Supplementary information

Noninvasive Anatomical and Functional Imaging of Orthotopic Glioblastoma Development and Therapy using Optoacoustic Tomography

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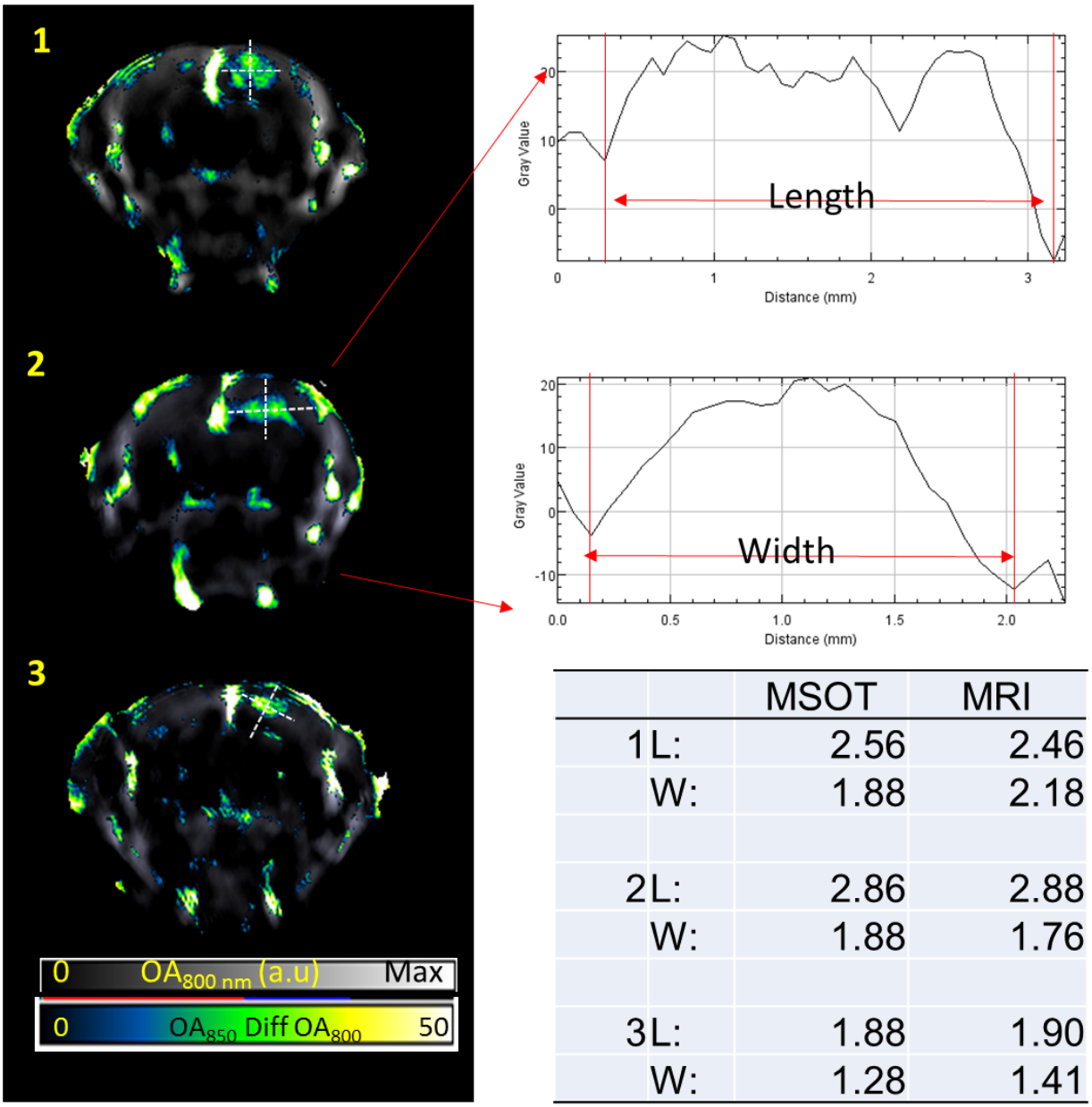

	MSOT	MRI
1 L:	2.56	2.46
W:	1.88	2.18
2 L:	2.86	2.88
W:	1.88	1.76
3 L:	1.88	1.90
W:	1.28	1.41

Fig S1. Anatomical imaging of murine orthotopic glioblastoma. Difference of single wavelength images at 850 nm and 800 nm projecting the shape and location of three tumors. Line plots drawn across tumor allows computing the length and width. The dimensions were similar to that observed using MRI T2 weighted imaging. All dimensions are in mm.

