

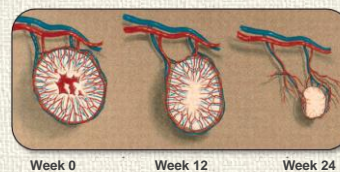
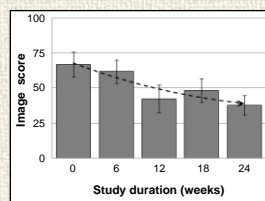
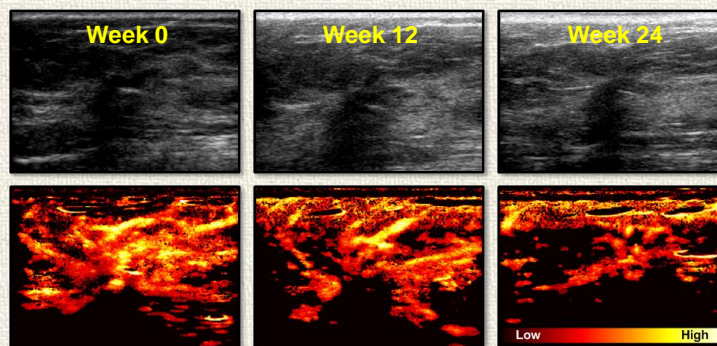
Measures with Ultrasound Contrast Agents

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University of Alabama at Birmingham



