

January 31, 2019

To,
The Editor
Journal of Visualized Experiments

Dear Editor,

We wish to submit an original research article entitled “Second generation pulsed laser diode based photoacoustic tomography for monitoring wash-in and wash-out of dye in rat cortical vasculature” for consideration by Journal of Visualized Experiments. The authors are Sandeep Kumar Kalva, Paul Kumar Upputuri, Praveenbalaji Rajendran, Rhonnie Austria Dienzo, and Manojit Pramanik.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere.

Photoacoustic tomography (PAT) is an emerging non-invasive biomedical imaging modality. With the advancement of laser technology, pulsed laser diodes (PLDs) are gaining prominence and are widely used for near-infrared wavelength excitation in PA imaging. These PLD lasers have the advantage of compactness and high pulse repetition rates (KHz) compared to conventional bulky Nd:YAG/OPO/Ti:Sapphire lasers with low repetition rates (10-100 Hz). Second-generation pulsed laser diode based PAT (PLD-PAT-G2) system was developed by using 8 acoustic reflector based single-element ultrasound transducers (SUTRs) and was demonstrated for high-speed dynamic *in vivo* imaging at 0.5 s acquisition scan time. This system provided 165 μ m spatial resolution high-quality images and an *in vitro* depth imaging up to 3 cm. In this work, by using this PLD-PAT-G2 system we are providing the visual demonstration of experiments for *in vivo* brain imaging and dynamic visualization of uptake and clearance process of Food and Drug Administration (FDA) approved indocyanine green (ICG) dye in rat brain vasculature.

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Thank you for your consideration of this manuscript.

Sincerely,



Manojit Pramanik, Ph.D.