

Product Number
926-09888

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

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BrightSite
Small Animal Imaging Agents

IRDye® 680RD RGD Optical Probe

Description

IRDye 680RD RGD Optical Probe from LI-COR® Biosciences is a near-infrared labeled imaging agent specifically designed to target integrins. Integrins are cell surface heterodimeric 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 arthritis¹⁻⁶.

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 680RD for use as a tumor imaging agent in mice.

IRDye 680RD RGD has been characterized for *in vitro* and *in vivo* use with a number of tumor cell lines, including U87 (glioblastoma).

Material

The reagent is supplied as a lyophilized powder. The recommended individual dose per mouse (~25 grams body weight) is 2 nmole. For best results, determine the optimal dose for each tumor model. Each tube contains 25 nmole of IRDye 680RD RGD Optical Probe.

Properties (In 1X PBS)

- Absorption maximum: 673 nm
- Emission maximum: 695 nm
- Appearance: Lyophilized solid

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 3 months. After reconstitution, store at 4°C.

Reconstituted material should be used within 2 weeks. **Protect from light.**

Directions for Use

Reconstitute material in 1.25 mL of sterile 1X PBS to a final concentration of 2 nmol/100 μ L. To ensure sterility, filter through a 0.2 μ m nylon membrane.

Recommended administration: Inject 2 nmol 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.
- *In vitro* cell-based assays: Recommend use of a microtiter plate with low fluorescence at 680 nm, such as Corning® Incorporated, part number 3603 (96-well Assay plate, black plate, clear bottom with lid).

Precautions

The probe is processed through the gall bladder, intestinal tract, and kidneys, which may increase background when imaging in the abdominal region. It is recommended to evaluate clearance of probe in each animal model.

References

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