Product Number
926-80000
(2 x 250 nmol)

Storage: -20 °C

December, 2013

Updates available at:
http://www.licor.com/packinserts

Doc # 988-13229

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ROSstar™ 800CW Probe

Product Description

ROSstar 800CW is a hydrocyanine[1-8] based probe designed to detect extracellular reactive oxygen species (ROS) *in vivo,* specifically superoxide and hydroxyl radicals. The cell-impermeable probe can be used to detect oxidative stress using fluorescence imaging when using instrumentation with appropriate excitation and detection capabilities.

Properties

Concentration: 1 nmol/μL (after reconstitution)

Excitation Wavelength: 780 nm

Emissions Wavelength: 810 nm

Form: Lyophilized

Pack Size: 2 x 250 nmol

Appearance: yellow to orange solid

Storage and Handling

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

Precautions

- ROSstar 800CW is light- and air-sensitive
- Open just before use – ***Discard unused material***

General Guidelines for Use

- Reconstitute material (1 tube containing 250 nmol) in 250 μL sterile water or 1x PBS for a final concentration of 1.0 nmol/μL. If desired, filter sterilize the solution through a 0.2 μm filter system prior to animal injection.
- The recommended individual dose per mouse (body weight ~20 g) will range from 30 - 50 nmol.
  The dose may need further optimization, depending upon factors including animal model, mode of administration, instrument used for detection, and specialized applications.
- Image 15 - 30 minutes after the injection of ROSstar 800CW.
  Imaging optimization may be needed, depending upon factors including animal model, mode of administration, instrument used for detection, and specialized applications
- For further information and applications of hydrocyanines in *in vivo* imaging of ROS, see references 1 - 8.

Hydrocyanine References:

1. Kundu, K.; Knight, S. F.; Willett, N.; Lee, S.; Taylor, W. R.; Murthy, N. “Hydrocyanines: a class of fluorescent sensors that can image reactive oxygen species in cell culture, tissue, and *in vivo*”, *Angewandte Chemie, International Edition* (2009), *48(2)*, 299-303.
2. Withers, N. “Fluorescence imaging: Go with the glow”, *Nature Chemistry*, (19 December 2008).
3. Kundu, K.; Knight, S. F.; Lee, S.; Taylor, W. R.; Murthy, N., “A Significant Improvement of the Efficacy of Radical Oxidant Probes by the Kinetic Isotope Effect”, *Angewandte Chemie, International Edition* (2010), *49(35)*, 6134-6138.
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5. Kim, J. Y.; Choi, W.; Kim, Y. H.; Tae, G. “Highly Selective *In Vivo* Imaging of Tumor as An Inflammation Site by ROS Detection Using Hydrocyanine-Conjugated, Functional Nano-Carriers”, *Journal of Controlled Release* (2011), *156*, 398-405.
6. Xie, L.; Lin, A.; Kundu, K.; Murthy, N.; Lavenston, M.; Guldberg, M. “Quantitative Imaging of Cartilage and Bone Morphology, Reactive Oxygen Species, and Vascularization in A Rodent Model of Osteoarthritis”, *Arthritis and Rheumatism*, (2012), *64(6)*, 1899-1908.
7. Goodson, P.; Kumar, A.; Jain, Lucky; Kundu, Kousik; Murthy, Niren; Koval, Michael; Helms, My N. “Nadph oxidase regulates alveolar epithelial sodium channel activity and lung fluid balance in vivo via O^{-2} signaling”, *American Journal of Physiology* (2012), *302(2, Pt. 1)*, L410-L419.
8. Magalotti, S.; Gustafson, T. P.; Cao, Q.; Abendschein, D. R.; Pierce, R. A.; Berezin, M. Y.; Akers, W. J. Evaluation of Inflammatory Response to Acute Ischemia Using Near-Infrared Fluorescent Reactive Oxygen Sensors”, *Molecular Imaging and Biology*, (2013),*15(4)*,423-430.