

Citations 358 impact factor:28 (nature medicine)
Amide Proton Transfer (APT) Contrast for Imaging of Brain Tumors by Zhou et al

They used APT (Amide proton transfer) to produce MRI contrast sensitive to cellular protein and peptide content. This was then used to successfully identify tumors in rat brains, where other methods such as T1, T2 and T2* failed.

***Magnetic resonance imaging of pH *in vivo* using hyperpolarized ^{13}C -labelled bicarbonate by Gallagher et al.**

They show that tissue pH can be imaged *in vivo* from the signal intensities of hyperpolarized bicarbonate ($\text{H}^{13}\text{CO}_3^-$). The technique was demonstrated in a mouse tumour model, which showed that the average tumour interstitial pH was significantly lower than the surrounding tissue.

Amide proton transfer imaging of human brain tumors at 3T by Craig Jones et al.

First human APT study from 10 patients with brain tumors on a 3T whole-body clinical scanner and compared with T1 and T2-weighted (T2w), FLAIR images, diffusion images (fractional anisotropy (FA) and apparent diffusion coefficient (ADC)). The APT-weighted images provided good contrast between tumor and edema.

Question: how can you validate the human study without having histological data like in the rat study?