

Supporting Information

Early evaluation of survival of the transplanted ovaries through ultrasound molecular imaging via targeted nanobubbles

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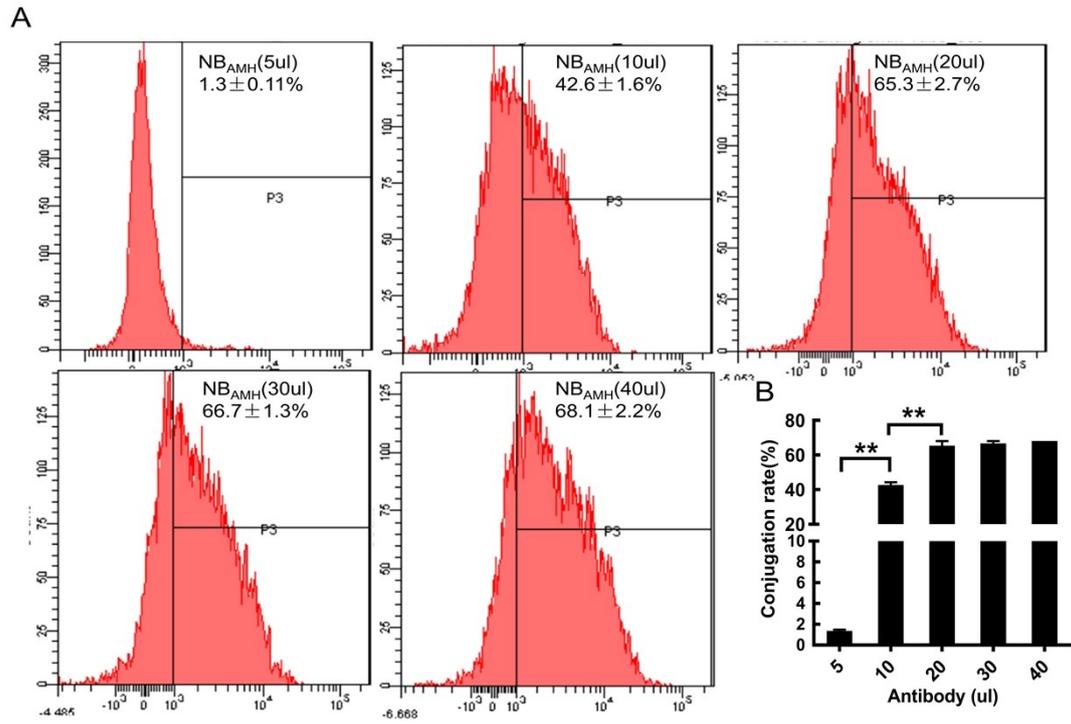


Fig. S1. Conjugation efficiency by flow cytometry. AMH-antibody conjugation efficiency increased commensurately with increasing antibody concentration; however, this did not increase significantly with 20 ul AMH-antibody. **P < 0.001.

