Product Number
926-09375

Storage: -20°C
prior to reconstitution;
4°C after reconstitution

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BrightSite™ Small Animal Imaging Agents

IRDye® 800CW BoneTag™ Optical Probe

Description

Calcium-chelating compounds have been used effectively for the detection of bone mineralization, growth, and morphological changes, including tetracycline derivatives, xylenol orange, alizarin, calcein, and fluorescein.[1-3]

These characteristics have been used to produce a near infrared (NIR) optical bone marker for small animal imaging. By conjugating the BoneTag to IRDye 680RD and IRDye 800CW, we have extended the effective fluorescence signal detection to the NIR region without affecting the compound's ability to function as a marker of the mineralization process.

Using MC3T3-E1 (osteoblasts) in *in vitro* cell-based assays, the IRDye 800CW BoneTag shows specific binding characteristics. *In vivo* testing of IRDye 680RD and IRDye 800CW BoneTag optical probes are effective for skeletal labeling for imaging, which is unabated several weeks post-administration.

The ability to visualize bone anatomy/structures for an extended period facilitates the use of the bone targeting agent in conjunction with a second optical agent specific for a primary target (i.e., tumor tissue).

Material

The IRDye 800CW BoneTag solution was passed through a 0.2 µm nylon membrane into a sterile polypropylene tube and lyophilized. The product is supplied as a lyophilized powder from water in four tubes. The recommended individual dose per mouse (body weight ~25 g) will be approximately 2 nmol. Each of four tubes contains 10 nmol of IRDye 800CW BoneTag.

IRDye 800CW Properties (in 1X PBS)

- Absorption maximum: 780 nm
- Emission maximum: 795 nm
- Appearance: Lyophilized solid

Storage and Handling

Protect from light. Upon receipt, immediately store at -20°C prior to reconstitution. This product is stable in the lyophilized state for 3 months at -20°C. Reconstituted product should be used immediately.

Directions for Use

- Reconstitute material in 0.5 ml of sterile 1X PBS for a final concentration of 0.02 nmol/µL. If desired, filter sterilize the solution through a 0.2 µm filter system.
- Recommended administration: Inject 2 nmol (100 µL) intravenously via the tail vein or intraperitoneally.
- *In vivo* Imaging: It is important that unretained agent be allowed to clear from the animal's circulation prior to imaging. Suggested initial time frame for imaging is 24 hours post-injection. This agent will be visible for extended lengths of time (up to 6 weeks) post-injection. For best results, determine the optimal imaging time empirically.

Precautions

The probe is processed through the kidneys and excreted through the bladder.

References

[1]Rahn, B. A. 2003. *European Cells and Materials* 5 (Suppl. 2):41.
[2]Malouvier, A., et al. 1993. *Med. Sci. Res*. 21:423-425.
[3]Lee, T. C., et al. 2003. *J. Anat*. 203:161-172.

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