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OA Open Access paper

Cover Acyl-CoA synthetase (ACS)-mediated fatty acid metabolism regulates embryonic development in *C. elegans*. Shown here are microscopic images of a wild-type (top blue oval) and ACS-1 mutant (other three blue ovals) *C. elegans* embryos expressing GFP-tagged phospholipase C to mark the plasma membrane (net-like lines inside the ovals). In the somatic gonad, ACS-1 is required for biosynthesis of the branched chain fatty acid C17ISO, which in turn regulates lipid composition and membrane dynamics that are essential for embryogenesis. In the wild-type embryo (top oval), plasma membranes neatly separate individual blastomeres. ACS-1-mutant embryos (bottom left and middle ovals) display abnormal plasma membrane structures. As the cell cycle progresses in these mutant embryos, the partially divided cells accumulate multiplying nuclei (small circles in the right oval). [For details, see Kniazeva et al., p. 554.]