



Cytoskeletal Proteins in Cell Motility

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Abstract

Cytoskeletal proteins constitute a fundamental framework within cells, dictating structural integrity, mechanical support, and dynamic cellular processes. This article explores the multifaceted roles of cytoskeletal proteins, implications in cellular function and disease.

Keywords: Cytoskeleton; Cell motility; Actin; Microtubules; Cytoskeletal proteins

Introduction

The cytoskeleton is a dynamic network of protein filaments that provides structural support and facilitates cellular movement. It is composed of three main types of filaments: actin, microtubules, and intermediate filaments. Each type of filament has unique properties and functions within the cell. Actin filaments are involved in cell crawling and division, microtubules in organelle transport, and intermediate filaments in cell shape maintenance.

Cellular infrastructure

The cytoskeleton is essential for the cell's internal organization and function. It provides a scaffold for organelles and is involved in signal transduction, cell growth, and differentiation. The dynamic nature of the cytoskeleton allows cells to respond to their environment and maintain their structural integrity.

Microtubules: Microtubules are hollow tubes composed of tubulin subunits. They are involved in organelle transport, cell division, and maintaining cell shape.

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