

# METHODS IN MOLECULAR BIOLOGY

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# **Wnt Signaling**

## **Methods and Protocols**

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## **Preface**

Secreted Wnt molecules are essential to the coordination of cell fate outcomes in developing and adult tissues and are thus indispensable to animal life. The past few decades of intense research have led to tremendous advances in the assembly of the genetic components necessary for the production of Wnt ligands and for eliciting cellular responses to Wnts. Having leveraged this knowledge to engineer the tools capable of achieving control of Wnt signaling in diverse adult animal tissues, we are now poised to evaluate the potential in modulating Wnt signaling for therapeutic agendas in cancer, wound healing, and degenerative disease.

This collection of protocols should facilitate these efforts by providing step-by-step guidance for successfully evaluating researcher-inspired hypotheses. Included are methods for using Wnt modulating chemicals in engineering tissues from induced pluripotent and embryonic stem cells, for monitoring Wnt transcriptional responses in diverse tissues such as bone and skin, and for using specific biochemical markers of Wnt signaling to either screen molecular libraries or evaluate novel reagents. These protocols also leverage unique experimental strengths from five different model organisms.

We also hope these selected protocols are representative of the diverse interests and awe-inspiring creativity that has placed a premium on understanding Wnt signal transduction in an effort to improve outcomes in regenerative medicine and cancer management.

*Dallas, TX, USA*

*Quinn Barrett  
Lawrence Lum*

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# Contents

<i>Preface</i> . . . . .	<i>v</i>
<i>Contributors</i> . . . . .	<i>ix</i>
1 Visualizing Wnt Palmitoylation in Single Cells. . . . . <i>Xinxin Gao and Rami N. Hannoush</i>	1
2 Monitoring Wnt Protein Acylation Using an In Vitro Cyclo-Addition Reaction. . . . . <i>Rubina Tuladhar, Nageswari Yarravarapu, and Lawrence Lum</i>	11
3 Biochemical Methods to Analyze Wnt Protein Secretion . . . . . <i>Kathrin Glaeser, Michael Boutros, and Julia Christina Gross</i>	17
4 Methods for Studying Wnt Protein Modifications/Inactivations by Extracellular Enzymes, Tiki and Notum . . . . . <i>Xinjun Zhang and Xi He</i>	29
5 Probing Wnt Receptor Turnover: A Critical Regulatory Point of Wnt Pathway . . . . . <i>Xiaomo Jiang and Feng Cong</i>	39
6 A Simple Method to Assess Abundance of the $\beta$ -Catenin Signaling Pool in Cells . . . . . <i>Annette S. Flozak, Anna P. Lam, and Cara J. Gottardi</i>	49
7 Wnt-Dependent Control of Cell Polarity in Cultured Cells . . . . . <i>Kristin B. Runkle and Eric S. Witze</i>	61
8 The Use of Chick Embryos to Study Wnt Activity Gradients . . . . . <i>Lisa M. Galli, Tiffany Barnes, and Laura W. Burrus</i>	69
9 Monitoring Wnt Signaling in Zebrafish Using Fluorescent Biosensors . . . . . <i>Nicola Facchinello, Marco Schiavone, Andrea Vettori, Francesco Argenton, and Natascia Tiso</i>	81
10 Biochemical Analysis of Tankyrase Activity in Zebrafish In Vitro and In Vivo. . . . . <i>Jesung Moon and James F. Amatruda</i>	95
11 Reconstitution of the Cytoplasmic Regulation of the Wnt Signaling Pathway Using Xenopus Egg Extracts . . . . . <i>Annastasia Simone Hyde, Brian I. Hang, and Ethan Lee</i>	101
12 Delivery of the Porcupine Inhibitor WNT974 in Mice . . . . . <i>Li-shu Zhang and Lawrence Lum</i>	111
13 Use of Primary Calvarial Osteoblasts to Evaluate the Function of Wnt Signaling in Osteogenesis . . . . . <i>Zhendong A. Zhong, Nicole J. Ethen, and Bart O. Williams</i>	119

14 Monitoring Wnt/ $\beta$ -Catenin Signaling in Skin . . . . . 127  
*Amy T. Ku, Qi Miao, and Hoang Nguyen*

15 The Generation of Organoids for Studying Wnt Signaling. . . . . 141  
*Jarno Drost, Benedetta Artigiani, and Hans Clevers*

16 Methods to Manipulate and Monitor Wnt Signaling in Human  
Pluripotent Stem Cells . . . . . 161  
*Ian J. Huggins, David Brafman, and Karl Willert*

17 Directed Endothelial Progenitor Differentiation from Human  
Pluripotent Stem Cells Via Wnt Activation Under Defined Conditions . . . . . 183  
*Xiaoping Bao, Xiaojun Lian, and Sean P. Palecek*

Erratum to: Delivery of the Porcupine Inhibitor WNT974 in Mice . . . . . E1

*Index*. . . . . 197

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