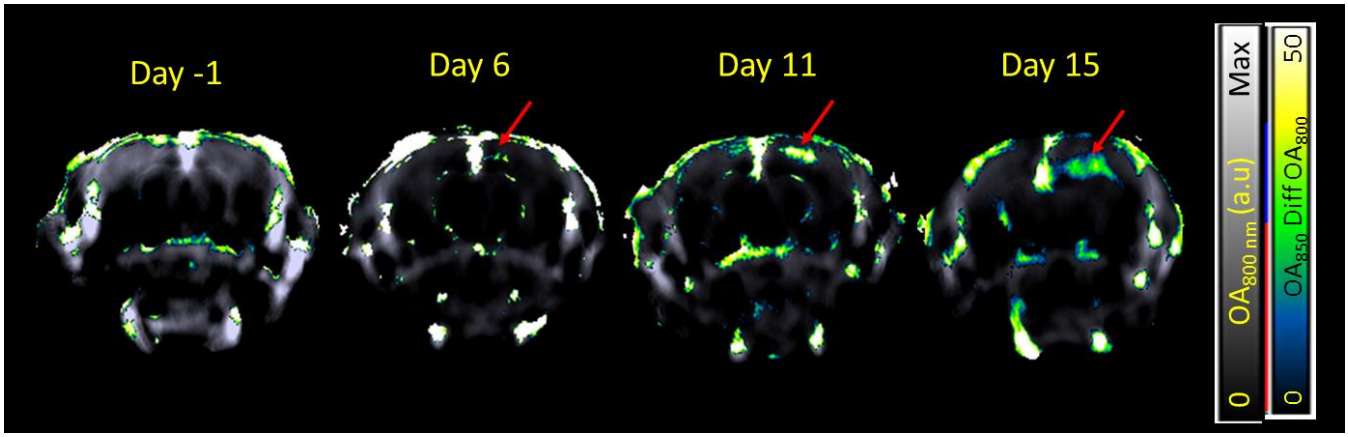

Fig S2. MSOT for evaluating tumor growth. Tumor growth was monitored up to 15 days using MSOT. The tumor was identified by hyperintense signals on the right cortex in the difference of single wavelength images at 850 and 800 nm. Tumor dimensions was measured manually on Image J at the largest cross section of the tumor and tumor volume was estimated as $1/2(\text{Length} \times \text{Width}^2)$.

