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Dysfunction of miRNA biogenesis machinery proteins between adipose and ovary tissue contribute to PCOS etiology

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miRNAs are important regulators of glucose metabolism and oxidative stress, which play key roles in the pathogenesis of PCOS. The objective was to study the expression of miRNA biogenesis related genes, including *Dicer1*, *Ago2*, miR-15b and *miR-503* in adipose of PCOS and normal controls and further investigate the relationship of dysregulation of miRNA level with key parameters related to insulin resistance and oxidative stress in tissue level. PCOS patients and normal controls submitted to laparoscopic surgery were included, and adipose tissue and serum samples were collected. Significantly reduced expression of *Dicer1* was detected in adipose of PCOS patients. Correlation analysis indicated that *miR-15b* expression is positively correlated with *Glut4* expression and negatively correlated with T-SOD. Our study also showed that follicular fluid contains microvesicle, which express Dicer proteins and could mediate the effects on phenotype of cumulus cells in ovary. Dysregulation of miRNA biogenesis is related to the adipose insulin resistance and oxidative stress and *miR-15/16* family members; such as *miR-15b* is important for the insulin resistance and oxidative stress through targeting *Glut4* pathway, thus represent a promising target of PCOS diagnosis and therapy.

Biography

Xu Wenming has completed his PhD (Physiology) from Chinese University of Hong Kong and Post-doctoral training from Columbia University School of Medicine. He is the Principle Investigator of Joint Lab for Reproductive Medicine, Sichuan University-The Chinese University of Hong Kong, in West China Second University Hospital. He has published more than 30 papers in reputed journals such as *PNAS*, *Journal of Cell Science*, *Fertility and Sterility* and has been granted several awards such as First award of International Symposium on Frontiers in Life Sciences 2008.

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