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## Competency of Diploid Parthenogenesis Embryonic Stem Cell (pESC) for Cell Therapy

Arief Boediono\*

Lab. of Embryology, Faculty of Veterinary Medicine,  
Bogor Agricultural University, Indonesia.

\*Corresponding author: [aboedi@yahoo.com](mailto:aboedi@yahoo.com)

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Naturally, mammalian embryo resulting from the fertilized oocytes by sperm and develops to the zygote with diploid chromosome. Through the embryo engineering, mammalian embryo also could be produce by: nuclear transfer and parthenogenesis. Embryo produce by nuclear transfer method could develop to term with very limited results. However, parthenogenetic embryos could not develop to term because of the incorrect expression of imprinted genes (genomic imprinting).

Embryonic Stem Cell (ESC) develops from isolation of Inner Cell Mass (ICM) from fertilized embryo in the blastocyst stage. Cell therapy using ESC is still has an ethical controversial because of the fertilized embryo has a competency to develop to term. Similarly, diploid parthenogenetic embryo has a potential source of ICM to produce ESC we called parthenogenesis Embryonic Stem Cell (pESC). The advantaged of pESC are: 1) it should no ethical controversial because the pESC obtained from the unfertilized embryos (resulted from activated oocytes) and, 2) it should less rejection because the pESC has only one set of major histocompatibility (MHC) antigens from female.