The Role of Exosomes in Intercellular Communication and Immune Regulation

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Abstract

Exosomes, small extracellular vesicles released by various cell types, have emerged as key mediators of intercellular communication and immune regulation. Their ability to transfer bioactive molecules, including proteins, nucleic acids, and lipids, between cells makes them pivotal players in physiological and pathological processes. This review provides a comprehensive overview of the biogenesis, composition, and functions of exosomes, with a focus on their roles in modulating immune responses. We discuss the mechanisms by which exosomes influence immune cell function, including antigen presentation, immune suppression, and inflammation regulation. Furthermore, we highlight recent advancements in understanding the therapeutic potential of exosomes in immune-related disorders and their implications for future research directions.

Keywords:

Introduction

Biogenesis and composition of exosomes

Intercellular communication via exosomes

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