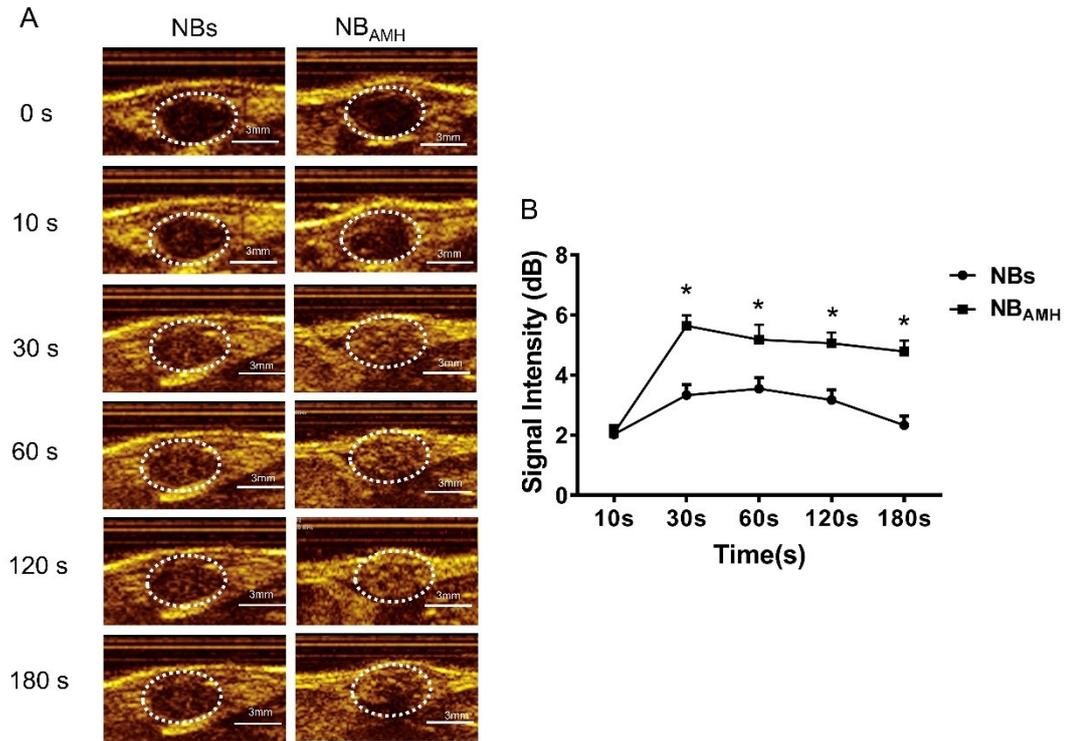


Fig. S2. *In vivo*-targeted contrast-enhanced ultrasound imaging. A kinetic study with contrast-enhanced ultrasound imaging (A) of transplanted ovaries (7 days after surgery) at different time-points (10, 30, 60, 120, and 180 s) after injection of NBs or NB_{AMH}. Ultrasound contrast time-intensity curves (B) with data extracted from (A). * $P < 0.001$, the signal intensity of NB_{AMH} compared to NBs.

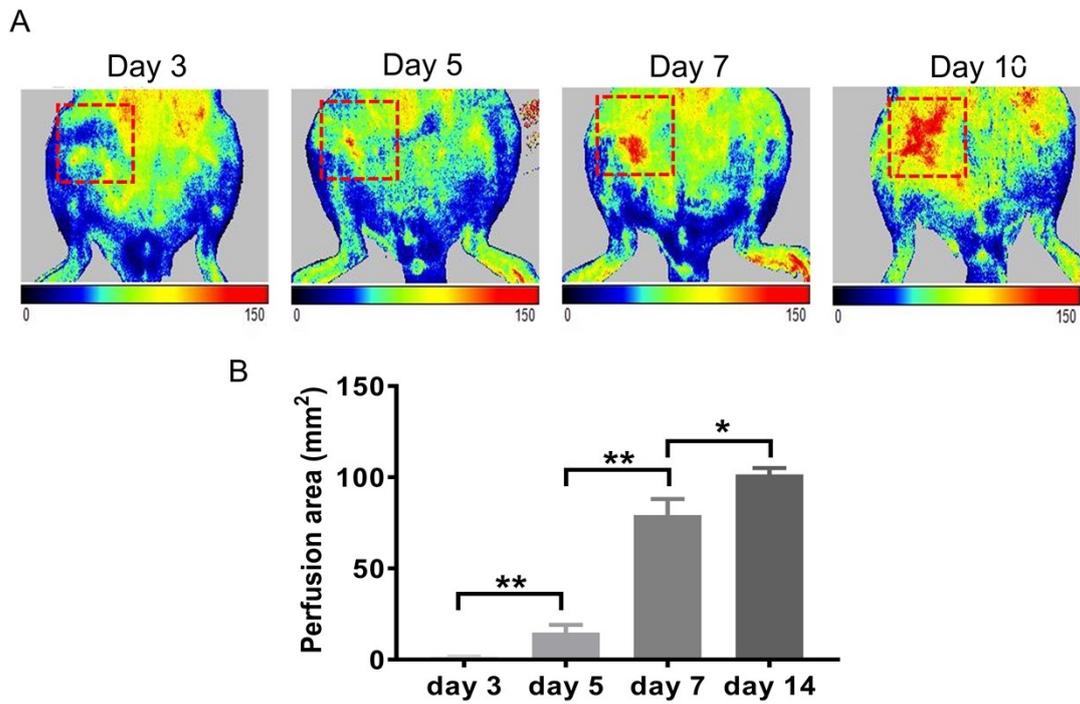


Fig. S3. The evaluation of the transplanted ovarian microcirculation perfusion through Laser Doppler perfusion images. Quantitative analysis of ovarian perfusion showed that perfusion area gradually increased from day 3 to day 10, indicating the vascular network of the transplanted ovary was established rapidly and survival status was gradually improving. * $P < 0.05$, ** $P < 0.001$.

