viscover

GadoSpin™ P

MRI agent for pre-clinical imaging

1 vial (5 x 100 µL injections) # 130-095-136
5 vials (25 x 100 µL injections) # 130-095-137

Contents

1. Description

Components **33 mg GadoSpin™ P,**
MRI agent (polymeric Gd-chelate)
or
5 × 33 mg GadoSpin™ P,
MRI agent (polymeric Gd-chelate).

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

Product format GadoSpin P is supplied as a lyophilized preparation. Reconstitution provides a 25 mM gadolinium isotonic solution.

Appearance White lyophilizate. Reconstituted: Clear, colorless 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

GadoSpin P is a polymeric gadolinium-based imaging agent of high molecular weight specifically formulated for pre-clinical magnetic resonance imaging (MRI).
It is an imaging agent of high relaxivity increasing the signal intensity in T_1-weighted MRI due to a shortening of the spin-lattice relaxation time (T_1).
Upon intravenous injection, GadoSpin P remains within the vascular system. Significant extravasation can be observed in fenestrated blood vessels of inflamed tissue or tumors.

GadoSpin P is mainly excreted via glomerular filtration (kidneys).

1.2 Applications

GadoSpin P is indicated for use in MRI of small animals, for example mice, to facilitate the visualization of the vasculature. Examples include contrast-enhanced magnetic resonance angiography (MRA), tumor characterization and therapy monitoring.

1.3 Physico-chemical properties

Molecular weight	Relaxivity (37 °C, 1.41 T, in water)
~200,000 g mol^{-1}	r_1 = 10 L $mmol^{-1}$ s^{-1} r_2 = 12 L $mmol^{-1}$ s^{-1}

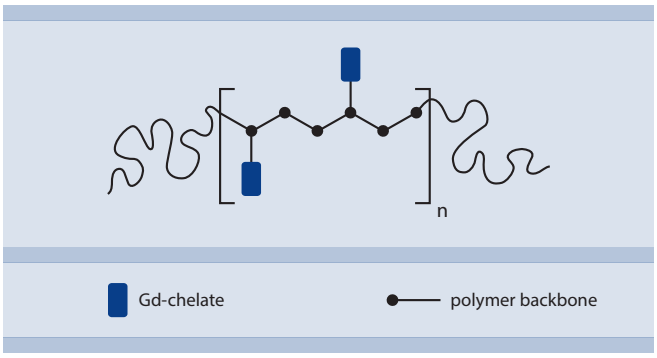

Figure 1: Schematic diagram of GadoSpin P.

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
- Physiological saline (0.9 % NaCl) solution

2. Protocol

2.1 Preparation

- Read the entire protocol before starting.
  Tip: For optimum device settings perform initial studies in a suitable imaging phantom.
- To reconstitute the lyophilizate, inject 850 µL physiological saline (0.9 % NaCl) solution into the vial. Vortex until a clear solution is obtained.

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- For a mouse weighing 20–30 g the typical injection volume is 100 µL corresponding to a dose of 100 µmol Gd/kg body weight (for a 25 g mouse).

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

2.2 Injection

- Reconstitute the GadoSpin P 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 GadoSpin P (typically 100 µL) via the lateral tail vein of the mouse.

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

2.3 Imaging

- Imaging can be performed on a multitude of devices at all commonly used field strengths including high-field MRI.
- GadoSpin P is particularly suited for T_1-weighted MRI but can also be detected by T_2- and T_2*-weighted sequences.
- Taking a pre-contrast image is recommended.
- Imaging can be performed immediately and over an extended time period after injection.

Find examples of GadoSpin P-enhanced MR images at **www.viscover.berlin**.

3. References

1. Kirchherr, A. K. *et al.* (2012) Characterization of a novel gadolinium-based high molecular weight polymer as an intravascular MR contrast agent. Proc. Intl. Soc. Mag. Reson. Med. 20, Melbourne, Australia.
2. Govaerts, K. *et al.* (2013) Towards quantitative evaluation of vascular alterations in mice using MR angiography. Front. Neuroinform. doi: 10.3389/conf.fninf.2013.10.00021.
3. Iliff, J. J. *et al.* (2013) Brain-wide pathway for waste clearance captured by contrast-enhanced MRI. J Clin Invest. 123(3): 1299-309.

4. Related products

GadoSpin™ M	# 130-095-134, # 130-095-135
GadoSpin™ F	# 130-095-162, # 130-095-163
GadoSpin™ D	# 130-095-164, # 130-095-165
FeraSpin™ R	# 130-095-138, # 130-095-139
FeraSpin™ XS	# 130-095-140, # 130-095-141
FeraSpin™ S	# 130-095-166, # 130-095-167
FeraSpin™ M	# 130-095-168, # 130-095-169
FeraSpin™ L	# 130-095-170, # 130-095-171
FeraSpin™ XL	# 130-095-172, # 130-095-173
FeraSpin™ XXL	# 130-095-174, # 130-095-175

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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