

Title

## Strain maps characterize the symmetry of convergence and extension patterns during Zebrafish gastrulation

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### Supplementary Materials:

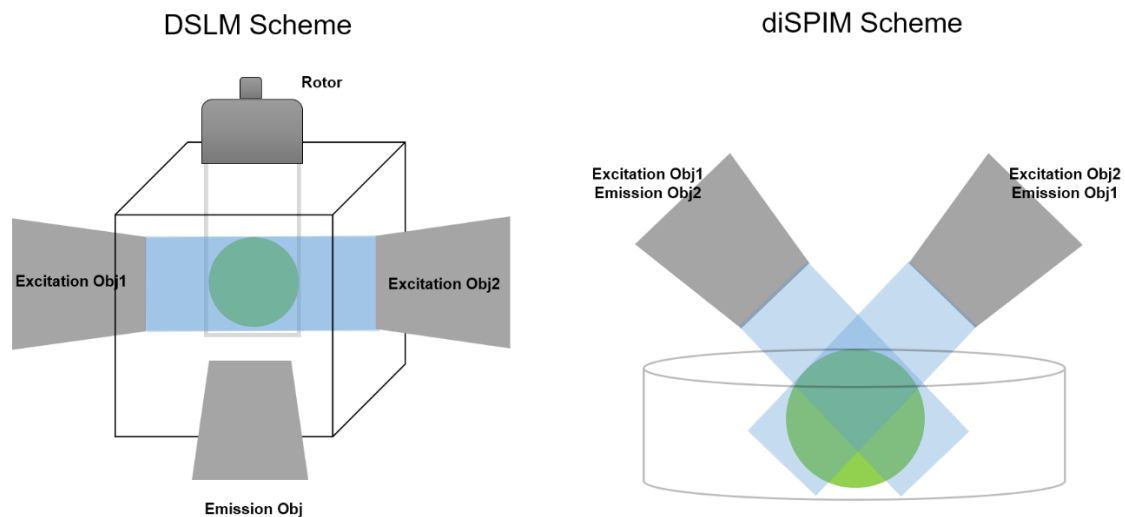
Movie-1 : The fluorescent images of the embryo development from Dorsal and Ventral views during the time course of our experiment.

Movie-2 : The Strain maps along Medio-lateral (Strain M-L) and Anterior-Posterior (Strain A-P) directions in the dorsal view, during the time course of our experiment.

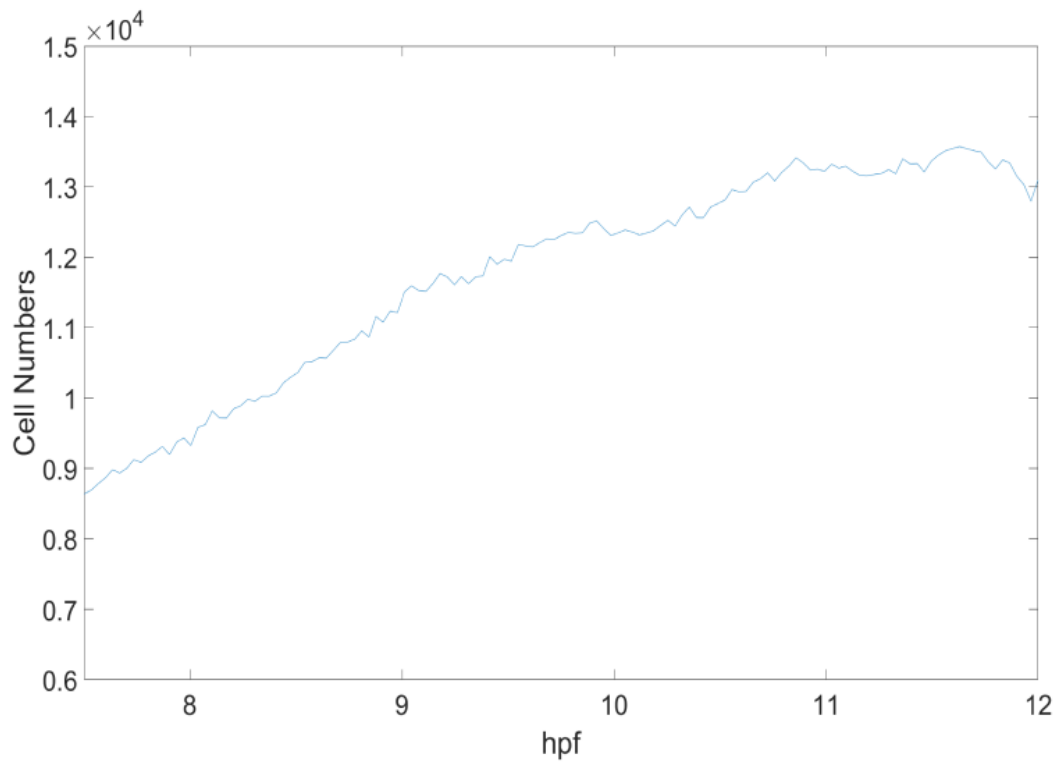
Movie-3 : The curl maps and Strain-trace maps in the dorsal view, during the time course of our experiment.

