

Contents

List of contributors ix
Foreword – Alan Trounson xi

Section 1 – Culture media and solutions

1. **Overview** 1
Patrick Quinn
2. **Media and embryo interactions** 4
Patrick Quinn
3. **Female tract environment and its relationship to ART media composition** 21
Henry J. Leese and Sarah-Louise Whitear
4. **Buffering systems in IVF** 30
Natalie A. Clark and Jason E. Swain
5. **Essential features in media development for spermatozoa, oocytes, and embryos** 47
David Mortimer and Sharon T. Mortimer
6. **Macromolecular supplementation of embryo culture media** 68
Thomas B. Pool
7. **Monozygotic twinning and assisted reproduction. Laboratory or clinical?** 80
Marius Meintjes
8. **Amino acids and ammonium** 95
Deirdre Zander-Fox and Michelle Lane
9. **Growth factors and cytokines in embryo development** 112
Sarah A. Robertson and Jeremy G. Thompson

10. **Osmolality** 132
Jay M. Baltz
11. **pH control in the embryo culture environment** 142
Joe Conaghan
12. **In vitro maturation of immature human oocytes** 155
Ri-Cheng Chian, Shan-Jun Dai, and Yao Wang
13. **Oocyte and embryo cryopreservation media** 172
Diana Patricia Bernal, Ching-Chien Chang, and Zsolt Peter Nagy
14. **International regulation of ART media** 183
Theresa Jeary

Section 2 – Culture systems

15. **Culture of embryos in dynamic fluid environments** 197
André Monteiro da Rocha and Gary Daniel Smith
16. **Time-lapse imaging of embryo development: using morphokinetic analysis to select viable embryos** 211
Markus H. M. Montag, Kamilla S. Pedersen, and Niels B. Ramsing
17. **Optimizing culture conditions** 235
Kathleen A. Miller

Cambridge University Press

978-1-107-61953-1 - Culture Media, Solutions, and Systems in Human ART

Edited by Patrick Quinn

Table of Contents

[More information](#)

viii

Contents

18. **Low cost IVF** 245
Luca Gianaroli, M. Cristina Magli, and
Anna P. Ferraretti
19. **Incubators old and new** 258
Eduardo Kelly and Takeo Cho
20. **Incubator management** 270
William R. Boone and H.
Lee Higdon III

Section 3 – Summary and conclusions

21. **Summary and conclusions** 277
Patrick Quinn

Index 279

*Color plate section between pp. 20
and 21*