

# 5<sup>th</sup> World Congress on Biotechnology

June 25-27, 2014 Valencia Conference Centre, Valencia, Spain

## Embryo gene expression in response to maternal supplementation with glycogenic precursors in the rabbit

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Disturbing maternal metabolism during the first pregnancy and postpartum period is associated with sub fertility in rabbit does. Nutritional strategies can be used during those periods and its effects to improve reproductive management may affect periconceptual events and early embryo development. The goal was to elucidate if treatment with a glycogenic precursor such as propylene glycol (PG) could affect the maternal metabolic profile, follicular and oocyte quality and gene expression patterns in early embryos. Rabbit does were supplemented with 2.5% (v/v) PG from either mid-pregnancy and for 25 days of lactation (PG-GL group); only during lactation (PG-L group); or were not treated (control group). Ovarian parameters and embryos were studied at the end of treatment. At parturition serum non-esterified fatty acid concentrations increased whilst insulin decreased in all groups. Maternal feed intake was reduced in PG-supplemented does but glycaemia was maintained during the experimental period. When PG was suppressed, blood insulin immediately increased in PG-groups, but no differences in follicular population, follicular atresia, and nuclear and cytoplasmic oocyte maturation were observed compared with non-treated animals. Although embryo development was similar among groups, mRNA of SLC2A4, INSR, IGF1R, PLAC8, COX2 and IGF2R were up regulated in the blastocysts of PG-GL does. Transcripts of SOD1 were lower in PG-L embryos; but NOS3 and TP53 were similar among groups. PG did not affect the maternal metabolic profile during the postpartum period, nor the ovarian response or number of embryos developed. Nonetheless, PG supplied from mid-pregnancy modified mRNA transcripts involved in some important developmental and metabolic events in the blastocysts of those females. More experiments are needed to elucidate the physiological consequence of these results.

### Biography

O G Sakr has completed his PhD from Polytechnic University of Madrid as he was awarded a personal scholarship. He is the director of Rabbit production unit in Faculty of agriculture, Egypt. He has made more than 16 presentations. He has published more than 8 papers in reputed scientific journals. He was awarded The Academic International publications in High Impact Factor Periodicals rewarded by Cairo University for 3 successive years.

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