Contrast-Enhanced Ultrasound Monitoring Tumor Response to Therapy

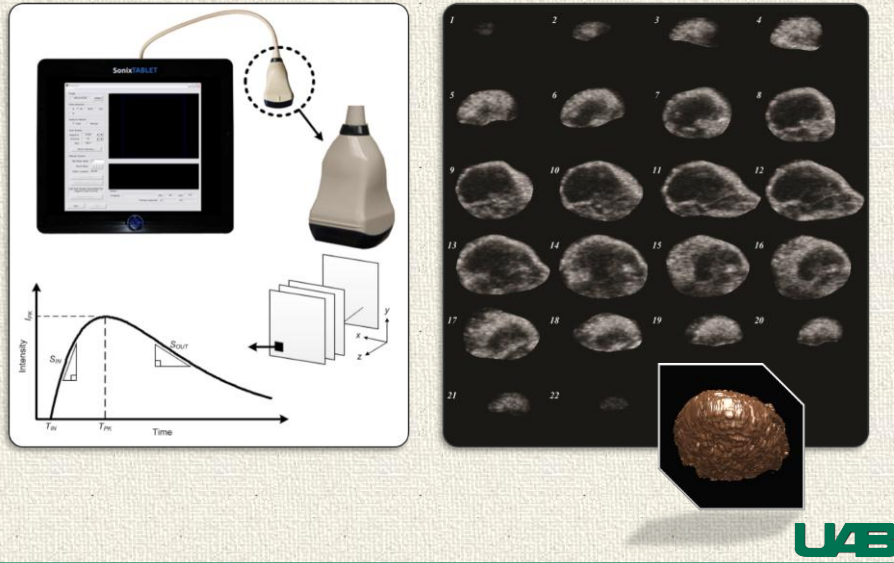


Week 0 Week 12 Week 24



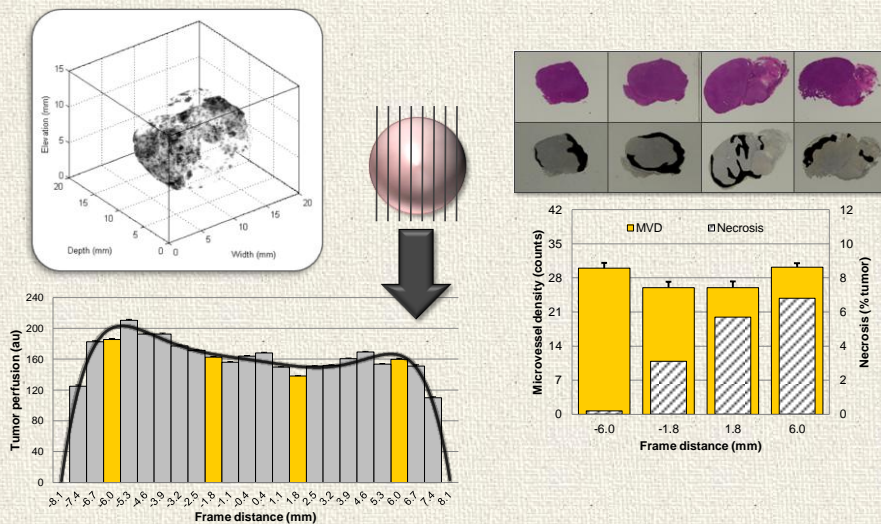
Contrast-Enhanced US Imaging

Volumetric Strategies



Volumetric Contrast-Enhanced US

Analysis of Spatial Variation

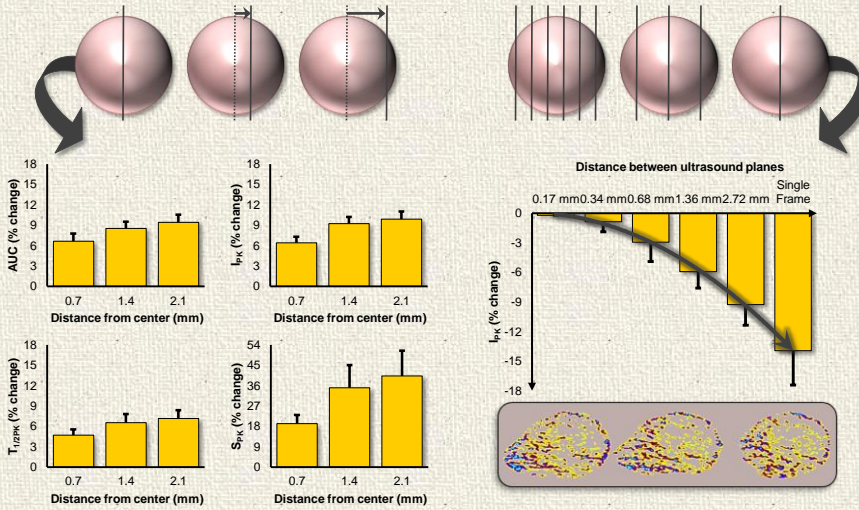


Hoyt K, Sorace A, Saini R. Quantitative mapping of tumor vascularity using volumetric contrast-enhanced ultrasound. *Investigative Radiology*, 47:167-174, 2012.



Volumetric Contrast-Enhanced US

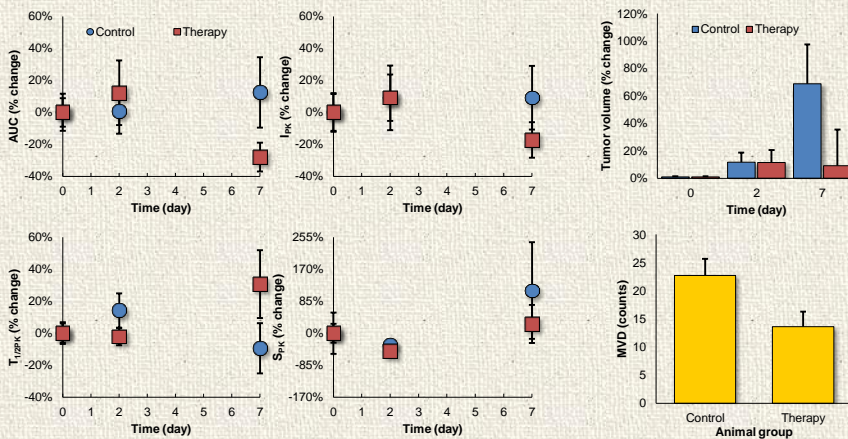
Improvements in Tumor Perfusion Estimates



Hoyt K, Sorace A, Saini R. Quantitative mapping of tumor vascularity using volumetric contrast-enhanced ultrasound. *Investigative Radiology*, 47:167-174, 2012.