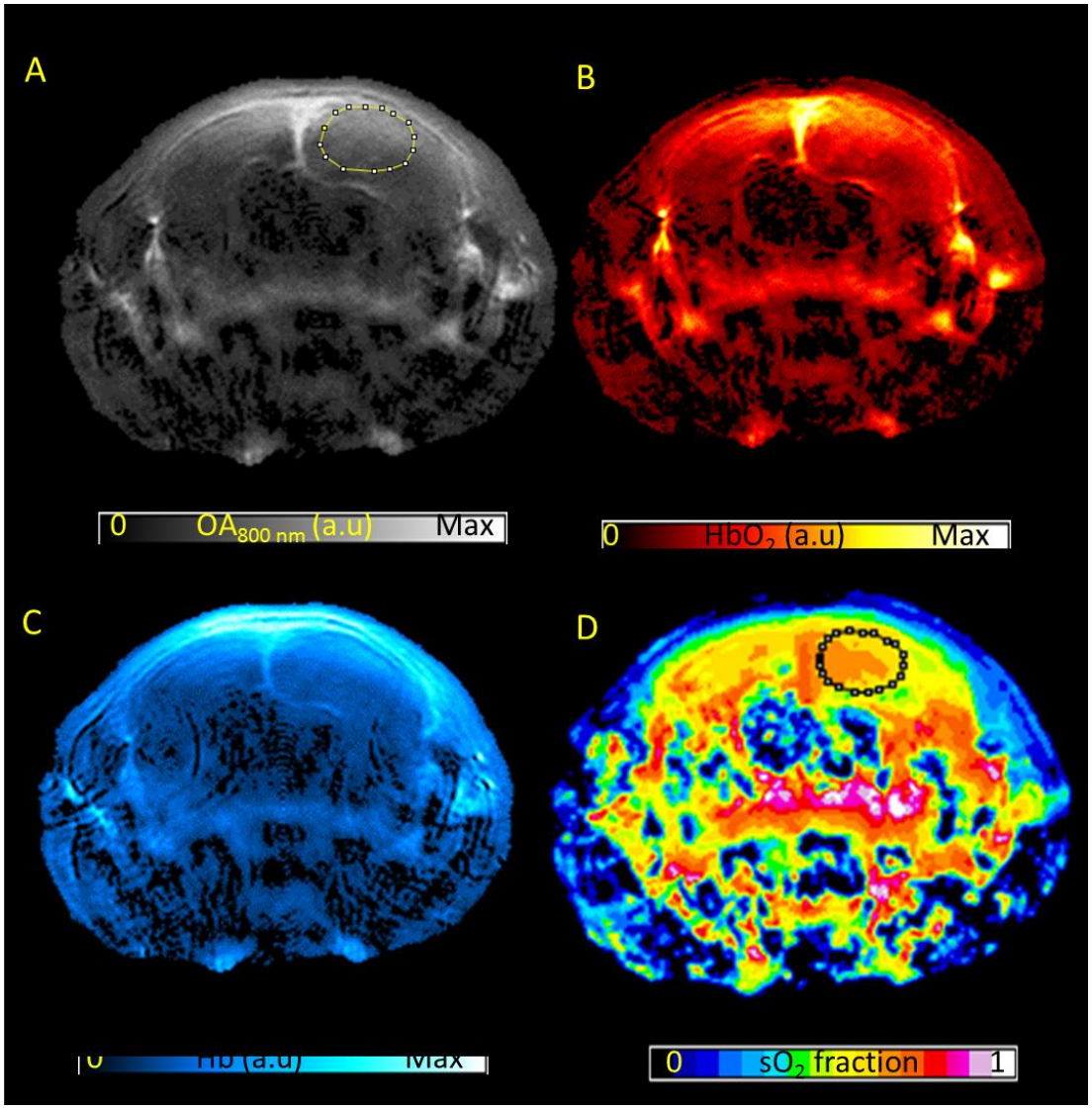

Fig S3. Functional Imaging of Glioblastoma. (A) Single wavelength optoacoustic image of the brain containing tumor (B) Oxyhemoglobin map, (C) deoxyhemoglobin map and (D) sO2 fraction map after combined non-negative constrained reconstruction and unmixing.

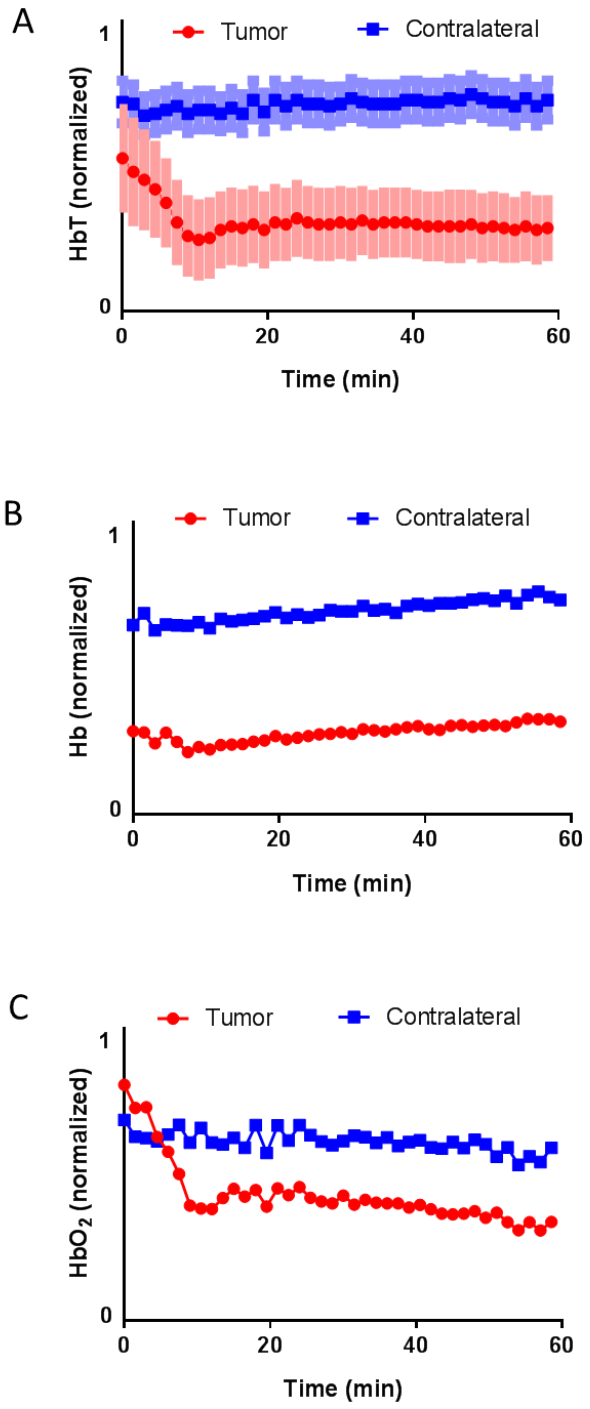

Fig S4. Real-time hemodynamic changes at the tumor upon administration of CA4P. Panel A, B and C shows the real-time total hemoglobin (HbT), deoxyhemoglobin (Hb) and oxyhemoglobin (HbO_2) changes respectively in the tumor and contralateral brain occurring immediately post CA4P administration over 1 hour in a representative animal. SD are represented by lighter shades on the graph.

Supplementary video 1. Video of Dynamic changes in saturated oxygen in tumor and contralateral brain upon vda treatment over 1 hour