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**Transcriptional regulation of leucine-rich repeats and WD repeat domain containing 1 (*LRWD1*) by microRNA under reactive oxygen species****Teng Yen-Ni, Chia-Hui Su, Ming-Syuan Wu, Jie-Yun Tseng and Hsing-Yi Chen**  
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*LRWD1* (Leucine-Rich repeats and WD repeat domain containing 1) is highly expressed in the testes and down-regulated in the testicular tissues of the patients with severe spermatogenic defects. In previous study, *LRWD1* expressed in the centrosome of sperm and involved in microtubule growth. MicroRNA is an important factor of post-transcription regulation and regulates the translation and expression for gene. In the bioinformatics prediction, there are binding sites for miR-320a and miR-450a in the *LRWD1* 3'UTR by miRanda software and high expression at reproduction tissue for miR-320a and miR450a by miRnaMap software. The *LRWD1* 3'UTR was constructed to the pMIR plasmid and confirmed that miR-320a, not miR-450a, increased *LRWD1* expression by Dual-Luciferase Reporter Assay. *LRWD1* expression increased by transfected miR-320a mimic, but not in miR-450a mimic in NT2D1 cells. The expression of miR-320a and *LRWD1* were increased by hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) or Sodium Nitroprusside Dehydrate (SNP) treatment in TaqMan real time-PCR assay. Transfection mimic of miR-320a and miR-450a enhanced cell growth, but not in miR-450a. With this study, the post-transcriptional regulation of miR-320a and miR-450a for *LRWD1* will help us understand the function and roles of the miRNA in post-transcriptional regulation of *LRWD1* and may provide a rationale for further diagnosis and treatment of spermatogenic defect and male infertility diseases.

**Biography**

Teng Yen-Ni has her expertise in human genetics and reproductive medicine. She used the molecular biology technology and genetics in gene detection and congenital disease analysis.

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