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The Hyaluronic Acid Receptor (CD44) is Expressed in Early Stage Embryos of Porcine

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Hyaluronic acid (HA) is one of the most abundant glycosaminoglycans (GAGs) in the female reproductive tract such as uterine, oviductal and follicular fluids in mouse, pig, cattle and human. CD44 is the principal cell membrane receptor for HA, expressed from the 1-to 8-cell stage in human embryos, during post-implantation mouse and bovine embryogenesis and on the surface of differentiated embryonic stem cells. In this study, we have analyzed by immunofluorescence, whether CD44 is present in porcine matured oocytes, fertilized oocytes and early stage embryos derived from *in vivo*, *in vitro* and chemical-activated embryos. Porcine cumulus-oocyte complexes (COCs) were aspirated from follicles(4~6mm) and were selected for IVM and incubated for 44h. Oocytes with compacted cytoplasm were used for IVF and chemical-activation. The embryos derived from *in vivo* were collected with the mid ventral laparotomy around 29h after natural mating. Fertilized oocytes were cultured for 7day and the different stages of development for immunofluorescence assay were separated every 24h of culture. The CD44 receptor was detected at every observation time examined, however, the expression pattern of CD44 was especially higher in 2-, 4-cell and blastocyst stages. CD44 is expressed on the surface and in the cytoplasm of porcine embryos in different stages and groups (the embryos were derived *in vivo*, *in vitro* and chemical activation) of development.

Key words: *Hyaluronic acid, CD44, Porcine, Immunofluorescence, Embryo*