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A Computational model for the joint onset and development

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HIGHLIGHTS

- We developed a mathematical model for Turing patterns that predicts joint cleavage sites
- Our prediction of the gene expression during development agrees with molecular expression profiles of joint development reported in literature
- From a mesenchymal ‘bud’ of a phalange, the model predicts growth, joint cleavage, joint morphology, and articular cartilage formation
- We proposed a simplified mathematical model of the regulatory mechanisms that influence the formation of joint

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