Movie-4 : The Strains maps of both control and C59 group along A-P and M-L directions in the dorsal view, during the time course of our experiment.

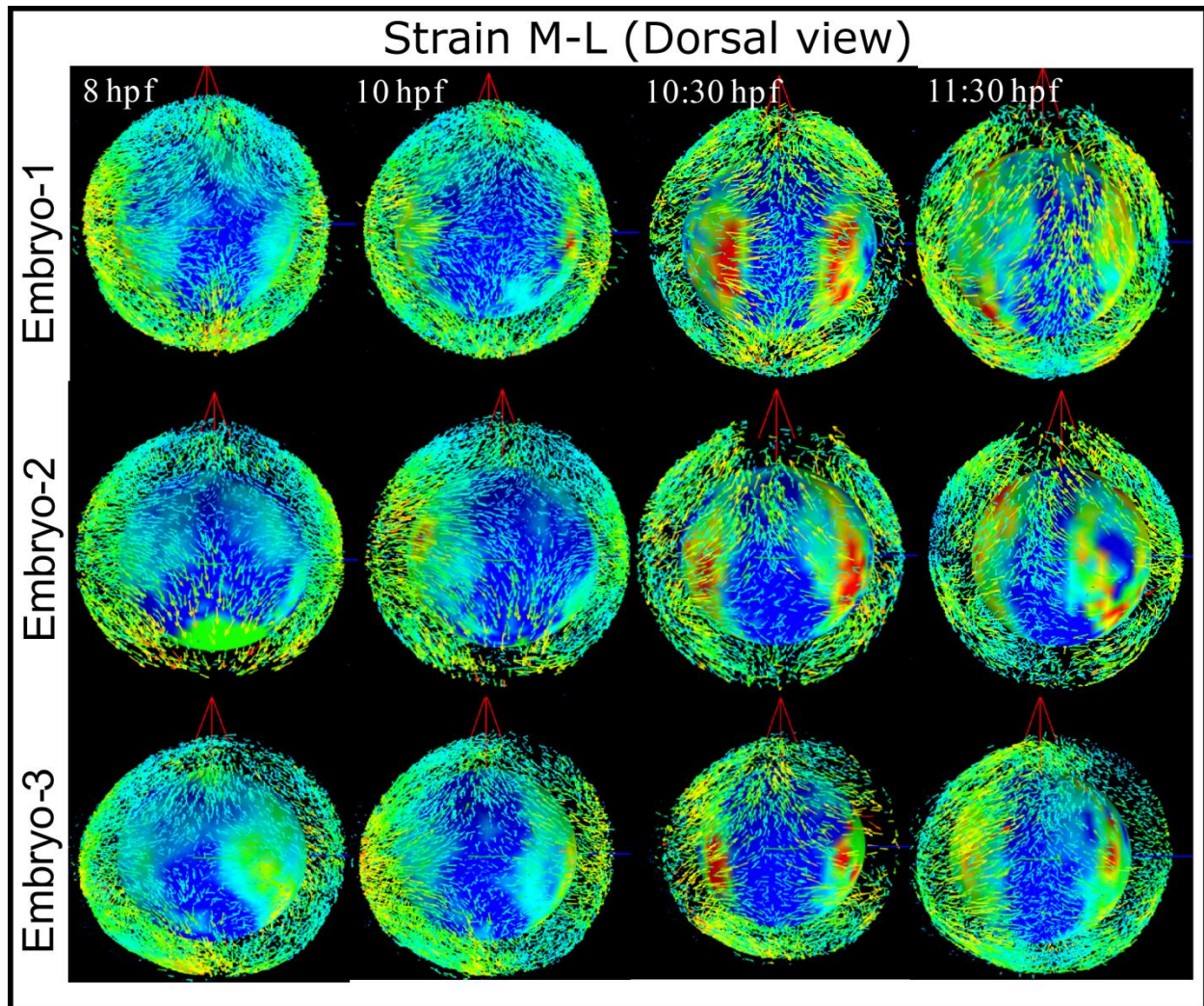
Movie-5 : The Strain maps of both control and C59 group of curl in the dorsal view, during the time course of our experiment.



