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Nota di contenuto	Intro -- Contents -- Contributors -- Abbreviations -- 1. Follicle Development in Vitro -- 2. Preparation of Gametes, in Vitro Maturation, in Vitro Fertilization, and Embryo Recovery and Transfer -- 3. Culture of the Mammalian Preimplantation Embryo -- 4. Assessment of Preimplantation Embryo Development and Viability -- 5. Micromanipulation of Gametes -- 6. Micromanipulation: Biopsy -- 7. Analysis of Intracellular Ions in Embryos: pH and Calcium -- 8. Assessment of Nutrient Uptake, Metabolite Production, and Enzyme Activity -- 9. Metabolic Pathway Activity -- 10. Confocal Imaging of Structural Molecules in Mammalian Gametes -- 11. Fluorescent in situ Hybridisation for Detection of Aneuploidy in Single Human Blastomeres for Preimplantation Genetic Diagnosis -- 12. Assessment of Ploidy, Telomere Length, and Telomerase Activity in Oocytes and Embryos -- 13. Microscale RNA Isolation from Mammalian Embryos -- 14. Relative mRNA Transcript Abundance in Early Embryos by Reverse

Transcription-Polymerase Chain Reaction -- 15. Characterization of Novel Genes during Early Development by Application of Differential Display RT-PCR -- 16. Two-Dimensional Protein Gel Database Analysis of Embryos, Oocytes, and Oocyte-Associated Granulosa Cells -- 17. Antisense Disruption of Gene Expression in the Preimplantation Embryo -- 18. Gene Subtraction and Analysis -- 19. Analysis of Apoptosis in the Preimplantation Embryo -- 20. Cytoplasmic Signaling and Cell Cycle Control in the Mouse Egg and Embryo -- 21. Human Embryonic Stem Cells -- 22. Spermatogonial Transplantation -- 23. Somatic Cell Nuclear Transfer -- 24. Cryobiology: Slow Freezing Vitrification of Embryos -- Index.

Sommario/riassunto

Drawing from recent work with embryos from rodents, domestic animals, and primates, this practical guide describes the theory and protocols for performing biochemical, microscopic, and genetic techniques that have been developed and applied at the single-cell level. The techniques are the result of both new research and updates to established proce.
