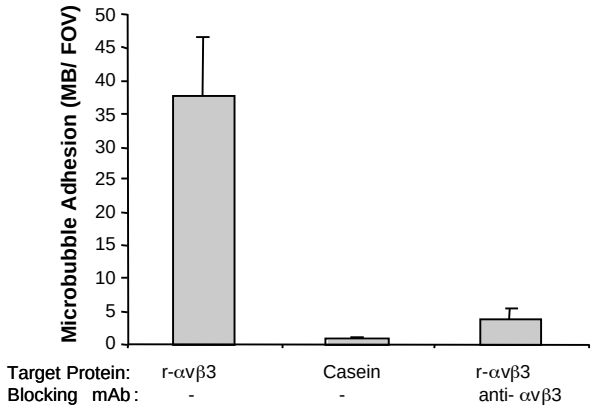
Visistar™*-Integrin* Targeted Ultrasound Contrast Agent

Catalog Number: VS-101 1 x 0.3 ml vial

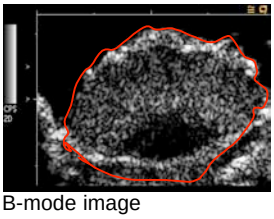
- **Ultrasound imaging of angiogenesis**
- **Targeted to $\alpha_v\beta_3$ integrin**
- **Ready to administer directly from vial**

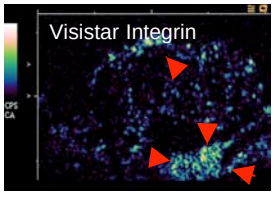
Applications

Visistar™-Integrin agents can be used for ultrasound molecular imaging of $\alpha_v\ \beta_3$ integrin expressed on angiogenic vascular endothelium. Agent echogenicity is optimal at ultrasound frequencies in 1-20 MHz range, and ultra-high frequency imaging (20-40 MHz) is also possible[1]. Contrast imaging settings such as pulse inversion or CPS must 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. A dose of 30 uL Visistar-Integrin per 25 g mouse is generally sufficient for tumor imaging; however, dosage should be optimized for each application. Please contact Targeson technical support for protocol assistance.



The figure demonstrates adhesion of Visistar-Integrin agents to recombinant mouse αvβ3 integrin in a parallel plate flow chamber adhesion assay[2]. The Visistar-Integrin agents exhibit little non-specific adhesion to casein-blocked control surfaces. Incubation of αvβ3 flow chambers with an anti-αvβ3 blocking antibody abolishes of >95% of Visistar Integrin adhesion.


B-mode image



Contrast Image (5 minutes)

Visistar-Integrin in a mouse model of tumor angiogenesis. Human prostate canccer cells (PC-3) implanted subcutaneously on mouse nape, and imaged at day 7. Tumor is outlined in red in the B-mode scan (left). Regions of Visistar-Integrin accumulation are highlighted with red arrows on contrast scan (right), Imaged at 8 MHz using CPS on a Sequoia (Siemens) ultrasound scanner.

Preparation

Visistar-Integrin agents are microbubbles composed of a perfluorocarbon gas core encapsulated by a lipid shell. The agents are further stabilized by a layer of poly(ethylene glycol). The outer shell is derivatized with a peptide that selectively binds endothelial avβ3 integrin. Agents are suspended in aqueous saline at a concentration of approximately 1 x 10^9 particles per mL, and are packaged in glass vials with a perfluorocarbon gas headspace. The agents have a median diameter of approximately 2.5 um.

Storage

Store undiluted at 4º C in sealed vials until ready for application. Concentration is stable in sealed vials for 3 months after septum is punctured. Concentration may decrease upon prolonged storage or vial opening. Do not freeze.

References

1. Rychak JJ, J Graba, AM Cheung, BS Mystry, JR Lindner, RS Kerbel, FS Foster. 2007. Mol Imaging 6(5): 289-96
2. Rychak JJ, B Li, ST Acton, A Leppanen, RD Cummings, K Ley, AL Klibanov. 2006. Mol. Pharm 3(5): 516-24.

Targeson, Inc
7590 Fay Ave
Suite 404
La Jolla, CA 92007

Tel: (877) 290-4043
Fax: (877) 401-7805
products@targeson.com
www.targeson.com