

PREFACE

Platelet-activating factor (PAF) is a lipid mediator involved in a variety of physiological functions. One of the key enzymes that appear to be involved in the regulation of PAF levels is a phospholipase A2 that catalyzes the hydrolysis of the acetyl group present in PAF. The discovery of this enzyme, called platelet-activating factor acetylhydrolase (PAF-AH), in the 1980s led to subsequent studies that identified additional acetylhydrolases with similar properties. This work from multiple laboratories across the world defined "PAF-AH" as a family of enzymes, characterized the structure and properties of individual members, identified substrates recognized by each of the proteins, and elucidated the mechanisms involved in substrate hydrolysis. In addition, the significance of PAF-AH in physiology and disease has been investigated in a large number of studies that used biochemical, molecular, genetic, and pharmacologic approaches.

There are three types of enzymes that catalyze the hydrolysis of the acetyl ester of PAF. One is an extracellular enzyme (plasma PAF-AH) and two are intracellular enzymes (PAF-AH I and II). In Chapter 1, we provide an overview of this enzyme family. Chapters 2–5 deal with the two intracellular forms and Chapters 6–10 discuss the secreted form of the enzyme. Diverse functions of PAF-AH are discussed throughout the volume.

The idea of compiling our knowledge on this important enzyme family was conceived in late 2014. With extraordinary effort from all the contributors, we have been able to assemble this volume in a relatively short period of time. We are very grateful to the authors who submitted their chapters in a timely fashion.

There are, however, a number of topics that we could not cover sufficiently in this volume, primarily due to space constraints. For example, we could only briefly discuss the topic regarding small-molecule inhibitors of PAF-AH. This, as well as other topics, will be the focus of a future volume focused on PAF-AH.

We would like to thank Mary Ann Zimmerman and Helene Kabes of Elsevier for their guidance and encouragement.

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October 2015