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Nota di contenuto	Oocyte Physiology and Development in Domestic Animals; Contents; Contributors; Preface; Acknowledgments; 1 Oocyte Development before and during Folliculogenesis; 1.1 Introduction; 1.2 Germ Cell Cyst and Ovigerous Cord Formation; 1.3 Meiotic Entry and Progression; 1.4 Follicle Formation; 1.5 Follicle Development; 1.6 Steroid Hormone Signaling in Oocyte Development; 1.7 Summary; References; 2 The In Vitro Culture of Ovarian Follicles: A Brief History and Current Considerations; 2.1 Introduction; 2.1.1 Ovarian Follicles; 2.1.2 Follicle Culture and Fertility Preservation 2.2 A Brief Historical Review of In Vitro Follicle Culture2.3 State-of-the-Art In Vitro Follicle Culture; 2.3.1 Alternative and Complementary Strategies; 2.4 The Future of Ovarian Follicle Culture; Acknowledgments; References; 3 Regulation of Oocyte Meiotic Resumption by Somatic Cells; 3.1 Meiotic Resumption Is Negatively Regulated in a cAMP-Dependent Manner; 3.2 The Regulation of cAMP Level in Mouse Oocytes; 3.3 The Expression and Roles of PDEs in both Cumulus Cells and Oocytes in Domestic Animals concentration; 3.4 Closure of Gap Junctional Communication 3.5 How to Activate the ERK1/2 Pathway in Cumulus Cells of COC3.6 ERK1/2 in Cumulus Cells Is Required for Meiotic Resumption; 3.7 Dynamic Changes of Kinase Activities within Oocytes; 3.8 Conclusion;

References; 4 Oocyte-Secreted Factors in Domestic Animals; 4.1 Introduction; 4.2 Historical Background; 4.3 Localization and Specificity; 4.3.1 TGF Superfamily; 4.3.2 Fibroblast Growth Factors; 4.4 Structure and Genetic Diversity of Gdf9 and Bmp15; 4.5 Signalling Mechanisms of Gdf9 and Bmp15; 4.6 Roles of Oocyte-Secreted Factors; 4.6.1 Follicle Growth, Cell Proliferation, and Apoptosis 4.6.2 Regulation of Steroidogenesis and Luteinization 4.6.3 Cumulus Cell Expansion; 4.6.4 Cumulus Cell Metabolism; 4.7 Manipulation and Use in Reproductive Technologies; 4.7.1 Altering Ovulation Rate-Antibodies; 4.7.2 In Vitro Embryo Production; 4.8 Concluding Remarks; References; 5 MicroRNAs in Oocyte Physiology and Development; 5.1 Introduction; 5.2 Biogenesis of miRNA; 5.3 Recognition and Post-Transcriptional Regulation of Target mRNA by miRNA; 5.4 miRNA in Germ Cell Differentiation and Oogenesis; 5.5 Expression and Regulation of miRNA in Oocyte Development 5.6 miRNAs in Oocyte Maturation and Competence 5.7 miRNAs as Temporal Regulatory Cascades of Maternal mRNA Translation; 5.8 miRNAs in Oocyte Development in Relation to Endocrine Control; 5.9 miRNA Regulation of Epigenetic Mechanisms in the Oocyte; 5.10 Strategic Approaches and Challenges to Study the Role of miRNAs in Oocytes; 5.11 Concluding Remarks; References; 6 Bovine Oocyte Gene Expression: Identification of Functional Regulators of Early Embryogenesis; 6.1 Introduction 6.2 Potential Contribution of Oocyte-Specific Transcriptional and Post-Transcriptional Regulators to Bovine Oocyte Competence: Available Evidence and Gaps in Knowledge

Sommario/riassunto

Oocyte Physiology and Development in Domestic Animals reviews the most recent advances in the research of physiological and biochemical mechanisms underlying oocyte growth and development, providing readers with the fundamental understanding of these key processes and summarizing this important field of research. The book covers multiple molecular and physiological mechanisms including initiation of oocyte growth during folliculogenesis and in vitro follicle culture to support oocyte competence, that are critical to health and quality. Physiological process ranging from gene expression
