

TABLE OF CONTENTS

A Laboratory Guide to the Mammalian Embryo

Preface

Acknowledgements

List of Contributors

Abbreviations

1:Follicle development in vitro, Norah Spears, Evelyn E. Telfer and Alison A. Murray

2:Preparation of gametes, in vitro maturation, in vitro fertilization and embryo recovery, Michelle Lane and David Gardner

3:Culture of the mammalian preimplantation embryo, David Gardner and Michelle Lane

4:Assessment of embryo development and viability, Denny Sakkas, Michelle Lane and David Gardner

5:Micromanipulation: ICSI, Gianpiero Palermo, Queenie V. Neri, Takumi Takeuchi, Lucinda L. Veeck, Zev Rosenwaks

6:Micromanipulation: Biopsy, Joyce Harper and Alpesh Doshi

7:Analysis of intracellular ions: pH and calcium, Michelle Lane, Jay Baltz and David Gardner

8:Nutrient uptake and metabolite production and enzyme activity and regulation, David Gardner and Michelle Lane

9:Metabolic Pathway, Don Rieger

10:Confocal imaging of structural molecules in mammalian gametes, Calvin Simerly, Ricardo Moreno, João Ramalho-Santos, Laura Hewitson, and Gerald Schatten

11:Fluorescent in situ hybridization, Leeanda Wilton

12:Assessment of ploidy, telomere length and telomerase activity in oocytes and embryos, W. A. King, D. H. Betts, W. Slimane and P.K. Basur

13:Microscale RNA isolation from mammalian embryos, C. Wrenzycki, A.J. Watson,

and M. Calder

14:Relative mRNA transcript abundance in early embryos by Reverse Transcription-Polymerase Chain Reaction (RT-PCR), P. A. De Sousa and A. J. Watson

15:Characterization of novel genes during early development by application of differential display RT-PCR, Dave Natale

16:Two-dimensional protein gel database analysis of embryos, oocytes, and oocyte-associated granulosa cells, K. E. Latham, G. Nourjanova, K. Wigglesworth and J. J. Eppig

17:Antisense disruption of gene expression in the preimplantation embryo, Lisa C Barcroft, D Holstead Jones-Taggart and Andrew J Watson

18:Gene subtraction and analysis, M. A. Sirard and C. Robert

19:Analysis of apoptosis in the preimplantation embryo, Daniel Brison Anthony D Metcalfe, Debra J Bloor, Helen R Hunter, Gerard Brady, Susan J Kimber

20:Cytoplasmic Signaling and Cell Cycle Control in the Mouse Egg and Embryo, D. P. Baluch, C. M. Pauken, and D. G. Capco

21:Human Embryonic Stem, Susan E. Lazendorf, Catherine A. Boyd and Diane L. Wright

22:Spermatogonial Transplantation, Makoto Nagano

23:Somatic Cell Nuclear Transfer, Paul De Sousa, William Ritchie, Andras Dinnyes, Tim King, Lesley Paterson, and Ian Wilmut

24:Cryobiology; slow freezing vitrification of embryos, Tetsunori Mukaida and Magosaburo Kasai.