

Abstract Submitted
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Quantifying the mechanics of embryonic tissues in vivo and in situ OTGER CAMPAS, University of California, Santa Barbara — The sculpting of tissues and organs involves a tight spatiotemporal regulation of several physical fields, including active mechanical stresses and the local material properties. Despite the relevance of mechanics in embryonic morphogenesis, very little is known about the mechanisms by which tissue mechanics affects/controls developmental processes, mainly because it has not been possible to quantify mechanics within developing tissues in vivo and in situ. I will present two new techniques that permit direct quantification of (1) mechanical stresses at both tissue and cellular scales and (2) the material properties of the cellular microenvironment, in situ within living tissues and developing organs. Using these novel techniques, we characterize the mechanics of cell aggregates (in vitro), living mouse mandibles (ex vivo) and live zebrafish embryonic tissues (in vivo).

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