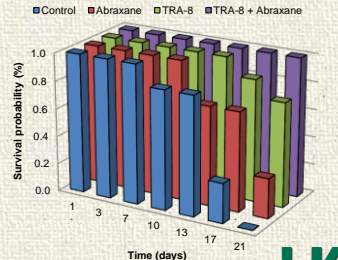
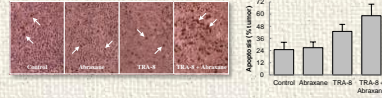
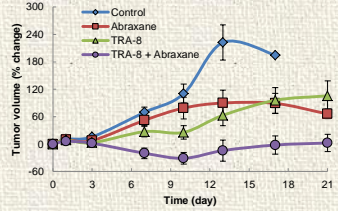
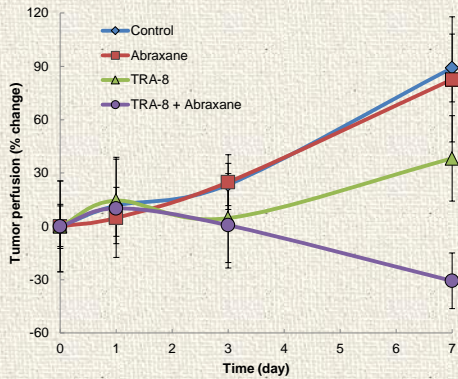
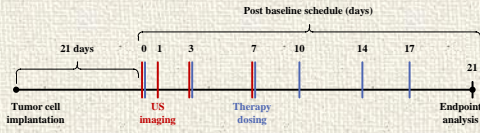
Antiangiogenic Therapy Monitoring



Hoyt K, Sorace A, Saini R. Quantitative mapping of tumor vascularity using volumetric contrast-enhanced ultrasound. *Investigative Radiology*, 47:167-174, 2012.



Chemotherapeutic Monitoring



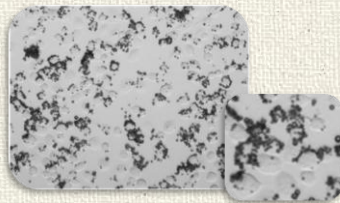
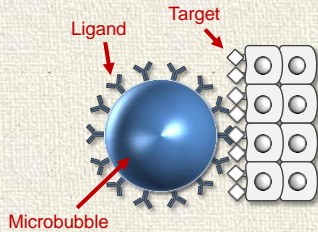
Hoyt K, Sorace A, Saini R. Volumetric contrast-enhanced ultrasound imaging of breast cancer to assess early response to apoptosis-inducing anti-DR5 antibody therapy. J Ultrasound Med, 2012 (Accepted for publication).



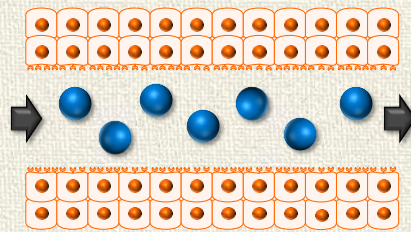
Targeted MB Contrast Agents

STRATEGY

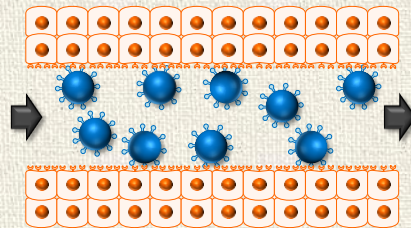
Label US contrast agents with antibodies/peptides that selectively bind to molecules that are overly abundant in diseased tissue



