## Contents

### TOPIC INTRODUCTIONS

**Analysis of Apoptosis in *Caenorhabditis elegans***  
Benjamin Lant and W. Brent Derry  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.top070458

**Confocal Spot Detection of Presynaptic Ca$^{2+}$ Domains**  
David DiGregorio  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.top081729

**Translating Intracellular Calcium Signaling into Models**  
Rüdiger Thul  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.top066266

**Coherent Raman Tissue Imaging in the Brain**  
Brian G. Saar, Christian W. Freudiger, Xiaoyin Xu, Anita Huttner, Santosh Kesari, Geoffrey Young, and X. Sunney Xie  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.top081695

### PROTOCOLS

**Investigating Physical Chromatin Associations Across the *Xenopus* Genome by Chromatin Immunoprecipitation**  
George E. Gentsch and James C. Smith  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.prot080614

**Inducing RNAi in *Drosophila* Cells by Soaking with dsRNA**  
Rui Zhou, Stephanie Mohr, Gregory J. Hannon, and Norbert Perrimon  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.prot080747

**Generation of Transgenic *Drosophila* Expressing shRNAs in the miR-1 Backbone**  
Kenneth Chang, Krista Marran, Amy Valentine, and Gregory J. Hannon  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.prot080762

**Immunostaining for Markers of Apoptosis in the *Caenorhabditis elegans* Germline**  
Benjamin Lant and W. Brent Derry  
*Cold Spring Harb Protoc*; 2014; 10.1101/pdb.prot080242
Contents

Limited Mouse Necropsy 518
Robert D. Cardiff, Claramae H. Miller, and Robert J. Munn
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot073395

Mouse Tissue Fixation 522
Robert D. Cardiff, Claramae H. Miller, and Robert J. Munn
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot073403

Visualizing Spatiotemporal Dynamics of Multicellular Cell-Cycle Progressions with Fucci Technology 525
Asako Sakaue-Sawano and Atsushi Miyawaki
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot080408

Identification and Staining of Distinct Populations of Secretory Organelles in Astrocytes 532
Paola Bezzi and Andrea Volterra
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot081703

Imaging Exocytosis and Recycling of Synaptic-Like Microvesicles in Astrocytes 537
Paola Bezzi and Andrea Volterra
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot081711

Chronic Calcium Imaging of Neurons in the Mouse Visual Cortex Using a Troponin C-Based Indicator 544
Alexandre Ferrão Santos and Mark Hübener
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot081737

Exploring Oscillations in a Point Model of the Intracellular Ca²⁺ Concentration 552
Rüdiger Thul
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot073221

Time to Blip—Stochastic Simulation of Single Channel Opening 556
Rüdiger Thul
Cold Spring Harb Protoc; 2014; 10.1101/pdb.prot073239

Cover Illustration: Cell-cycle status of individual cells (green, S/G2/M; red, G1) in a sagittal section of a developing mouse (E11.5). In this issue, Asako Sakaue-Sawano and Atsushi Miyawaki describe how to use Fucci (fluorescent ubiquitination-based cell-cycle indicator) technology to visualize cell-cycle dynamics in cultured cells and in complex tissues (doi: 10.1101/pdb.prot080408).

General Cautions

The methods in this issue should be used by laboratory personnel with experience in laboratory and chemical safety or students under the supervision of such trained personnel. The procedures, chemicals, and equipment referenced in this issue are hazardous and can cause serious injury unless performed, handled, and used with care and in a manner consistent with safe laboratory practices. Students and researchers using the procedures in this issue do so at their own risk. It is essential for your safety that you consult the appropriate Material Safety Data Sheets, the manufacturers’ manuals accompanying equipment, and your institution’s Environmental Health and Safety Office, as well as the General Safety and Disposal Cautions (see www.cshprotocols.org/cautions), for proper handling of hazardous materials described in these articles. Cold Spring Harbor Laboratory makes no representations or warranties with respect to the material set forth in these articles and has no liability in connection with the use of these materials.

All registered trademarks, trade names, and brand names mentioned in this issue are the property of the respective owners. Readers should consult individual manufacturers and other resources for current and specific product information. Appropriate sources for obtaining safety information and general guidelines for laboratory safety are provided in the General Safety and Hazardous Material Information page online (www.cshprotocols.org/cautions).