



Silencing by RNA interference, triggered using double-stranded RNA (dsRNA), is transmitted from parent to progeny in some animals. We examined the mechanism of this inheritance by delivering fluorescent dsRNA (magenta) into the body cavity of the worm *Caenorhabditis elegans*. The fluorescent dsRNA permeates interstitial spaces between cells, and can be seen within invaginations of the syncytial germ line and between sperm within the spermatheca. This extracellular RNA enters progeny by binding to yolk (green) that is present in the body cavity after being secreted by the intestine. The dsRNA and yolk are then imported together into proximal oocytes (bracket) that are about to be fertilized. Association between yolk and dsRNA can be even seen in the space between embryos within the uterus (arrowhead). Although yolk and dsRNA are present together as dynamic granules in oocytes and early embryos, their later fates are distinct: The dsRNA silences matching genes in the embryo whereas yolk is trafficked to the larval intestine. We do not yet know how the embryo distinguishes inherited nutrition (yolk) from inherited information (dsRNA).



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