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embryo**

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**ABSTRACT**

In the sea urchin embryo, gastrulation is characterized by the ingression and directed cell migration of primary mesenchyme cells (PMCs), as well as the primary invagination and convergent extension of the endomesoderm. Like all cell shape changes, individual and collective cell motility is orchestrated by Rho family GTPases and their modulation of the actomyosin cytoskeleton. And while endomesoderm specification has been intensively studied in echinoids, much less is known about the proximate regulators driving cell motility. Toward these ends, we employed anti-sense morpholinos, mutant alleles and pharmacological inhibitors to assess the role of Cdc42 during sea urchin gastrulation. While inhibition of Cdc42 expression or activity had only mild effects on PMC ingression, PMC migration, alignment and skeletogenesis were disrupted in the absence of Cdc42, as well as elongation of the archenteron. PMC migration and

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