



Apr 15th, 10:00 AM - 11:00 AM

Are there Differences in Nutrient Assimilation among Cell-Lineages of Sea Urchin Embryos?

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Poster Presentation 39

**ARE THERE DIFFERENCES IN NUTRIENT ASSIMILATION
AMONG CELL-LINEAGES OF SEA URCHIN EMBRYOS?**

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Embryos of the sea urchins *Arbacia punctulata* and *Lytechinus variegatus* were used to test the hypothesis that differences exist among specific cell-lineages in the ability to assimilate nutrients from seawater. Embryos at different developmental stages (from unfertilized eggs to prism stage larvae) were incubated in a seawater solution of the iron-containing protein ferritin (2 mg/ml) for fixed time periods. Following each incubation period, specimens were fixed in neutral buffered formalin. To detect the presence of iron (from ferritin) in cells, experimental specimens and individuals not exposed to ferritin (controls) were incubated in a 3:2 mixture of 1% HCl and 2% Potassium ferrocyanide. The formation of a blue reaction product revealed those cells containing iron. Results indicate that the ability to assimilate nutrients is detectable between the 8-cell stage and a multicellular pre-blastula stage; and, assimilation is uniform among different cell-lineages.