

METHODS IN MOLECULAR BIOLOGY

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Galectins

Methods and Protocols

Edited by

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Preface

Although the discovery of galectins over 30 years ago stemmed from interest in understanding the roles of carbohydrates in fundamental biological processes, this finding ultimately uncovered an entire family of potent regulatory proteins. Given their nearly ubiquitous expression and ability to bind highly modifiable carbohydrate ligands, in addition to a variety of other regulatory proteins, these glycan-binding proteins (GBPs) possess the capacity to regulate a wide variety of biological processes. As a result, galectins may not only be some of the most ancient GBPs known but, given their history throughout evolution, also appear to have been a unique evolutionary substrate in many different biological processes. Consistent with this, the galectin family likely represents one of the most pleiotropic families described, with individual members having been implicated in various aspects of nearly every biological process, from RNA splicing to complex regulatory circuits that orchestrate adaptive immunity. Given the diverse roles of galectins in a variety of biological systems, studying these GBPs often requires the assimilation of diverse technical skills to fully appreciate their biological function. Furthermore, as perhaps the most unique and defining feature of galectins lies in their ability to regulate cell behavior through the recognition of carbohydrates, examination of galectin behavior often requires the utilization of carbohydrate biochemistry techniques that may not be familiar to individuals just entering the field. In this volume, individual chapters are dedicated to examining salient features of galectin functions. Each chapter has been written by the world's experts in the field and features clear protocols with notes that provide important considerations that will help you avoid common pitfalls when examining galectin biology. As the first volume solely dedicated to methodological approaches designed to study galectin function, we hope that this work will provide a useful framework when examining galectin function for many years to come.

Atlanta, GA

*Sean R. Stowell
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