

The first comprehensive, systematic review of cellular domains

Cellular domains play vital roles in a wide range of cellular functions. Defining cellular domains and understanding the molecular basis of their formation is essential to the study of cell functionality. This authoritative reference provides the most comprehensive analysis available on cellular domains, with emphasis on the definition and molecular composition of the domain as well as the functional implications of domain organization.

Each chapter focuses on a different domain and is supported by figures defining the domain. Highlighting the latest advances in the field, the book's extensive coverage includes:

- **Membrane domains**—Cytoskeleton-induced meso-scale domains, Clathrin-coated pits, Caveolae, Lipid rafts, and Modeling membrane domains
- **Organellar domains**—Mitochondria, Endoplasmic reticulum, Golgi apparatus, Endosomes, Lysosomes and phagosomes, and Endoplasmic reticulum junctions
- **Cytoskeletal domains**—Actin cytoskeleton, Microvilli, Microtubules, Cilia, and Intermediate filaments
- **Adhesive and communicating domains**—Focal adhesions, Adherens junctions, Tight junctions and desmosomes, and Gap junctions
- **Polarized cellular domains**—Epithelial domains and Neuronal domains
- **Domains regulating gene expression**—Nuclear domains, Nuclear pore, and Cytoplasmic RNA domains

Such thorough coverage of the many and various cellular domains makes this a one-stop reference for research scientists as well as advanced students in cell biology, biochemistry, cellular biophysics, and cellular physiology.

DR. IVAN R. NABI received his BSc in biochemistry at McGill University in 1983 and his PhD in cancer metastasis at the Weizmann Institute of Science in 1989. After completing his post-doctoral training in cell biology at Cornell University Medical College, he joined the Université de Montréal, where he became Full Professor in the Department of Pathology and Cell Biology. In 2004, Dr. Nabi moved to the University of British Columbia, where he is now a Professor in the Department of Cellular and Physiological Sciences. Research in Dr. Nabi's lab is focused on the cell biology of cancer; he studies a number of cellular domains including lipid rafts and caveolae, the endoplasmic reticulum, focal adhesions, and tumor cell pseudopodia.

Cover Art: Cells labeled for the following cellular domains: actin cytoskeleton, caveolae, endoplasmic reticulum, mitochondria and nucleus; Image generated by Pascal St. Pierre

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