Product Number
926-09889

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

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Updates available at:
http://biosupport.licor.com

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BrightSite™ Small Animal Imaging Agents

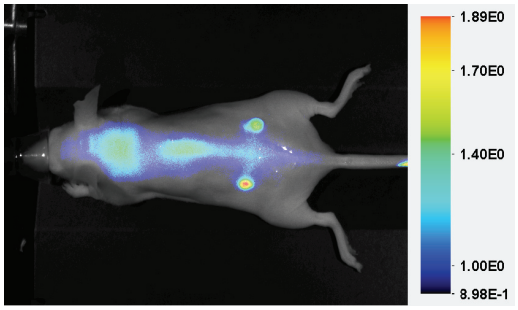
IRDye® 800CW RGD Optical Probe

Description

IRDye 800CW RGD Optical Probe from LI-COR® Biosciences is a near-infrared labeled imaging agent specifically designed to target integrins. Integrins are cell surface hetero-dimeric glycoproteins important in cell adhesion and signal transduction. This receptor class is involved in tumor growth, tumor invasiveness, metastasis, tumor-induced angiogenesis, inflammation, osteoporosis, and rheumatoid arthritis[1-6].

The recognition motif, RGD (Arg-Gly-Asp), is a tripeptide sequence that binds integrin receptors including $\alpha_v\beta_3$. Interest in using a labeled RGD peptide ligand for studying and/or monitoring diseases related to $\alpha_v\beta_3$ receptor over-expression is increasing. Several groups have fluorescently labeled RGD and successfully used it for *in vitro* and *in vivo* imaging[7,8]. *Cyclo*-(Arg-Gly-Asp-D-Phe-Lys) was conjugated to IRDye 800CW for use as a tumor imaging agent in mice.

IRDye 800CW RGD has been characterized for *in vitro* and *in vivo* use with a number of tumor cell lines which include U87 (glioblastoma), A431 (epidermoid carcinoma), and PC3M-LN4 and 22Rv1 (prostate carcinomas).



A nude mouse bearing two tumors in the hip region (U87 and A431) was imaged with the Pearl® Imager 24 hours after receiving 1 nmole IRDye 800CW RGD intravenously. The 800 nm signal is presented in pseudo color and overlaid on a white-light image of the mouse.

Material

The IRDye 800CW RGD Optical Probe solution was passed through a 0.2 µm nylon membrane into a sterile polypropylene tube and lyophilized. The reagent is supplied as a lyophilized powder. The recommended individual dose per mouse (~25 grams body weight) is 1 nmole. For best results, determine the optimal dose for each tumor model. Each tube contains 15 nmole of IRDye 800CW RGD Optical Probe.

IRDye 800CW Properties (In 1X PBS)

- Absorption maximum: 776 nm
- Emission maximum: 792 nm

Storage and Handling

Upon receipt, immediately store at -20°C prior to reconstitution. When stored properly, this product is stable in the lyophilized state for up to 3 months. After reconstitution, store at 4°C for a maximum of 1 month. ***Protect from light.***

Continued

Directions For Use

- Resuspend IRDye® 800CW RGD in 0.5 mL sterile 1X PBS.
- Transfer to a sterile 2.0 mL tube and add an additional 1 mL 1X PBS.
  Final concentration = 0.01 nmole per µL.
- To ensure sterility, filter through a 0.2 µm nylon membrane.
- Recommended administration: Inject 1 nmole (100 µL) intravenously via the tail vein.
- *In vivo* Imaging: Optimal signal-to-noise ratios occur 24-48 hours post injection. For best results, determine the optimal imaging time point for each tumor model.

Precautions

The probe is processed through the liver and kidneys, with excretion via the bladder, which may increase background when imaging in the abdominal region.

References

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8. Chen X, Conti PS, Moats RA. 2004. In vivo near-infrared fluorescence imaging in integrin $\alpha_v\beta_3$ in brain tumor xenografts. *Cancer Res* 64:8009-8014.