

Detecting the Blood of Femoral and Carotid Artery of Swine Using Photoacoustic Tomography in-vivo

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Abstract : Photoacoustic imaging is the imaging technology that combines the optical imaging with ultrasound. It also provides the high contrast and resolution due to optical and ultrasound imaging, respectively. For these reasons, many studies take experiment in order to apply this method for many diagnoses. We developed the real-time photoacoustic tomography (PAT) system using linear-ultrasound transducer. In this study, we conduct the experiment using swine and detect the blood of carotid artery and femoral artery. We measured the blood of femoral and carotid artery of swine and reconstructed the image using 950nm due to the HbO₂ absorption coefficient. The photoacoustic image is overlaid with ultrasound image in order to match the position. In blood of artery, major composition of blood is HbO₂. In this result, we can measure the blood of artery.

Keywords : photoacoustic tomography, swine artery, carotid artery, femoral artery

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