

## **Analysis of Craniocardiac Malformations in *Xenopus* using Optical Coherence Tomography**

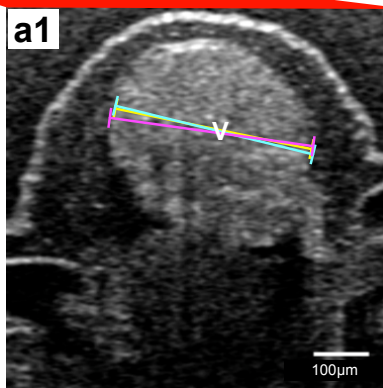
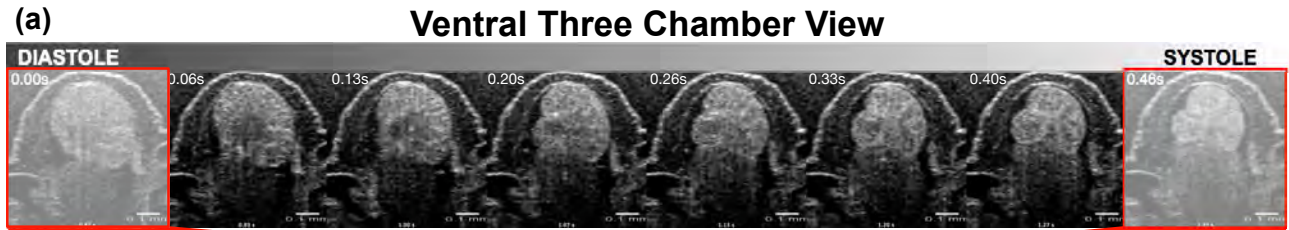
Engin Deniz, Stephan Jonas, Michael Hooper, John Griffin, Michael A. Choma, Mustafa K. Khokha

### **Supplementary Information**

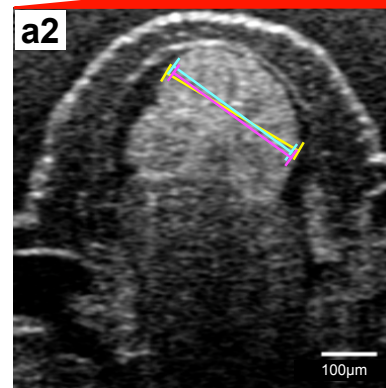
Supplementary Figure S1: **Imaging Planes and Measurements of *Xenopus tropicalis* heart with OCT.** **(a)** Tadpole heart sequential imaging from diastole to systole. **(a1)** Shows the maximal ventricle diastole where 3 separate measurements recorded from wall-to-wall. **(a2)** Shows the maximal systole where 3 separate measurements recorded from wall-to-wall. End diastolic diameter(EDD) and End systolic diameter(ESD) recorded as the average of these three measurements. **(b)** Outflow tract shown during a cardiac cycle. **(b1)** Represent the mid-systole phase where outflow tract is at the maximal stretch. **(b2 – b3)** Enlarged images from distal OFT where `distal outflow tract maximal diameter` measured as the wall-to-wall distance presented as green-a line. The `distal outflow tract maximal excursion distance` measured as the distance between the leaflets presented as yellow-b line. **(c)** Shows the tadpole heart from the lateral view during a cardiac phase. **(c1 – c2)** Focused on the proximal outflow tract during maximal diastole and systole. Inner wall-to-wall measurements made during systole presented as yellow-a line.

Supplementary Figure S2: **Cranial Imaging closely represents histology.** **(a/a`)** Transverse section by OCT and Histology. **(b/b`)** Coronal section by OCT and skeletal stain with Alcian Blue. **(c/c`)** Sagittal section by OCT and histology.

# Ventral Three Chamber View

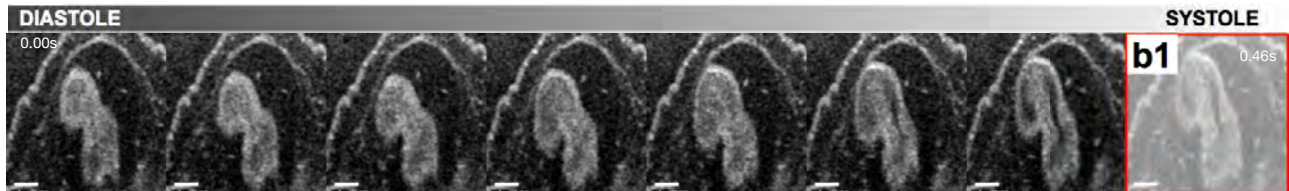


Ventricular End Diastolic  
Maximal Diameter = EDD



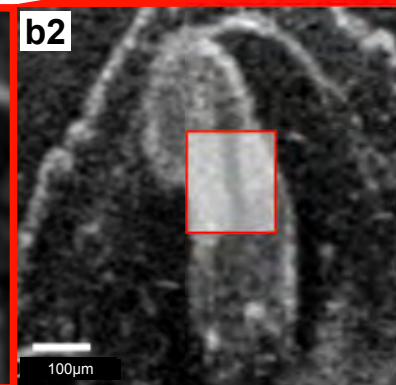
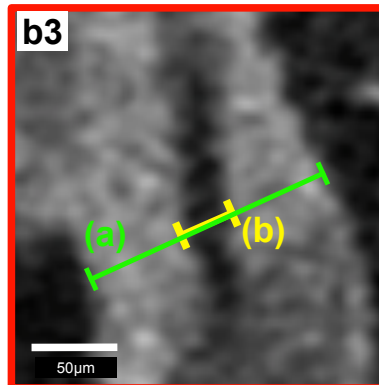
Ventricular End Systolic  
Maximal Diameter = ESD

**(b)** Outflow Tract View

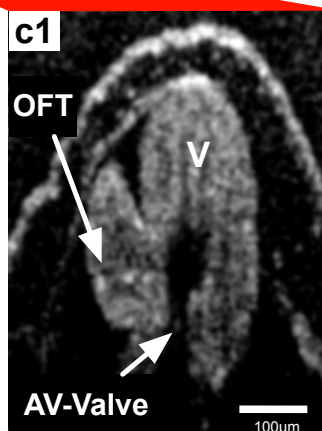
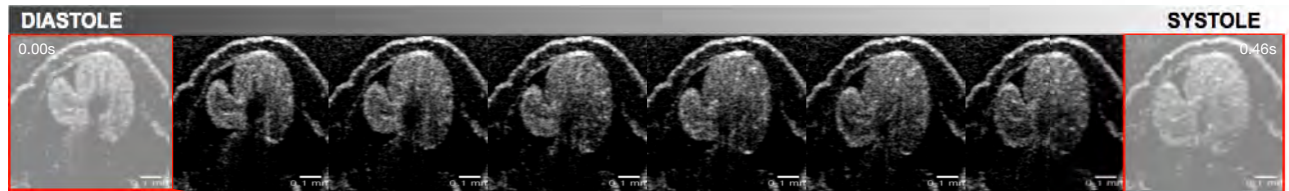


**(a)** Distal outflow tract  
maximal Diameter

**(b)** Distal outflow tract  
maximal Excursion  
Distance



**(c)** Lateral View



**(a)** Proximal outflow  
tract maximal Excursion  
Distance