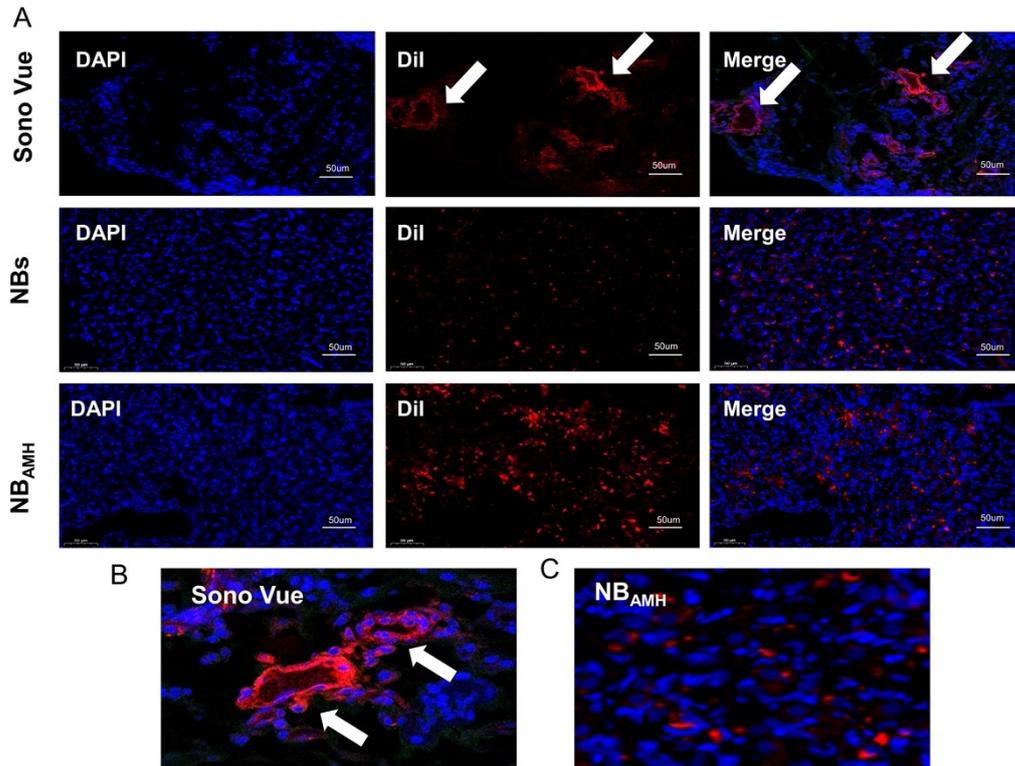


Fig. S4. CLSM images of transplanted ovaries after injection of the three contrast agents. (A) The DiI-labeled SonoVue are observed within the vascular compartment (white arrow) and barely visible outside the ovarian vasculature. In contrast, a considerable number of DiI-labeled NB_{AMH} were scattered in the intercellular space; the NBs can be observed in the same location but to a lesser extent. (B) is the enlargement of the Merge image of SonoVue in (A); (C) is the enlargement of the Merge image of NB_{AMH} in (A). DiI, red fluorescence; DAPI, blue fluorescence.

Table S1. General characteristics of nanobubbles. Mean diameter, Polydispersity index (PDI) and Concentration and of the NBs and NB_{AMH}.

nanobubbles	particle size (nm)	PDI	concentration ($\times 10^8$)
NBs	472.24 \pm 28.02	0.25 \pm 0.05	4.57 \pm 0.35
NB _{AMH}	549.33 \pm 28.53	0.21 \pm 0.07	3.43 \pm 0.21

