



## Epigenetic strategies for germ cells to remember their germline roots



How epigenetic memory is passed from parents to offspring and through development are areas of intense investigation. In C. elegans, both sperm and oocytes transmit a memory of chromatin repression and gene expression to embryos in the form of modified histones, H3K27me for repression and H3K36me for expression. During DNA replication modified histones are passed to daughter chromatids and can provide chromatin memory for a few cell divisions. Histone-modifying enzymes (PRC2 for repression and MES-4 for expression) are needed to replenish histone modifications and provide long-term chromatin memory.

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