

Targestar™-B Targeted Ultrasound Contrast Agent Kit

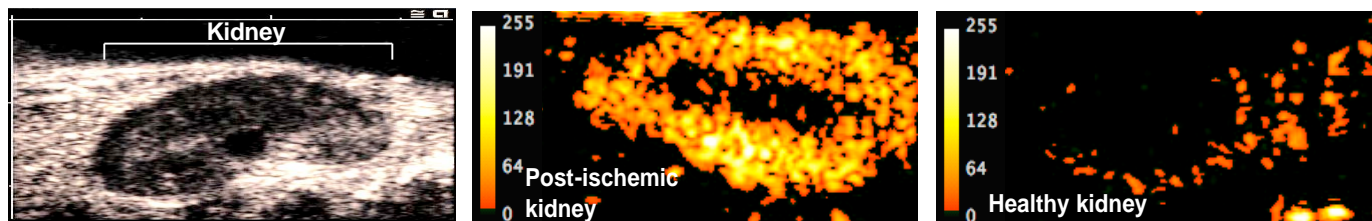
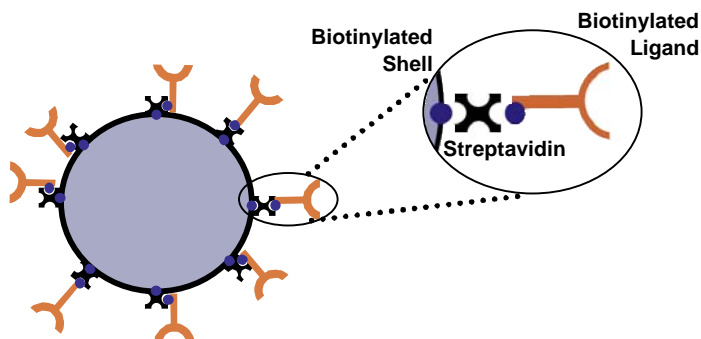
Catalog Number: TS-107

2 x 1.5 ml vials

- **Ultrasound molecular imaging applications**
- **Targeting with any biotinylated antibody or peptide ligand**

Applications

Targestar™-B agents are used for ultrasound molecular imaging of molecular markers expressed on the vascular endothelium. The Targestar-B agent is coated with biotin, and is derivatized with streptavidin using the provided conjugation kit. Biotinylated ligands (supplied by the user) such as antibodies and peptides can be conjugated to the agent surface. Targestar-B echogenicity is optimal at ultrasound frequencies in the 1-20 MHz range, and ultra-high frequency imaging (20-40 MHz) is also possible¹. 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. Each vial of Targestar-B yields approximately 10 doses in mouse (25 g); however, dosage should be optimized for each application. Please contact Targeson technical support for protocol assistance.



Contrast ultrasound imaging of inflammation in post-ischemic mouse kidney. Targestar-B was conjugated to a biotinylated anti-P-selectin monoclonal antibody (clone Rb40.34; BD Biosciences). P-selectin expression corresponding to ischemia/reperfusion injury was induced within the left mouse kidney by a 32 minutes of ischemia, followed by 60 minutes of reperfusion². The left figure shows a B-mode scan of the kidney. The middle figure shows the signal from P-selectin targeted Targestar-B within the post-ischemic kidney 8 minutes after agent administration. The right figure shows the minimal signal from P-selectin targeted Targestar-B within the healthy contralateral kidney.

Preparation

Targestar-B 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 biotin, and is subsequently coated with streptavidin for conjugation of biotinylated ligands (see Targeson Protocol 1002 for conjugation details). Agents are suspended in aqueous saline at a concentration of approximately 1×10^9 particles per mL, and are packaged in glass vials with a perfluorocarbon gas headspace. The agents have a median diameter of approximately 2.5 μm .

Storage

Store Targestar-B undiluted at 4° C in sealed vials until ready for application. Concentration is stable in sealed vials for 3 months after receipt. Concentration may decrease upon prolonged storage or vial opening. Do not freeze. Once Targestar-B agents are removed from the vial and conjugated to a ligand, they are stable for approximately 6 hours when kept at 4° C.

References

1. Rychak JJ, J Graba, AM Cheung, BS Mystry, JR Lindner, RS Kerbel, FS Foster. 2007. Mol Imaging 6(5): 289-96
2. Singbartl K, SA Green, KF Ley. 2000. FASEB J 14: 48-54.

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