

2. Abstract

Xenopus germ plasm originates in previtellogenic oocytes in an area rich in mitochondria - the mitochondrial cloud. After its first appearance, the germ plasm localises to the vegetative pole of the egg and takes the form of small islands. After fertilization, the germ plasm aggregates at the apex of the vegetal pole of the embryo and then it separates into blastomers directly surrounding the vegetal pole. The germ plasm consists of mitochondria, germinal granules, ribozomes and various ribonucleic acids (RNAs). In Xenopus, the germ plasm RNAs are required for the formation of the primordial germ cell line. XDead end is fundamental for the migration, differentiation and survival of germ cells. Embryos depleted of fatvg are defective in primordial germ cell (PGC) formation and cortical rotation and organelle transport are inhibited in these embryos.Xdazl is required for early PGC differentiation and indirectly contributes to the migration of PGCs through the endoderm. Some germ plasm proteins, for example, Fatvg and Xcat-2, also play an important role in the determination of the dorsal/ventral axis.