taken by Quantum FX clearly shows bone damage on the metastatic site (C).

For laboratory use only. These products are intended for animal research only and not for use in humans.

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