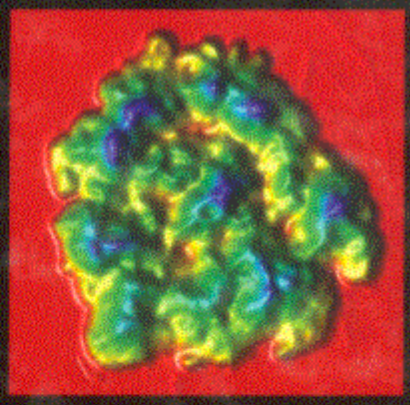
METHODS IN NANO CELL BIOLOGY



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The ultimate goal in cell biology is the understanding of cellular structure-function at the atomic level and in real time in live cells. However, understanding live cells at the single molecule level has been the most important and single major challenge facing biology and medicine in the past two decades. Nano cell biology has helped in realizing this milestone in science. Nano cell biology focuses on the properties and the structure and dynamics of the live cell at nanometer resolution and in real time, and of single molecules and complex biomolecular assemblies, both within and outside the cell. This volume presents current methods, novel approaches, and the applications of nano cell biology to the study of cellular structure, function, and metabolic processes at the nanometer level.

Key Features

- Provides a historical overview on this important, newly emerging field, giving researchers who are non-specialists in the field background information and perspective
- Gives detailed protocols in the study of live cells at the nanometer level, allowing researchers to understand intracellular function at the single molecular level
- Examines future technologies and their applications in the study of living cells, opening discussion on possible breakthroughs in the field of cell biology

Cover Illustration: AFM, EM, and 3D contour maps of the neuronal porosome complex. The neuronal porosome complex is a 12-17 nm cup-shaped lipoprotein structure. Atomic force microscopy (AFM, top left), electron microscopy (EM, top right), and electron density measurements followed by 3D topography mapping (lower panels), provide for the first time, structural details of the neuronal porosome complex at the nano scale.

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