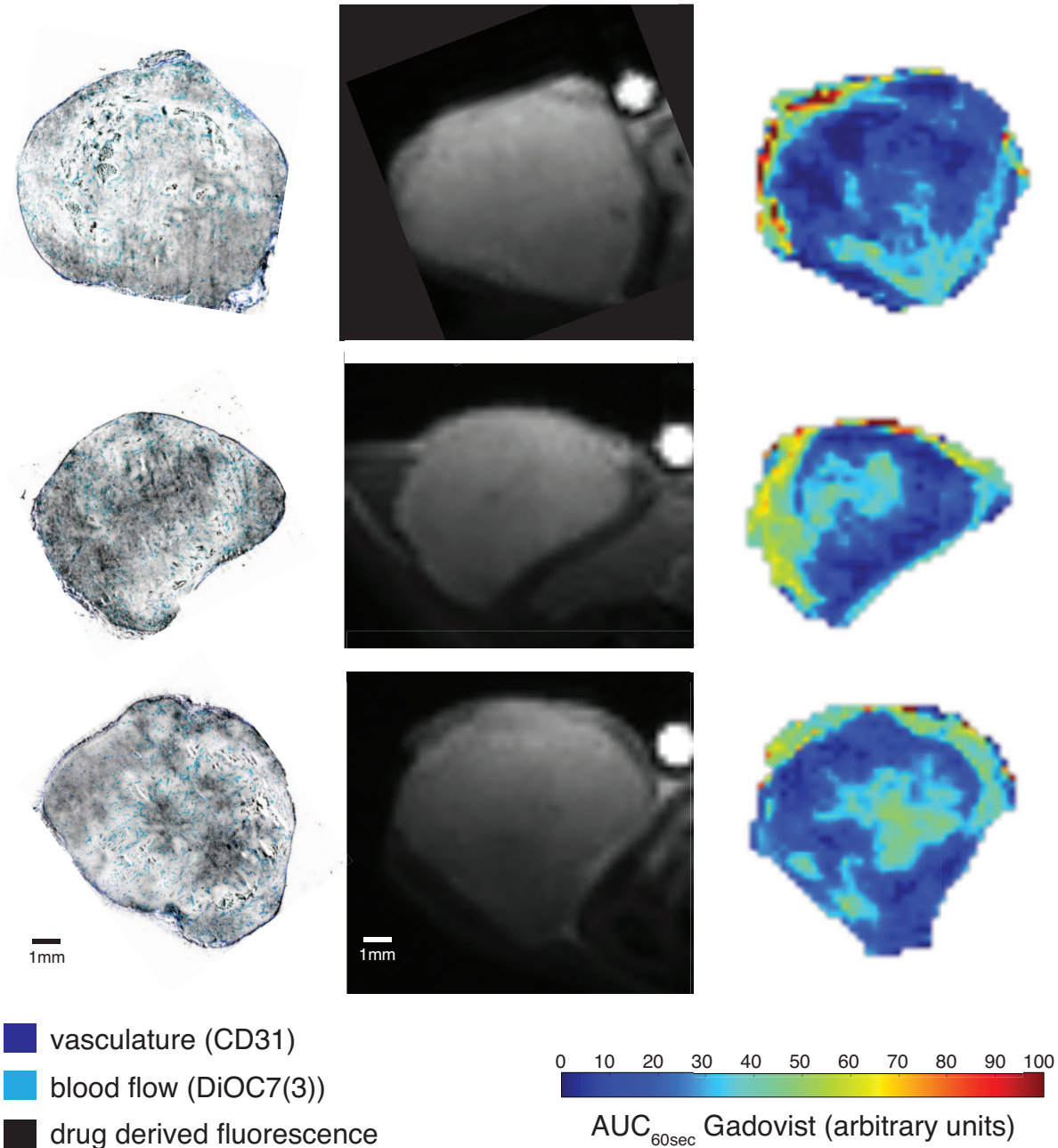


Histology;  
irinotecan, 1h

MRI; T1 weighted  
reference

MRI;  $AUC_{60\text{sec}}$   
for Gadovist



**FIG S3.** Microregional accumulation of irinotecan in comparison to contrast-agent accumulation in MRI. BT474 breast cancer xenografts were imaged using dynamic contrast-enhanced MRI for uptake of Gadovist contrast agent, then treated with 50 mg/kg irinotecan for 1h. Histological images correspond to MR reference images (T1-weighted reference scan) confirming multi-modal alignment and slice co-registration. Native drug fluorescence and tumor vasculature (irinotecan, 1h) in histology images correspond to cumulative contrast agent concentration ( $AUC_{60\text{sec}}$  for Gadovist) from dynamic MRI.  $AUC_{60\text{sec}}$  is a reflection of the amount of contrast agent delivered in the first minute, which is a dynamic measure of overall extravascular contrast agent delivery which is affected by a combination of perfusion and permeability rates as well as the amount of agent delivered to the tumor vasculature. (Bains L., Baker J., Kyle H. et al., Detecting vascular-targeting effects of the hypoxic cytotoxin tirapazamine in tumor xenografts using MRI. *Int J Rad Onco Biol Phys* 2009; 47 p 957). Scale bars 1mm.