J. Mamm. Ova Res. Vol. 33 (2), 77, 2016

Mini-Symposium:
A new era of human assisted reproductive technology

Preface

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Assisted reproductive technology (ART) has been used as an effective way to alleviate the burden of infertility. ART involves a range of procedures to circumvent infertility, such as *in vitro* fertilisation (IVF), intracytoplasmic sperm injection (ICSI) and embryo transfer. Millions of babies have been born through the use of ART. Recently, many breakthrough studies have been reported in the field of reproductive biology, and these findings may lead to new technological advances in ART. In this Mini-Symposium, we would like to summarise such achievements in “A new era of human ART”.

Drs. Irie, Kim and Surani summarise the recent progress in the *in vitro* production of germ cells. Drs. Tachibana, Shiga and Yaegashi present a comprehensive review of mitochondrial replacement therapy (MRT) for inherited mitochondrial diseases. Drs. Arima and Okae show DNA methylation dynamics in mammalian embryos and discuss the application of genome-scale DNA methylation analysis for diagnostic purposes. Dr. Tsuge summarises ethical considerations for the new prenatal genetic test, Non-Invasive Prenatal Test (NIPT).

I truly hope that this Mini-Symposium provides a precious opportunity to deepen our understanding of these promising technologies. I am immensely grateful to all the authors for their invaluable contribution to this volume of the Journal of Mammalian Ova Research.