Methods in ENZYMOLOGY

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Endosome Signaling Part A

Edited by

P. Michael Conn

VOLUME FIVE HUNDRED AND THIRTY FOUR

METHODS IN ENZYMOLOGY

Endosome Signaling Part A

Edited by

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PREFACE

Endosomes are membrane-bound compartments that transport internalized material from the plasma membrane to the lysosome and elsewhere. These compartments, often about 500 nm, but ranging in size, have the capability to sort molecules, routing some contents to the lysosomes for degradation, and recycling other materials back to the plasma membrane. The Golgi apparatus also provides molecules to the endosome, some of which are delivered to lysosomes and others are recycled back to the Golgi. Because of this ability to differentially deliver molecules, the endosome is viewed as a presorting structure.

Endosomes are categorized by size, enzymatic content, morphology, and by other criteria such as the length of time it takes internalized material to reach them. Endosomes may provide platforms for cross talk between signaling systems, and this consideration has provided them elite status among cellular components that contribute to signaling.

This volume provides descriptions of the range of methods used to analyze and evaluate these important compartments. The authors explain how these methods are able to provide important biological insights in the context of particular models.

Authors were selected based on both their research contributions and on their ability to describe their methodological contributions in a clear and reproducible way. They have been encouraged to make use of graphics, comparisons to other methods, and to provide tricks and approaches not revealed in prior publications that make it possible to adapt their methods to other systems.

The editor wants to express appreciation to the contributors for providing their contributions in a timely fashion, to the senior editors for guidance, and to the staff at Academic Press for helpful input.

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