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Genetics of Embryo Development and Reproduction Research

Guest Editor:

Prof. Dr. Enqi Liu

1. Laboratory Animal Center,
Xi'an Jiaotong University, Xi'an,
China
2. Translational Medicine
Institute, Institute of
Cardiovascular Science, Xi'an
Jiaotong University, Xi'an, China

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Message from the Guest Editor

Dear Colleagues,

The fertilization of oocyte and sperm to produce a new organism is the culmination of numerous intricately regulated cellular processes. After fertilization, gametes develop from a highly differentiated state to a pluripotent state, and then they undergo early embryogenesis. Paternal and maternal chromatin structures and genomes undergo dramatic changes, with the latter experiencing genome-wide epigenetic modifications or reprogramming. The transcriptome, proteome, and metabolome of the early embryo also exhibit significant transformations, all of which can regulate the events of embryonic development and the entire lifespan of offspring. Until now, several important theories and mechanisms concerning the regulation of early animal embryogenesis have been elucidated, triggering the emergence of important technologies such as assisted reproduction, animal breeding and so on. However, the early embryonic development process is complex, and its mechanisms are not fully understood. This Special Issue will focus on findings associated with the genetic programs of early animal embryogenesis by utilizing new research in this area.



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Special Issue



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Editor-in-Chief

Prof. Dr. Selvarangan Ponnazhagan

Department of Pathology, The
University of Alabama at
Birmingham, 1825 University
Blvd, SHEL 814, Birmingham, AL
35294-2182, USA

Message from the Editor-in-Chief

Genes are central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fastmoving field. There is a need for good quality, open access journals in this area, and the *Genes* team aims to provide expert manuscript handling, serious peer review, and rapid publication across the whole discipline of genetics. Starting in 2010, the journal is now well established and recognised.

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Genes Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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