

Why Target EGFR

IRDye® 800CW EGF Optical Probe is a near-infrared (NIR) labeled recombinant human epidermal growth factor (EGF). Epidermal growth factor receptor (EGFR) is one of a family of receptor tyrosine kinases found on the surface of epithelial cells, to which EGF binds. Many types of cancer cells have abnormally high EGFR levels on the cell surface (Table 1). *In vivo* assays of EGF binding have proven effective in monitoring specific solid tumor models that exhibit over-expression of EGFR²⁻⁶. EGF conjugated to LI-COR's IRDye 800CW NIR fluorophore provides a versatile probe that can be used for *in vitro* and *in vivo* assays, as well as whole organ and tissue section analysis.

Tumor Type	% of Tumors Over-Expressing EGFR
Head and Neck	80-100
Renal Cell	50-90
Non-small-cell Lung	40-80
Glioma	40-50
Ovarian	35-70
Bladder	31-48
Pancreatic	30-50
Colon	25-77
Breast	14-91

Table 1. Frequency of elevated EGFR expression in different types of epithelial tumors¹.

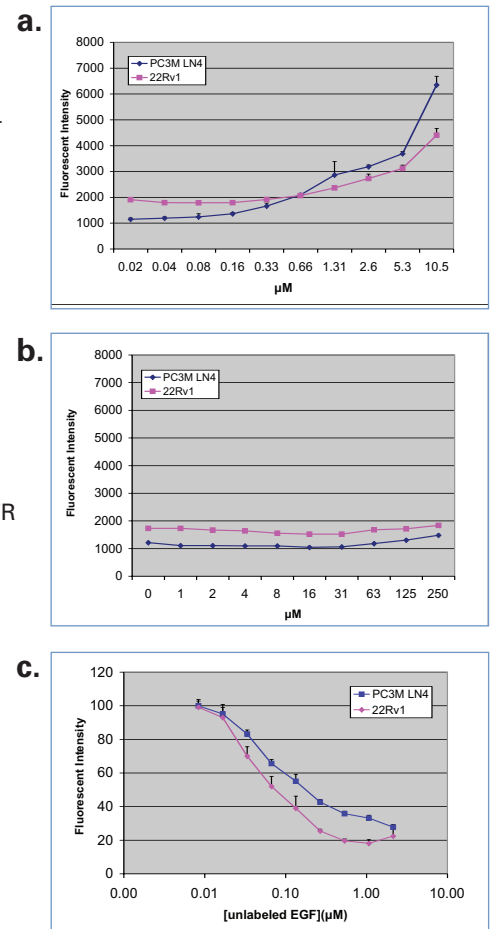
Probe Specificity

In-Cell Western assays on the LI-COR Odyssey® and Aeries® Infrared Imaging Systems are used to determine binding specificity of the probe *in vitro* for various cell lines (Figure 1). IRDye 800CW EGF has been characterized in A431 (squamous epithelial carcinoma, Figure 2), and PC3M-LN4 and 22Rv1 (human prostate adenocarcinoma) cell lines that over-express EGFR.

In vitro Probe Specificity

Figure 1. Two different cell lines known to over-express the EGFR were characterized by evaluating:

- (A) binding of IRDye 800CW EGF;
- (B) IRDye 800CW only;
- (C) competition assay using unlabeled EGF to compete for EGFR sites.



In vivo Probe Specificity

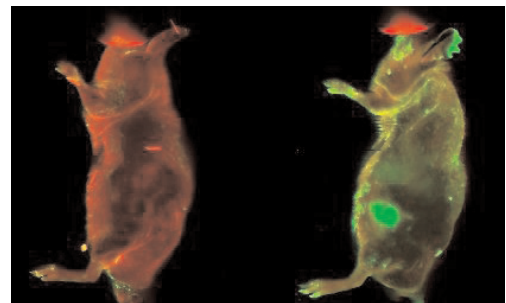


Figure 2. Two athymic Nu/Nu tumor-bearing mice were injected with either 0.9% saline (left) or 1 nmol IRDye 800CW EGF (right) 72 hours prior to imaging with the LI-COR Odyssey Infrared Imaging System.

Advantages of Near-Infrared Optical Probes

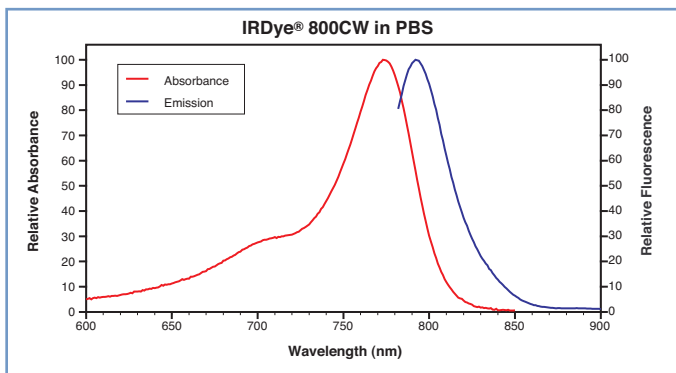
- Very high signal-to-noise ratio.
- Low NIR autofluorescence from tissues, cells, biological materials, and drug compounds.
- IRDye 800CW absorption/emission near 800 nm matches a NIR absorption minima for bodily fluids and tissues, resulting in excellent tissue penetration.

Specifications

Description: Recombinant EGF polypeptide containing 54 amino acid residues (molecular weight = 6.2 kDa) conjugated to the LI-COR IRDye 800CW NIR fluorophore.

Properties (in 1X PBS):

- Absorption maximum: 774 nm
- Emission maximum: 789 nm



Ordering Information

Item	Part No.
IRDye 800CW EGF Optical Probe926-08446

Related Products

IRDye 800CW Labeling Kit928-38020
IRDye 800CW NHS Ester Dye (0.5 mg)929-70020
IRDye 800CW NHS Ester Dye (5.0 mg)929-70021
Odyssey Infrared Imaging SystemInquire
Odyssey MousePOD™ Accessory9201-MP

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