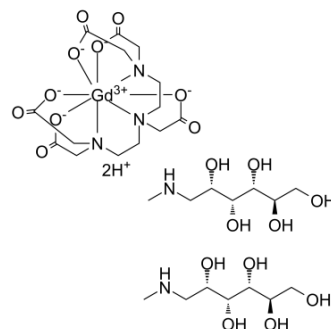


## Gadopentetate dimeglumine

Cat. No.:	HY-A0167
CAS No.:	86050-77-3
Molecular Formula:	C <sub>28</sub> H <sub>54</sub> GdN <sub>5</sub> O <sub>20</sub>
Molecular Weight:	938
Target:	Others
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (106.61 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.0661 mL	5.3305 mL	10.6610 mL
	5 mM	0.2132 mL	1.0661 mL	2.1322 mL
	10 mM	0.1066 mL	0.5330 mL	1.0661 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: **10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline**  
Solubility: ≥ 2.5 mg/mL (2.67 mM); Clear solution
- Add each solvent one by one: **10% DMSO >> 90% (20% SBE-β-CD in saline)**  
Solubility: ≥ 2.5 mg/mL (2.67 mM); Clear solution
- Add each solvent one by one: **10% DMSO >> 90% corn oil**  
Solubility: ≥ 2.5 mg/mL (2.67 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Gadopentetate dimeglumine (SH-L-451A) is used in combination with magnetic resonance imaging (MRI) to allow blood vessels, organs, and other non-bony tissues to be seen more clearly on the MRI.

#### In Vitro

Gadobenate dimeglumine-enhanced MRI significantly improves cancer detection compared to gadopentetate dimeglumine-enhanced MRI, mammography, and ultrasound in a selected group of patients undergoing breast MRI for preoperative staging or because of inconclusive findings at conventional imaging<sup>[1]</sup>. Interstitial MR lymphography with gadopentetate dimeglumine (Gd-DTPA) or gadoxetate disodium (Gd-EOB-DTPA) allows clear visualization of the lymphatic pathway in healthy mice, and no significant difference is found between the two agents. Their rapid kinetics

limits the imaging timing window, however, facilitates repeated assessment in a single imaging session<sup>[2]</sup>. Direct visualization of spilled gastrointestinal gadopentetate dimeglumine helps discriminate ischemic from control rats in this model<sup>[3]</sup>.

## PROTOCOL

### Animal Administration <sup>[2][3]</sup>

Rats: Twenty-eight rats are anesthetized and midline laparotomy is performed. Animals are divided into four groups: control, ligation of a single mesenteric arcade, ligation of six consecutive arcades, and ligation of the anterior mesenteric artery (analogous to the superior mesenteric artery in humans). A 1.0-mL enteric bolus of gadopentetate dimeglumine diluted with sterile water (1:1) is given via gavage. Magnetic resonance imaging is performed 2 hr after laparotomy and reviewed for the presence of intraperitoneal gadopentetate dimeglumine by two experienced observers. Animals are sacrificed 24 hr after surgery for pathologic examination<sup>[3]</sup>.

Mice: MR lymphography are performed after the subcutaneous injection of gadopentetate dimeglumine (Gd-DTPA) or gadoxetate disodium (Gd-EOB-DTPA) (0.1, 0.5, or 2.0 mmol per mouse) into the right footpad in six healthy mice, and the time courses of contrast enhancement are assessed. Additionally, the lymphatic pathways from two distinct sites are assessed in tandem by interstitial MR lymphography studies<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- **Biomaterials.** 2019 Mar;197:207-219.

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## REFERENCES

[1]. Gilbert FJ, et al. Comparison of gadobenate dimeglumine-enhanced breast MRI and gadopentetate dimeglumine-enhanced breast MRI with mammography and ultrasound for the detection of breast cancer. *J Magn Reson Imaging.* 2014 May;39(5):1272-86.

[2]. Sheng F, et al. Interstitial MR lymphography in mice with gadopentetate dimeglumine and gadoxetate disodium. *J Magn Reson Imaging.* 2011 Feb;33(2):490-7.

[3]. Montalbano JM, et al. Magnetic resonance imaging detection of extraluminal enterally administered gadopentetate dimeglumine in a rat model of intestinal ischemia. *Acad Radiol.* 1996 Jun;3(6):486-92.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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