**Supplementary Figure 1.** Illustration of imaging scheme for DSLM and diSPIM.

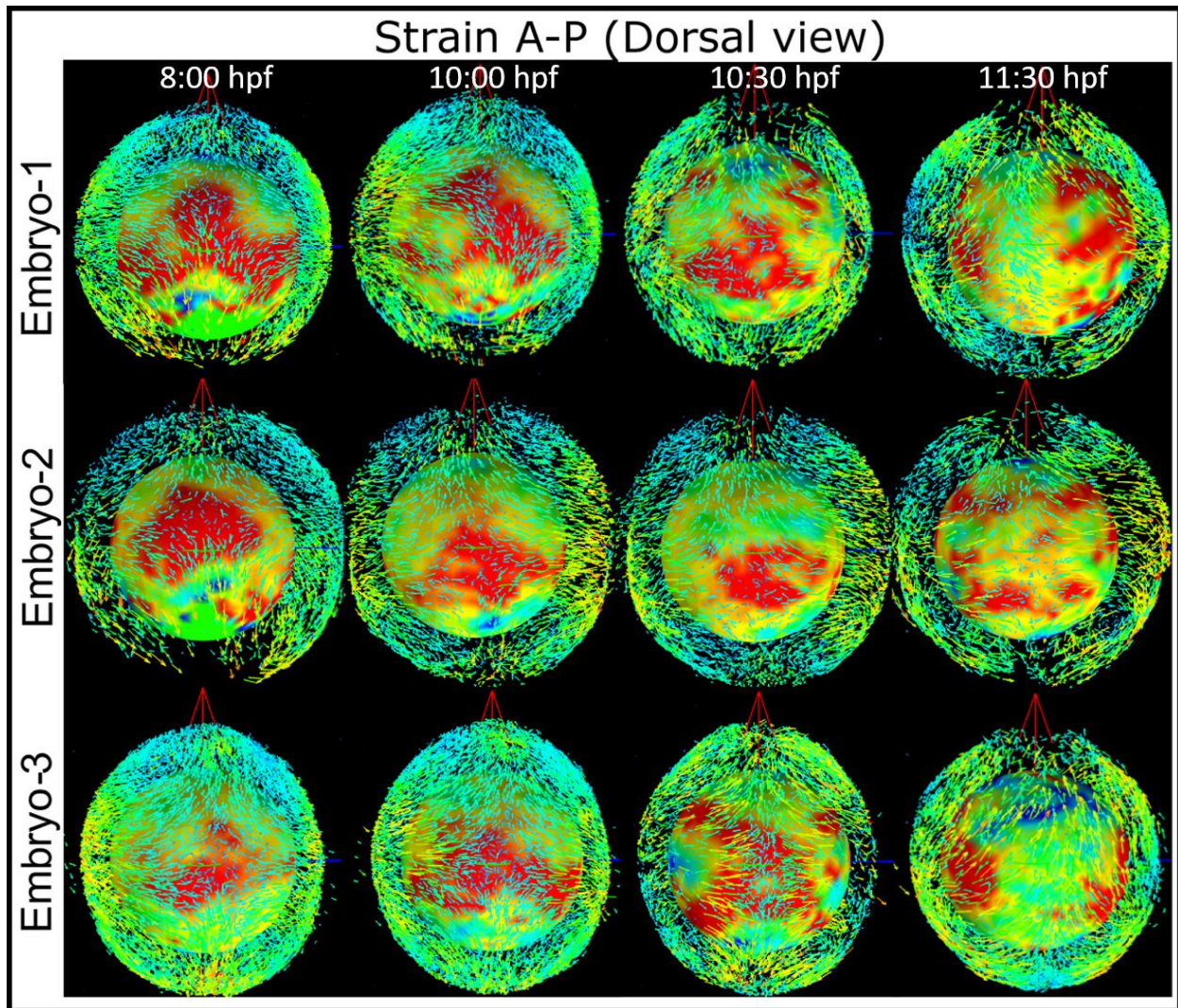


**Supplementary Figure 2:** The number of cells of the developing embryo during the time-plot of our experiment is plotted here.

