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Hecate/Grip2a Acts to Reorganize the  
Cytoskeleton in the Symmetry-Breaking  
Event of Embryonic Axis Induction

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When an embryo develops from a single cell into an adult organism, one of the earliest and most crucial events is the establishment of the body axes (head versus tail, front versus back). In fish, the establishment of the dorsal axis depends on the transport of “dorsal determinants” from one region of the egg to the site of axis induction. We determined that *hecate*, a zebrafish gene active during egg formation, results in a subtle symmetry-breaking event and is essential for organizing the path along which the dorsal determinants travel. Our data reveal new links between *hecate* (glutamate receptor interacting protein 2a) and axis induction, and highlight basic mechanisms by which small changes early in development translate into global changes in the embryo.