

Directions for Use

Visistar® VEGFR2 for Molecular Imaging of Tumors in Small Animals

Materials Needed

1. Visistar VEGFR2 ultrasound contrast agents (VS-102)
2. Sterile 0.5 or 1.0 mL syringe with attached 28 G needle

Overview

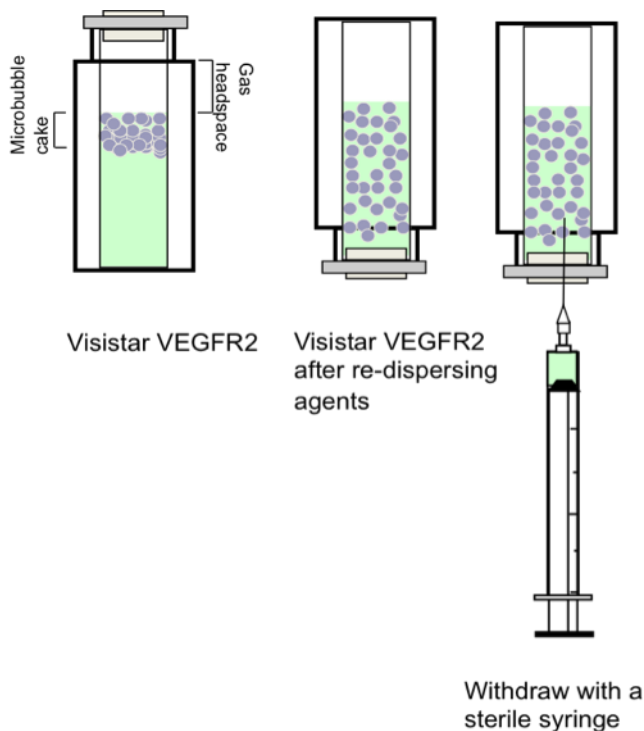
Visistar VEGFR2 is a microsphere ultrasound contrast agent containing a single-chain VEGF-based targeting ligand¹. Visistar VEGFR2 is known to bind to VEGFR2 found on angiogenic vascular endothelium² in mice and other species. The agent is useful for imaging angiogenesis in small animal models of tumor development. Agents are administered as an intravenous bolus injection, via retro-orbital, tail vein, or jugular injection in mice.

1. Disperse the Visistar VEGFR2 agents by gently shaking the vial end-to-end for 10 seconds. The dispersion should appear uniformly opaque.

2. Remove and discard the center of the aluminum crimp. Carefully insert a sterile 28-G syringe needle through the elastomeric septum, and withdraw the desired volume of Visistar VEGFR2. Do not open the Visistar VEGFR2 vial.

3. After sampling the vial, store vial upright at 4-8 degrees C.

4. Although dilution is not necessary for administration, Visistar VEGFR2 agents may be diluted with Targestar® Buffer, sterile saline or other aqueous buffer immediately prior to administration.



Dosage and Administration

Optimal dosage of Visistar VEGFR2 depends upon the tissue to be imaged, route of administration, and scanner settings. Dose optimization should be performed for each application. In mice (25 g), a dose of 30 microliters (μL) administered by jugular or retro-orbital injection generally results in sufficient contrast enhancement for subcutaneous tumors. Higher doses are generally required for ultra-high frequency (>20 MHz) imaging.

Contrast imaging settings (such as pulse inversion, sub-harmonic filtering, or CPS) should be enabled on the ultrasound scanner for optimal contrast sensitivity. Agents remain acoustically active *in vivo* for 5-15 minutes, depending on the administered dose and scanner settings. Please contact Targeson technical support for protocol assistance.

Stability and Precautions

Visistar VEGFR2 may be stored in its intact vial at 4-8 degrees C for up to 6 months. **Do not freeze.**

Visistar VEGFR2 should appear as a milky white dispersion after re-dispersion by gentle shaking. Do not use if liquid in vial appears clear, as this indicates that the contrast agent has been damaged or inactivated.

Once the vial septum has been pierced, the product must be used within 8 hours. Visistar VEGFR2 does not contain preservatives or bacteriostatic agents.

References

1. Backer MV, Levashova Z, Patel V, et al. *NatMed*.2007;13:504 –509
2. Anderson CR, Rychak JJ, Backer M, Backer J, Ley K, Klibanov AL. 2010. *Invest Radiol*. Oct;45(10):579-85.3.
3. Rychak JJ, J Graba, AM Cheung, BS Mistry, JR Lindner, RS Kerbel, FS Foster. 2007. *Mol Imaging* 6(5): 289-96