

Germ Cell Marker DDX4 (Vasa) Transiently Accumulates in Balbiani Body of Early Mouse Oocytes

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Abstract

RNA helicase DDX4 (Vasa) is a marker of germ cells. There is controversy about its intracellular distribution in early oocytes, reported by different authors to be uniform throughout the cytoplasm in mice or transiently associated with the oocyte-specific complex of organelles known as Balbiani body in humans. We performed immunohistochemical localization of DDX4 in sections from neonatal mouse ovaria. Prophase I oocytes from 1-day old mice showed reaction in a perinuclear aggregate, while in dictyate oocytes from 2-day old mice the reaction had diffuse staining throughout the cytoplasm. These results indicate that DDX4 is associated with the Balbiani body in early oogenesis of both mice and humans, and suggest that the Balbiani body in mammals may be a site of storage and regulation of mRNA as in other vertebrates.

Key words: DDX4, Vasa, oocytes, Balbiani body, meiosis