viscover

ExiTron™ nano 6000

CT contrast agent for pre-clinical imaging

1 vial (5 x 100 µL injections)	# 130-095-146
5 vials (25 x 100 µL injections)	# 130-095-147

Contents

1. Description

Components **850 µL ExiTron™ nano 6000,**
CT contrast agent
or
5 × 850 µL ExiTron™ nano 6000,
CT contrast agent.

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

Product format ExiTron nano 6000 consists of a radiopaque particulate agent supplied as a sterile suspension.

Appearance White liquid.

Storage Store 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

ExiTron nano 6000 is an alkaline earth metal-based nanoparticulate contrast agent specifically formulated for pre-clinical computed tomography (CT).
It shows strong X-ray absorption due to the high metal load of the particles.
Upon intravenous injection, ExiTron nano 6000 circulates in the blood stream and is taken up by the Kupffer cells (macrophages of the liver). It accumulates particularly in the liver and spleen and provides long-term X-ray contrast.

1.2 Applications

ExiTron nano 6000 is indicated for use in CT of small animals, for example mice, to facilitate the the visualization of the liver and spleen. Examples include imaging of liver tumors and metastases.

1.3 Physico-chemical properties

Mean hydrodynamic diameter: 110 nm.

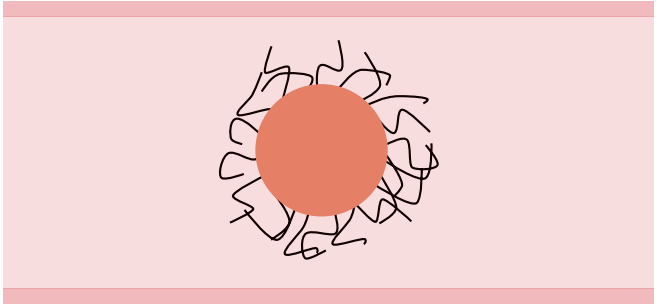

Figure 1: Schematic diagram of an ExiTron nano 6000 nanoparticle.

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.
  Tip: For optimum device settings perform initial studies in a suitable imaging phantom.
- The contrast agent is ready for injection as provided.
- For a mouse weighing 20–30 g the typical injection volume is 100 µL corresponding to a dose equivalent to 640 mg iodine/kg body weight (for a 25 g mouse).
  Note: Standard animal-handling procedures and local regulations must be followed.

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2.2 Injection

- Vortex the vial to ensure thorough mixing.
- Disinfect the septum with 70% ethanol. Let septum dry.
- Warm the mouse tail to dilate the veins and enhance their visibility.
- Inject ExiTron nano 6000 (typically 100 µL) via the lateral tail vein of the mouse.

  Note: ExiTron nano 6000 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.
- Taking a pre-contrast image is recommended.
- Prior to liver imaging a waiting period of 30–60 minutes is recommended. Liver imaging can be performed up to several weeks after injection.

Find examples of ExiTron nano 6000-enhanced CT images at **www.viscover.berlin**.

3. References

1. Boll, H. *et al.* (2010) High-speed single-breath-hold micro-CT of thoracic and abdominal structures in mice using a simplified method for intubation. J. Comput. Assist. Tomogr. 34: 783–790.
2. Boll, H. *et al.* (2011) Micro-CT based experimental liver imaging using a nanoparticulate contrast agent longitudinal study in mice. PLoS ONE 6: e25692.
3. Hua, X. W. *et al.* (2015) Contrast-enhanced micro-computed tomography using ExiTron nano 6000 for assessment of liver injury. World J Gastroenterol 21(26): 8043-8051.
4. Sabel, B. *et al.* (2014) Macrophage-Ablation Significantly Reduces Uptake of Imaging Probe into Organs of the RES. doi: 10.13140/2.1.2301.5682.

4. Related products

ExiTron™ U	# 130-095-142, # 130-095-143
ExiTron™ V	# 130-095-283, # 130-095-284
ExiTron™ P	# 130-095-144, # 130-095-145
ExiTron™ nano 12000	# 130-095-698, # 130-095-700
ExiTron™ MyoC 8000	# 130-095-701, # 130-095-702

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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