

Preface contributors

In the past decade greater emphasis has been placed on investigation of the human male gamete. As a consequence many unique and revealing characteristics have been identified; providing greater insight and understanding regarding human sperm production, maturation, and function. However, there has not been a comprehensive book on these topics published for more than 8 years. The focus of this book will be on the human and where data is lacking non-human animal species will be substituted to serve as representative example.

The composition of the spermatozoon, always regarded as critical for successful fertilization, has gained even greater significance in the events post-fertilization. The fidelity of the genome in its composition and construction are known to significantly influence fertilization, embryogenesis and live birth. Several contributions to this book elegantly detail the overt and more subtle characteristics of both the competent and dysfunctional sperm genome complex.

Historically, the spermatozoon has somewhat been viewed as a typical single cell; meaning that its membranes, organelles and metabolic activities are all connected. Emerging data clearly demonstrates the uniqueness of the spermatozoon in that discrete compartments can be identified whose physiology and biochemistry are separable. Several of the chapters herein offer intriguing revelations in this regard.

The yin and yang image that forms the central core of the micrograph on the front of this book serves as a symbolic reflection of the book's subtitle: production, maturation, fertilization, regeneration. Indeed, the genomic and proteomic eras have heralded a new age for investigation of the spermatozoon and amazing results are being found. The ultimate chapter in this book details of how sperm are born and, yes, can be reborn from embryonic stem cell precursors.

It is our hope that this dynamic volume will serve as a cornerstone resource for all students and research workers whether new to the field or experienced. We believe it will serve as a key resource for and a reflection of the outstanding invigorated research activity taking place in this exciting field.

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