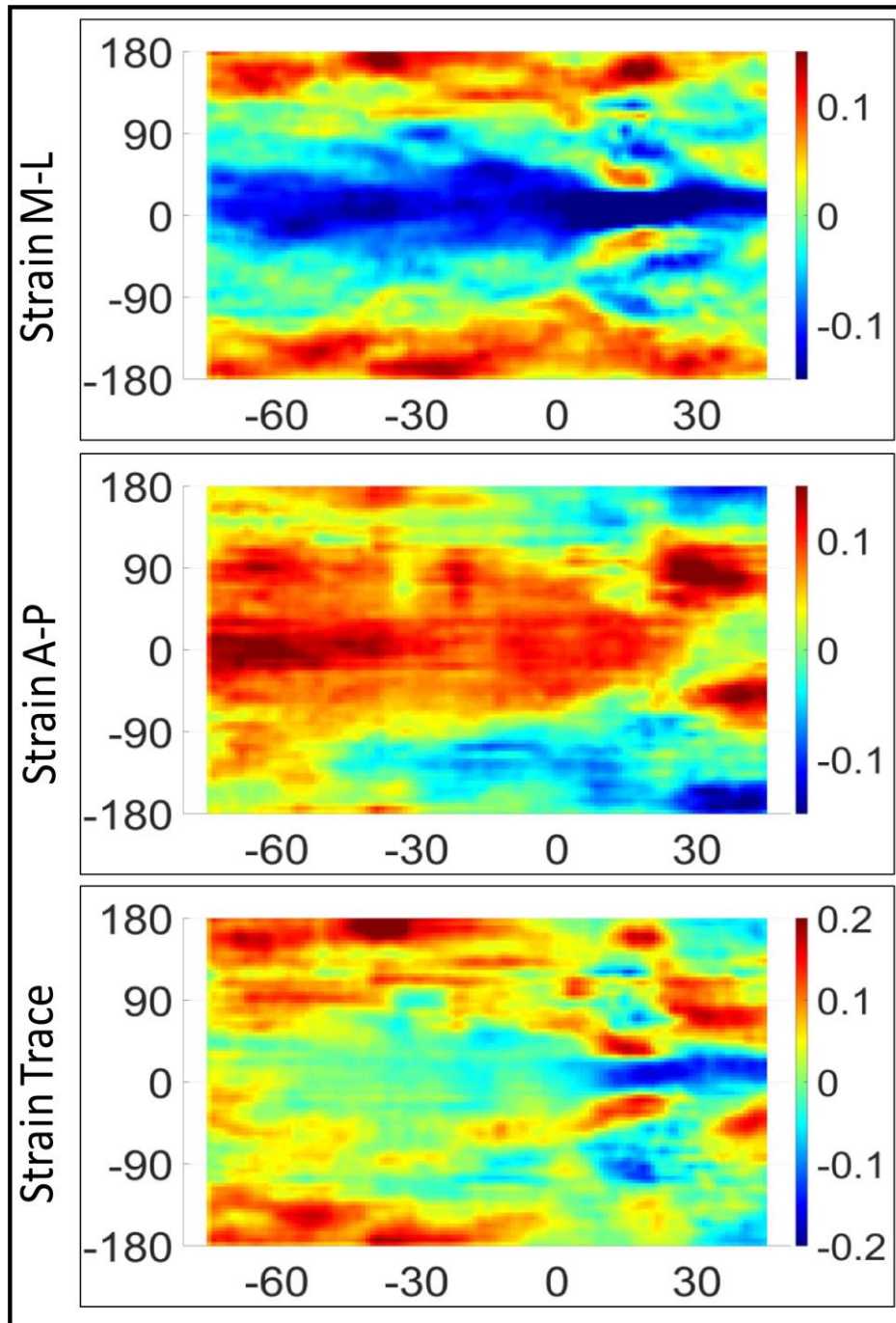


**Supplementary Figure 3:** The Medio-lateral strain maps (Strain M-L) across different embryos show the same compaction behaviour in the dorsal view, before 100% epiboly. At 30 minutes post 100% epiboly the A-P strain shows a expansion domains in both sides of the body axis.



