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The Cell Biology of Fertilization

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Deadline for manuscript
submissions:

closed (31 March 2024)

Message from the Guest Editors

Fertilization that is required for activating oocytes stimulated at different maturation stages is a critical process in embryo development. During the past few years, studies on the sequential spatial/temporal series of fast events regulating the fertilization process have provided live cell imaging methodologies and insights for clarifying the changes induced by the egg's extracellular coats on the sperm physiology and the interaction of species–species complementary receptors on the sperm and egg plasma membranes. Following gamete fusion, the changes in the egg plasma membrane potential, intracellular calcium and pH, and the subsequent actin remodeling to ensure monospermic fertilization and regulate cleavage demonstrate the complex program of cell signaling in sustaining the control of vital cellular activities. Thus, in addition to shedding light on the cell signaling between male and female gametes, studies on maturation and fertilization processes using large cells will help us understand the basic structural and biochemical mechanisms regulating critical cellular functions in response to a myriad of stimuli.



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Special Issue



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Message from the Editorial Board

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