
Preface

There will be signposts of indication, Semaphore ghost signs and warnings

Jay Farrar (from the song Medicine Hat by Son Volt)

Originally identified for their role in regulating the shape and guidance of neuronal processes, Semaphorins have now emerged as major players in the formation and maintenance of tissues throughout the body. Indeed, these molecular signals have been aptly named (from the Greek sema meaning sign), since they convey instructions between cells in much the same way that flag semaphore is used to communicate information between people. Since their discovery in 1992, Semaphorins have been the focus of immense interest with over 2500 publications covering a variety of topics on their function and mechanisms of action. Importantly, a multitude of approaches have now been developed to study Semaphorins and the means by which they exert their cellular effects. The chapters in this book (which are loosely arranged into three sections based on biochemical, in vitro, and in vivo protocols) have been my attempt to assemble a broad collection of these approaches that would allow the novice to study Semaphorins and employ robust assays to characterize their mechanisms of action. For these reasons, I believe biochemists, cell biologists, geneticists, neurobiologists, pharmacologists, structural biologists, and other researchers interested in Semaphorins and their signaling mechanisms will find these methods helpful and perhaps even a starting point for new explorations into better understanding this important family of proteins and their biomedical roles.

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