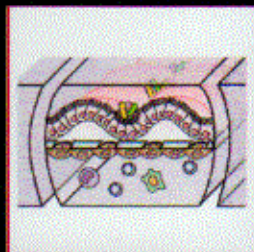


MICROFLUIDICS IN CELL BIOLOGY

PART A: MICROFLUIDICS FOR MULTICELLULAR SYSTEMS



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Microfluidics in Cell Biology brings together leading experts to discuss recent advances in this fascinating and important field of research. Microfluidics refers generally to techniques that allow control of fluids at the micron scale, the natural dimension for single cells and cell assemblies. It has a large spectrum of applications in biology, often grouped under the general terms 'lab-on-a-chip' and 'organ-on-a-chip'. It allows spatial and temporal control of the micro-environment of single cells and cell assemblies, as well as analytical procedures applied to single cells to study their subcellular components. Topics in this first part focus on applications to multicellular assemblies (collective cell migration, monolayers and spheroids), organs on chips (heart, kidney, liver, gut, blood vessels and tumours) as well as model organisms (drosophila development and mechanobiology in model organisms).

KEY FEATURES

- State of the art methods for studying living multicellular assemblies, organs on chips and model organisms in controlled microenvironments
- Precise temporal and spatial control of fluid flow and material transport at micron scale explained by world experts
- Devices allowing assembly of multicellular systems with precise geometries
- Devices compatible with live quantitative imaging of multicellular systems

Cover image: Microfluidic-based gut-on-a-chip.

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