

METHODS IN MOLECULAR BIOLOGY

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Notch Signaling

Methods and Protocols

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Preface

Notch signaling has a long history that originated 100 ago. However, 98 % or more of the knowledge related to Notch signaling has been gathered in the past 30 years, and the period between 1990 and 2013 has been exciting, both because of the extent of basic knowledge accumulated and potential implications for therapy in diseases associated with Notch. Most of the methods discussed in this book have been developed in the past 10–15 years and they cover a wide array of approaches related or based on mouse and human cell lines, flies, and mice. The first set of chapters focus on genetic methods in flies and mice, methods to image Notch signaling in live organisms or cells, techniques to monitor Notch activity in cells, and procedures to visualize oscillation associated with Notch signaling in cells and tissues. The next set of chapters focus on molecular, biochemical, and bioinformatics aspects of Notch signaling and include analyzing the Notch interactome, posttranslational modifications of Notch, ligand binding assays, and methods to assess proteolytic cleavage and transcriptional targets. Finally, strategies to diminish Notch signaling using small molecules, anti-Notch antibodies, and anti-ligand antibodies are discussed.

It is impossible to cover all methods using all organisms related to Notch signaling, but we believe that these 25 chapters will be a valuable contribution to hundreds of labs and thousands of scientists who pursue this research area.

We are especially grateful to Karen L. Schulze who provided advice and performed skillful editing. We thank all authors for their expert contributions and their diligence.

Houston, TX, USA

*Shinya Yamamoto
Hugo J. Bellen*

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