viscover

NiraWave™ Rocker

Optical imaging agent for pre-clinical imaging

1 vial (5 x 100 µL injections) # 130-095-158
5 vials (25 x 100 µL injections) # 130-095-159

Contents

1. Description

Components **2 mg NiraWave™ Rocker,** optical imaging agent; **1 mL NiraWave™ Rocker,** reconstitution medium or **5 × 2 mg NiraWave™ Rocker,** optical imaging agent; **5 × 1 mL NiraWave™ Rocker,** reconstitution medium.

Capacity **5 × 100 µL injections** after reconstitution or **25 × 100 µL injections** after reconstitution.

Product format NiraWave Rocker is supplied as a lyophilized preparation and a reconstitution medium. After reconstitution an isotonic indocyanine green (ICG) solution is formed having an ICG concentration of 120 mg/L.

Appearance Green lyophilizate and clear, colorless liquid after homogenization. Reconstituted: Clear, green liquid.

Storage Store protected from light at 2–8 °C. Do not freeze. The expiration date is indicated on the vial label.

For laboratory and animal research use only. Warning: Not for human or animal therapeutic or diagnostic use. Make sure to comply with all laws and regulations governing research on animals.

1.1 Background information

NiraWave Rocker is a nanoparticulate near-infrared (NIR) fluorescence imaging agent specifically formulated for pre-clinical optical imaging (OI).
It shows absorption and emission (fluorescence) in the NIR spectral range allowing for an increased tissue penetration.
Upon intravenous injection, NiraWave Rocker circulates in the blood stream for a prolonged time and accumulates in tumors via the rocker-switch mechanism. NiraWave Rocker is excreted mainly by the liver and spleen.

1.2 Applications

NiraWave Rocker is indicated for use in OI of small animals, for example mice, to facilitate the visualization of primary tumors and metastasis. Examples include tumor characterization, tumor progression and therapy monitoring.

1.3 Physico-chemical properties

Emission wavelength	Excitation wavelength
830 nm	660 - 790 nm

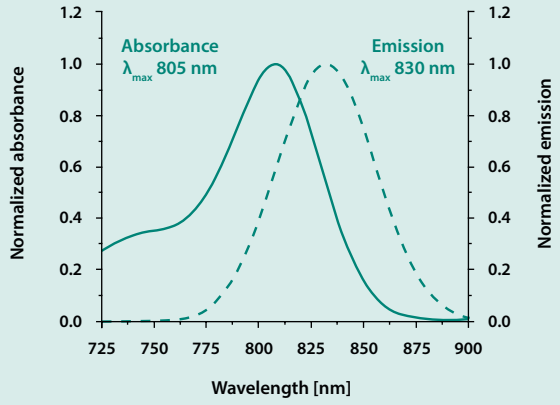

Figure 1: Normalized absorption and emission spectra of NiraWave Rocker in plasma.

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nanoPET

***nanoPET Pharma* GmbH**
Robert-Koch-Platz 4, 10115 Berlin, Germany
Phone +49 30 890 49 74 - 0
Fax +49 30 890 49 74 - 99
imaging@nanopet-pharma.com

www.viscover.berlin

1.4 Requirements

- Sterile syringes and needles (27–30 G)

  Note: To allow sufficient volume for 5 × 100 µL injections per vial, the syringe/needle dead volume should be kept below 70 µL.
  Tip: Use insulin or tuberculin syringes.

- 70 % ethanol

2. Protocol

2.1 Preparation

- Read the entire protocol before starting.
- Homogenize NiraWave Rocker reconstitution medium by warming (50 °C) and gentle mixing.
- To reconstitute the NiraWave Rocker lyophilizate, inject 850 µL of the NiraWave Rocker reconstitution medium into the vial. Gently agitate the vial until a clear, green solution is obtained.
- For a mouse weighing 20–30 g the typical injection volume is 100 µL corresponding to a dose of 0.48 mg ICG/kg body weight (for a 25 g mouse).

  Note: Standard animal-handling procedures and local regulations must be followed.

2.2 Injection

- Reconstitute the NiraWave Rocker lyophilizate prior to injection as described in section 2.1.
- Disinfect the septum with 70% ethanol. Let septum dry.
- Warm the mouse tail to dilate the veins and enhance their visibility.
- Inject NiraWave Rocker (typically 100 µL) via the lateral tail vein of the mouse.

  Note: NiraWave Rocker contains no preservatives. Avoid microbial contamination and discard any unused material after 24 hours.

2.3 Imaging

- Follow the imaging protocol as recommended by the manufacturer of your imaging system.
- To maximally excite NiraWave Rocker, the excitation wavelength must be at least 40 nm below the emission maximum of the dye.
- The recommended excitation and emission wavelengths of NiraWave Rocker are noted in section 1.3.
- For vascular studies imaging should be performed immediately after injection.
- For imaging of tumors a minimal waiting period of 12 hours is recommended.

Find examples of NiraWave Rocker-enhanced optical images at **www.viscover.berlin**.

3. References

1. Hess, M. *et al.* (2012) Long-term tumor visualization by NiraWave™ Rocker. www.viscover-online.de/data-gallery/oi/

4. Related products

NiraWave™ C	# 130-095-154, # 130-095-155
NiraWave™ M	# 130-095-156, # 130-095-157
NiraWave™ nano 780	# 130-095-695, # 130-095-693

A comprehensive product portfolio for the imaging modalities MRI, CT, US, OI, SPECT, and PET is available at **www.viscover.berlin**.

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Manufacturer: *nanoPET Pharma* GmbH, Berlin, Germany.

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Robert-Koch-Platz 4, 10115 Berlin, Germany
Phone +49 30 890 49 74 - 0
Fax +49 30 890 49 74 - 99
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