

THE VARIANCE OF ZONA BIREFRINGENCE OF OOCYTES IN DIFFERENT STAGES AND ITS POTENTIAL MECHANISMS

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Objective: To investigate the differences in the birefringences of zona pellucida of oocytes in different maturation stages and further to analysis it's ZP components.

Design: Experimental study

Setting: Reproductive Medical Center, the first Affiliated Hospital, Sun Yat-sen University, China

Patient(s): All oocytes in GV stage were contributed by patients with PCOS and PCO.

Animal(s): Porcine COCs were aspirated from ovaries and cultured for 0, 24, 46hours, respectively.

Intervention(s): OCTAX ICSI Guard™ imaging system was used to measure human zona birefringence of the oocytes from GV to M II stage. ZP was prepared by mechanical method. The protein profiles were analyzed by label-free technique.

Main Outcome Measure(s): Zona birefringence of human oocytes in different maturation stages and porcine zona protein profiles.

Result(s): From GV stage to M II stage, the zona birefringences decreased gradually in both groups. There were significant differences in protein profiles of zona in different stages. With the growth and maturation of oocytes, expression of ZP2 increased gradually. And the expression of ZP3 was in the adverse tendency. As for ZP4, the expression in MI stage was highest.

Conclusion(s): With the growth and maturation of follicles, zona birefringence decreased gradually. And the changes of structure and protein profiles of zona may be involved in the process of zona birefringence changes.

Key Words: zona pellucida; birefringence; proteomics.