

Figure S1. Stability characterization of microbubbles. (A, B) Particle size distribution of lyophilized microbubbles upon reconstitution at Day 0 (A) and Day 180 (B). (C) Concentration variation of reconstituted microbubbles over time.

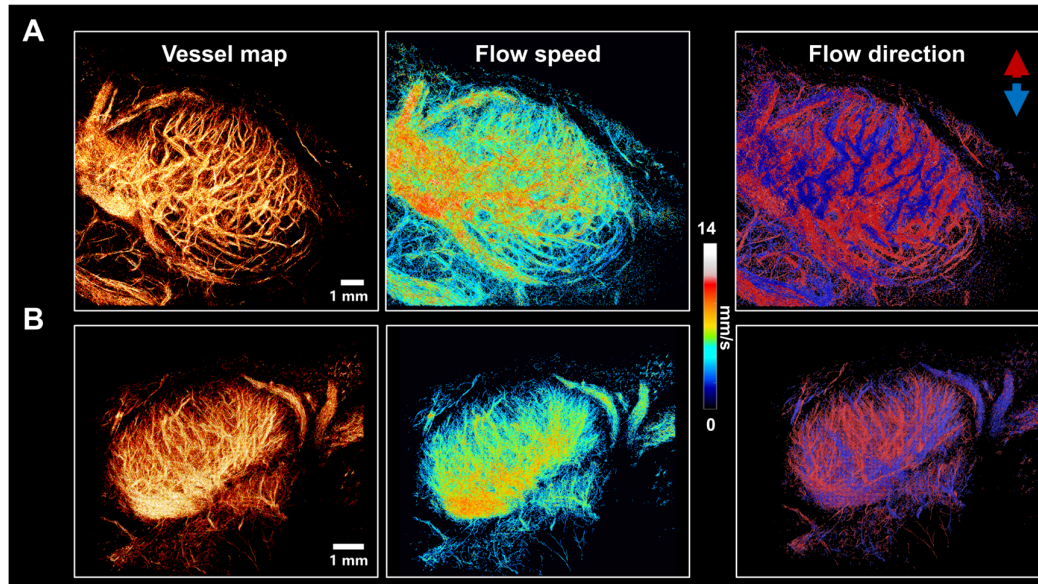


Figure S2. SRUS imaging of representative lymph nodes. (A, B) Super-resolution ultrasound (SRUS)-based microvascular reconstructions reveal densely organized vascular networks within lymph nodes across multiple imaging planes. Compared to micro-CT imaging (gray-scale, Video S2), which provides only anatomical structure, SRUS offers visualization of hemodynamic parameters, including flow speed (color-coded) and flow direction (indicated by arrows).

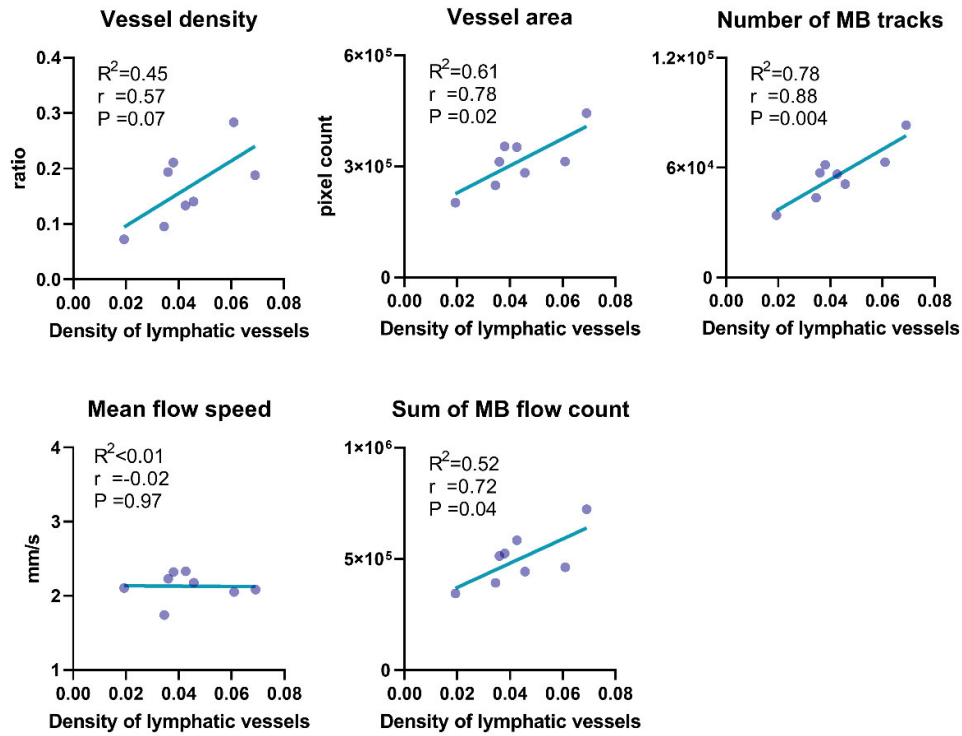


Figure S3. Correlation analysis between histologically quantified lymphatic vessel density and SRUS-derived vascular parameters. Scatter plots illustrate the relationship between lymphatic vessel density measured from histological sections and corresponding vascular parameters obtained via super-resolution ultrasound (SRUS) imaging. Each data point represents an individual lymph node. Statistical analysis was performed using Pearson correlation with linear regression. Reported metrics include the correlation coefficient (r), coefficient of determination (R^2), and p-value (P).

Table S1. The Tukey's multiple comparisons test of SRUS results

Pairs	Mean Diff.	95.00% CI of diff.	Below threshold?	Adjusted P Value
SRUS-1 vs. SRUS-2	-8723474	-14115523 to -3331424	Yes	0.0012
SRUS-1 vs. SRUS-3	7581303	2189254 to 12973352	Yes	0.0047
SRUS-2 vs. SRUS-3	16304777	10912727 to 21696826	Yes	<0.0001

Table S2. The Tukey's multiple comparisons test of micro-CT results

Pairs	Mean Diff.	95.00% CI of diff.	Below threshold?	Adjusted P Value
CT-1 vs. CT-2	-8432238	-12784200 to -4080276	Yes	0.0001
CT-1 vs. CT-3	1098668	-3253295 to 5450630	No	0.8073
CT-2 vs. CT-3	9530906	5178943 to 13882868	Yes	<0.0001

Video S1. Super-resolution ultrasound (SRUS) imaging of microvascular structures within the lymph node of an MRL/lpr mouse. The video presents reconstructed microvascular images of sequential 2D imaging planes.

Video S2. Three-dimensional rotational view of micro-CT reconstruction of the lymph node microvasculature in an MRL/lpr mouse.