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Examining Gene Expression during *Xenopus* Embryonic Development

During early stages of embryonic development, cells must undergo differentiation to form various tissues and organs. Cells express various genes as they undergo differentiation, but not all of these genes are known. We have identified several genes that may play an important role during development.  Minichromosome maintenance complex 3 (MCM3) is important in DNA synthesis. Palmdelphin (PALMD) is involved in cell membrane structure. Phosphoenolpyruvate carboxykinase 1 (PCK1) is an enzyme that metabolizes glucose. To observe mcm3, palmd, and pck1 during development, we fixed Xenopus embryos and used in situ hybridization to determine the expression patterns of these genes. We can also verify gene expression at various embryonic stages with Polymerase Chain Reaction (RT-PCR). We found that each gene has a unique expression pattern during embryonic development. In the future, it will be interesting to investigate what roles MCM3, PCK1, and PALMD might play during the differentiation of the vertebrate embryo.