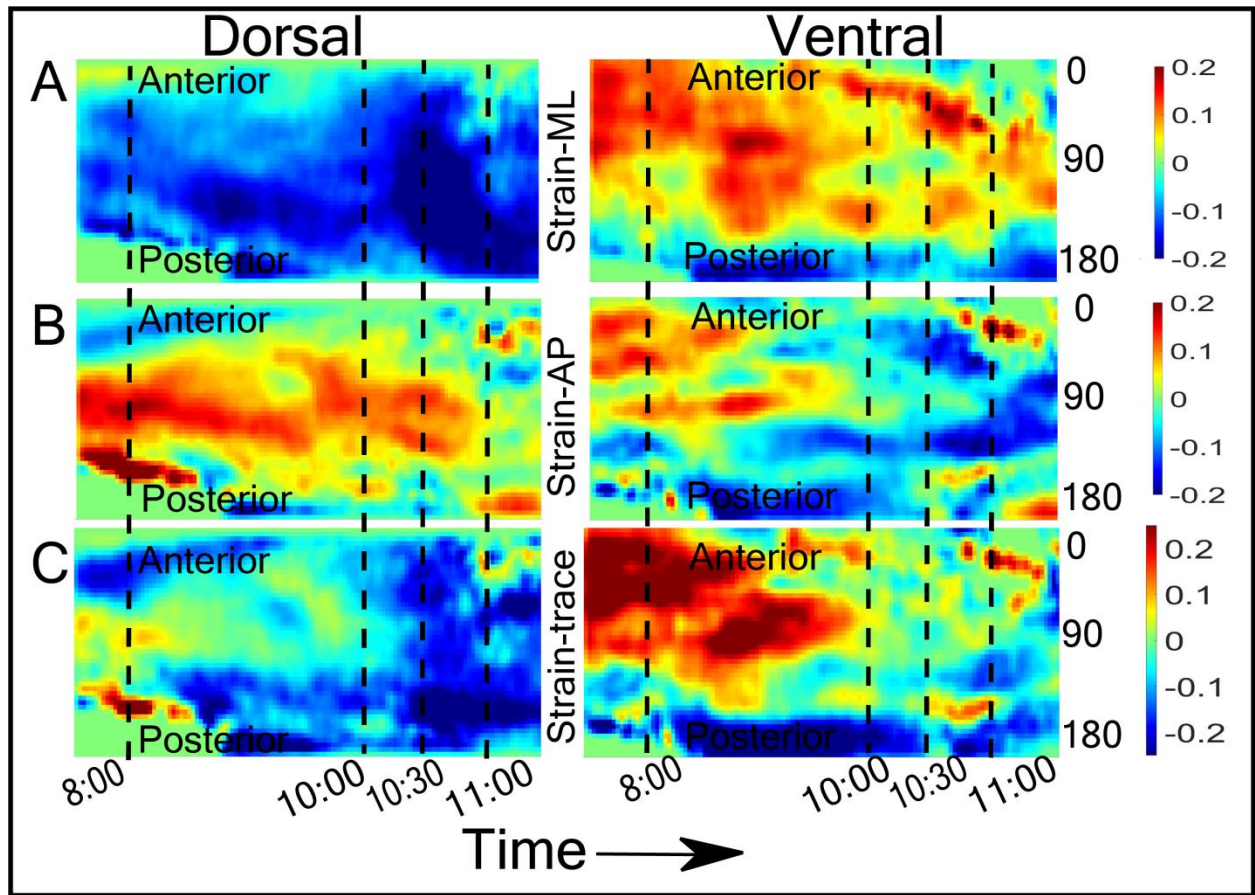


**Supplementary Figure 4:** The expansion in the Anterior-Posterior strain (Strain A-P) in the dorsal side is conserved across different embryos during the time course of our experiment.

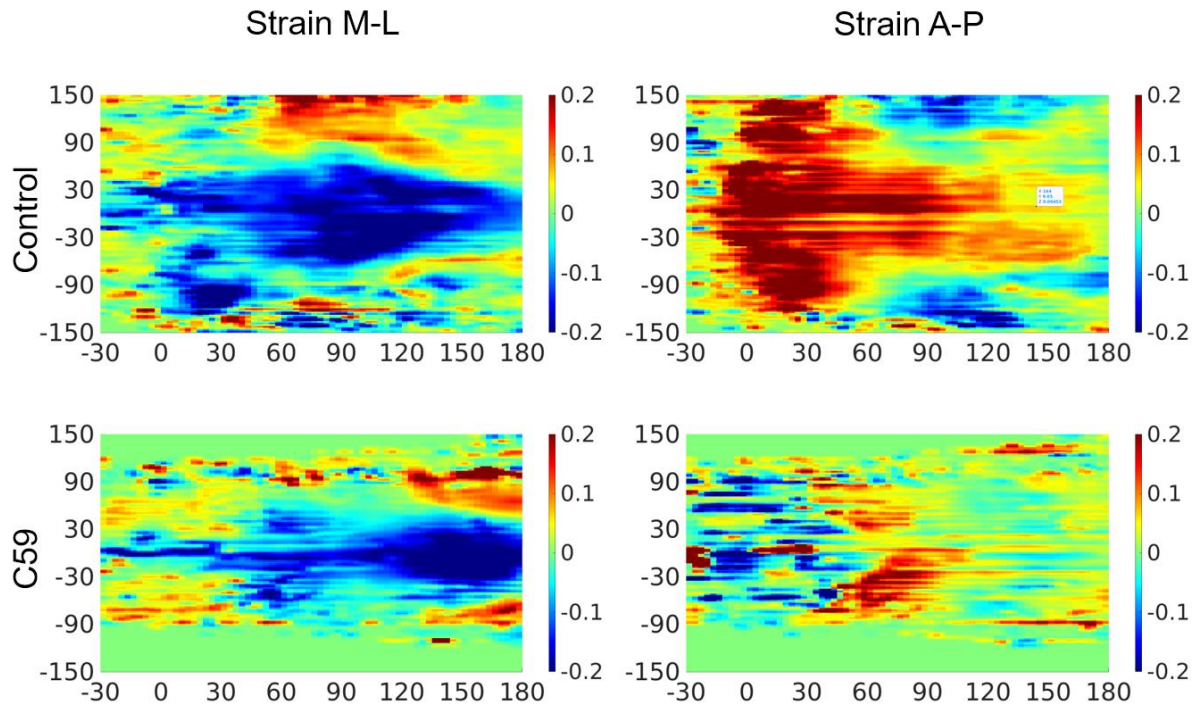


**Supplementary Figure 5:** The kymograph of Medio-lateral strain (Strain M-L), Anterior-Posterior strain (Strain A-P), and strain trace along the equatorial axis.





**Supplementary Figure 6:** The kymograph of Anterior-Posterior strain (Strain A-P), Medio-lateral strain (Strain M-L) and strain trace along body axis in Dorsal view and ventral view respectively. ( $0^\circ$  represents Animal Pole,  $180^\circ$  represents the Vegetal Pole).



**Supplementary Figure 7:** The kymograph of Medio-lateral strain (Strain M-L) and Anterior-Posterior strain (Strain A-P) along the equatorial axis for control group and C59 treated group.