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Investigating the role of the novel LRWD1 protein in testis and spermatozoa.
探討新穎蛋白 LRWD1 在睪丸與精子上所扮演的角色

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Abstract

Background and Purpose: LRWD1 (Leucine-Rich repeats and WD repeat domain containing 1) is a testis-enriched gene. The human LRWD1 gene contains 15 exons and was mapped to chromosome 7q22.1. The protein was predicted to contain one leucine-rich repeats (LRR) and three WD-40 domains by SMART protein prediction web site (http://smart.embl-heidelberg.de/). The cDNA microarray analyses showed the transcript amount of this gene was significantly decreased in the testicular tissue of men with spermatogenic defect. **Methods and Results:** In our results, the LRWD1 protein was mainly expressed in postmeiotic germ cells. Immunofluorescence microscopic study of human and mouse spermatozoa showed strong homogeneous staining in the centrosome region (by colocalization with centrin) and less intense signal in the principal piece and tail region. It is assumed that the sperm centriole has an important role in the sperm motility and sperm morphology. Therefore, LRWD1 defects is probably not only correlated with decreased or absent motility of the sperm but might also be associated with sperm morphology. **Conclusions:** The study will provide valuable information regarding the roles of LRWD1 centrosomal proteins during spermatogenesis.