# Ultrafast Volumetric Optoacoustic Imaging of Whole Isolated Beating Mouse Heart

Hsiao-Chun Amy Lin<sup>1,2</sup>, Xosé Luís Déan-Ben<sup>1</sup>, Michael Reiss<sup>1,2</sup>, Verena Schöttle<sup>3</sup>, Christian A. Wahl-Schott<sup>3</sup>, Igor R. Efimov<sup>4</sup>, and Daniel Razansky<sup>1,2</sup>\*

- 1. Institute for Biological and Medical Imaging (IBMI), Helmholtz Center Munich, Neuherberg, Germany
- 2. Faculty of Medicine, Technical University of Munich, Germany
- 3. Department of Pharmacy, Center for Drug Research and Center for Integrated Protein Science Munich, Ludwig-Maximilians-Universität München, Munich, Germany
- 4. Department of Biomedical Engineering, George Washington University, Washington, DC 20052 USA.

## \* Corresponding author:

Daniel Razansky

Address : Ingolstaedter Landstrasse 1, 85764, Neuherberg, Germany

Telephone : +49 89 3187 1587 Fax : +49 89 3187 3017

Email : <u>dr@tum.de</u>

## SUPPLEMENTAL MATERIALS

#### **VIDEO LEGENDS**

## **Supplementary Movie 1**

The Langendorff heart at a single timepoint, displayed as cross-sectional fly-throughs. Projections in the x, y, and z dimensions are shown sequentially, with 100  $\mu$ m steps. Scalebar: 2 mm.

### **Supplementary Movie 2**

The beating Langendorff heart shown as the maximum intensity projection (MIP), acquired with 100 ms temporal resolution. Scalebar: 5 mm.

## **Supplementary Movie 3**

Temporal movie of x, y, and z cross-sections selected planes demonstrating mitral valve dynamics. The movie shows valve opening- and closing- events, with 100 ms temporal resolution. Scalebar: 5 mm.