Normal MBs

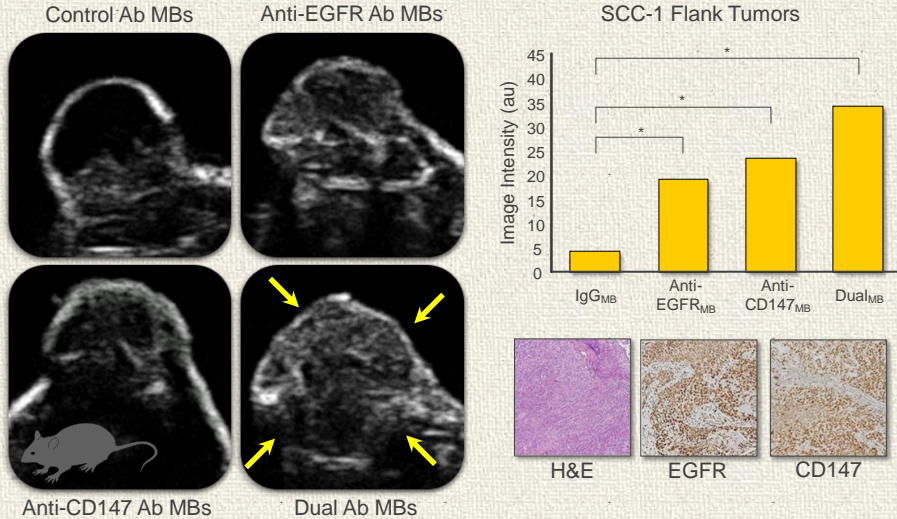


Targeted MBs



Molecular Ultrasound Imaging

Head and Neck Cancer

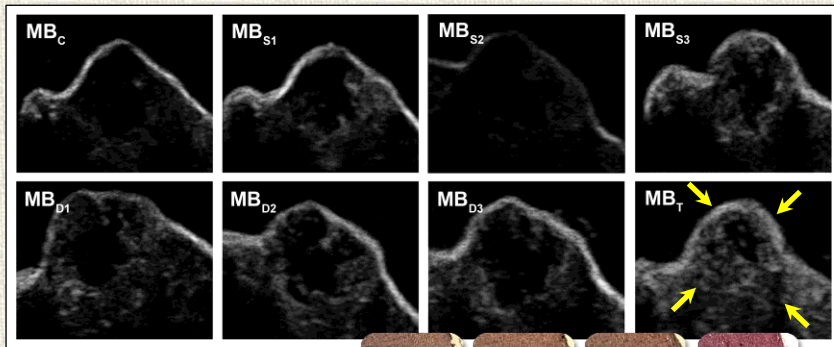


Knowles JA, Heath CH, Saini R, Umphrey H, Warram J, Hoyt K, Rosenthal E. Molecular targeting of ultrasound contrast agent enhances detection of head and neck squamous cell carcinoma. *Archives of Otolaryngology – Head and Neck Surgery*. 2012 (In press).



Molecular Ultrasound Imaging

Tumor Angiogenesis

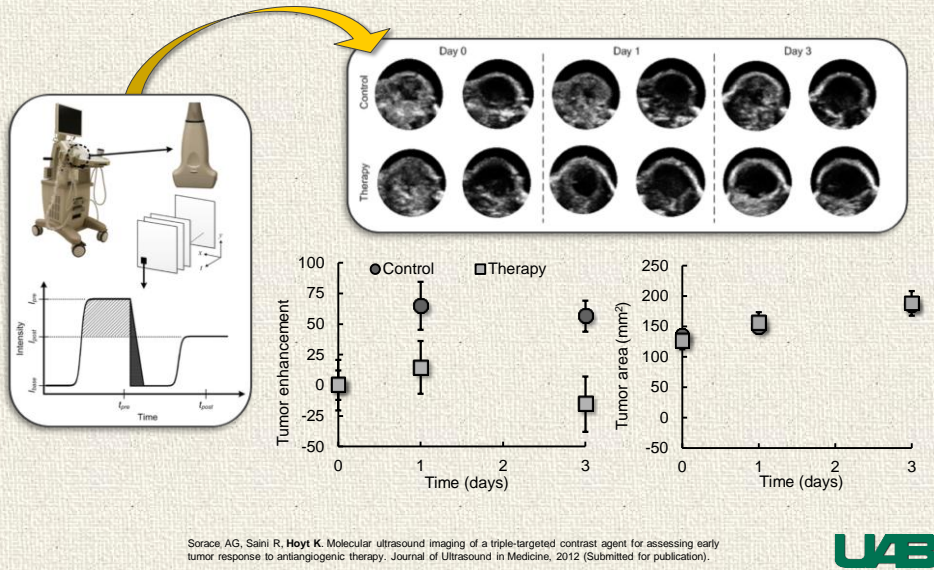


Warram J, Sorace A, Saini R, Umphrey H, Zinn KR, Hoyt K. Triple-targeted ultrasound contrast agents provide improved localization to tumor vasculature. *Journal of Ultrasound in Medicine*. 30: 921-931, 2011.



Molecular Ultrasound Imaging

Monitoring Antiangiogenic Therapy



Collaborators

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