

2nd Indo-Global Summit & Expo on

Veterinary

October 26-28, 2015 Hyderabad, India

Expression of cell growth regulatory factor IGF-2 mRNA in sheep embryos

Avantika Mor¹, S Mondal¹, I J Reddy¹ and N P Soumya²

¹National Institute of Animal Nutrition and Physiology, India

²College of Agriculture, India

Early embryonic mortality is a major problem in ruminants and accounts for a main component of post fertilization losses. Development of embryo is influenced by intrinsic defects within the embryo including aberration in expression of developmentally important genes. Insulin-like growth factor 2 (IGF-2), known as multiplication stimulating activator (MSA) has identical bioactivities similar to IGF-1 and autocrine regulator of cell proliferation, paracrine growth and survival factor for mammalian embryo development. The present study was undertaken to investigate the variation in expression profiling of IGF-2 mRNA during different embryonic developmental stages in sheep. Total RNA was extracted from different stages of embryo immature (n=100), mature (n=100), 2 cell (n=50), 4 cell (n=25), 8 cell (n=12), 16 cell (n=6), morula (n=5) and blastocyst (n=5). Approximately 100 ng total RNA was heat denatured and reverse transcribed by incubation at 50° C for 50 min using superscript III reverse transcriptase, RNase OUT, DTT, MgCl₂, dNTP mixture and oligo (dT) in a final volume of 20 µl of 1X RT buffer. The reaction was terminated by heating at 85° C for 5 min and cooling on ice. Real time PCR reaction was done by using 2 µl cDNA, 10 µl Fast SYBR green reaction mixture and IGF-2 primers. Our results showed that IGF-2 mRNA expression was observed in all developmental stages of sheep IVF embryos. The expression of IGF-2 mRNA decreased from 2-cell stage up to 8-cell stage and increased thereafter up to blastocyst stage.

Biography

Avantika Mor has completed her MVSc (Animal Biotechnology) in 2008 from JNKVV, Jabalpur, MP. She is currently working as Senior Research Fellow under National Agricultural Science Fund project "Deciphering the mechanism of aberrant maternal recognition of pregnancy (MRP) events in sheep and buffalo under heat and nutritional stress". She has published 3 papers in various national and international journals of repute. She is pursuing PhD in Biotechnology under the topic "Expression profiling of developmentally important genes in different stages of sheep embryos".

dravants81@gmail.com

Notes: