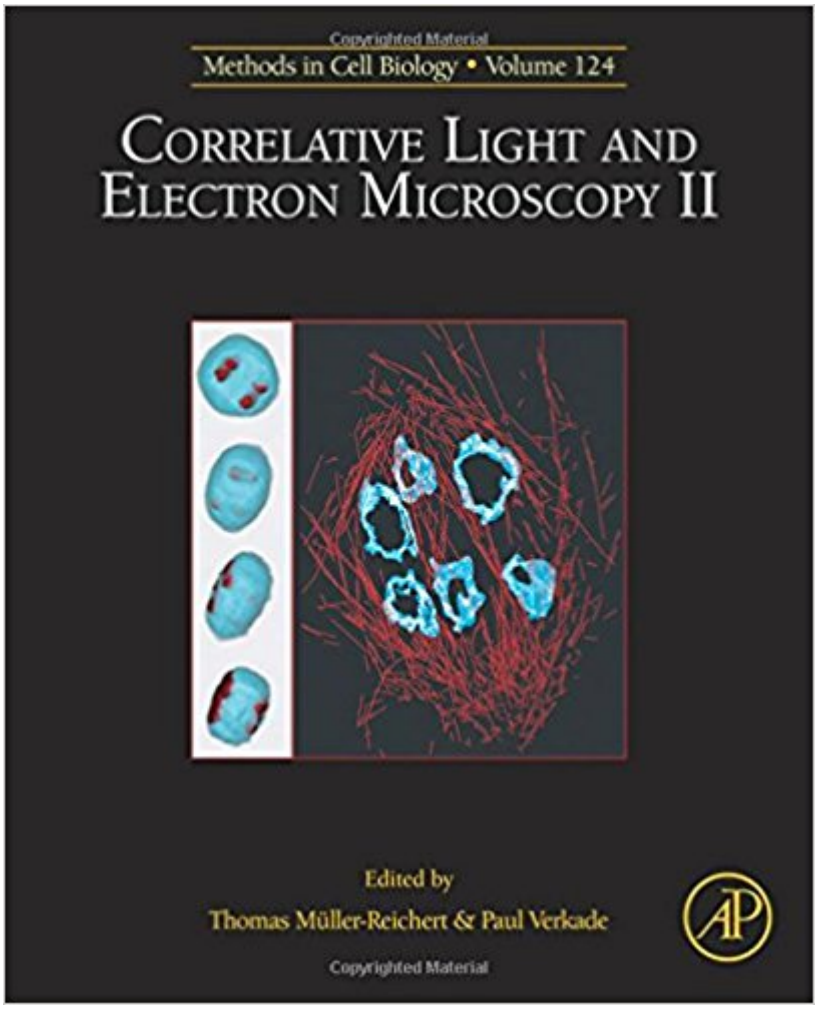
Correlative Light And Electron Microscopy II, Volume 124 (Methods In Cell Biology)



Synopsis

This new volume of Methods in Cell Biology looks at methods for analyzing correlative light and electron microscopy (CLEM). With CLEM, people try to combine the advantages of both worlds, i.e. the dynamics information obtained by light microscopy and the ultrastructure as provided by electron microscopy. This volume contains the latest techniques on correlative microscopy showing that combining two imaging modalities provides more than each technique alone. Most importantly it includes the essential protocols, including tips, tricks and images for you to repeat these exciting techniques in your own lab. With cutting-edge material, this comprehensive collection is intended to guide researchers for years to come.Covers sections on model systems and functional studies, imaging-based approaches and emerging studiesChapters are written by experts in the fieldCutting-edge materialSecond of two volumes dedicated to Correlative Light and Electron microscopy (CLEM)

Book Information

Series: Methods in Cell Biology (Book 124)

Hardcover: 452 pages

Publisher: Academic Press; 1 edition (October 13, 2014)

Language: English

ISBN-10: 0128010754

ISBN-13: 978-0128010754

Product Dimensions: 1.2 x 7.8 x 9.5 inches

Shipping Weight: 2.6 pounds (View shipping rates and policies)

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Customer Reviews

"...focused on three key topics relevant for CLEM experiments: the development of probes; the processing and registration of light and electron microscopic images; and the automated registration of data collected by both imaging modalities." --Anticancer Research, February 2015

Dr. Thomas MÃƒÂ ller-Reichert is interested in how the microtubule cytoskeleton is modulated within cells to fulfill functions in meiosis, mitosis and abscission. The MÃƒÂ ller-Reichert lab is mainly applying correlative light microscopy and electron tomography to study the 3D organization of microtubules in the early embryo of the nematode Caenorhabditis elegans and in tissue culture cells. He got his PhD degree from the Swiss Federal Institute of Technology (ETH) in Zurich and moved afterwards to the EMBL in Heidelberg (Germany) for a post-doc with Dr. Tony Hyman. He was a visiting scientist with Dr. Kent McDonald (UC Berkeley, USA) and set up the electron microscope facility at the newly founded Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG). Since 2010 he is head of the Core Facility Cellular Imaging (CFCI) of the Medical Faculty Carl Gustav Carus of the TU Dresden (Germany).Together with Dr. Paul Verkade he has developed a rapid transfer system for high-pressure freezing used for Correlative Light and Electron Microcopy. He has organized a number microscopy conferences and taught in several (CL)EM courses. He edited an MCB volume on the Electron Microscopy of Model Systems.Dr. Paul VerkadeÃ¢â ¬â„¢s research focuses on the sorting mechanisms in intracellular transport pathways. His main tools are microscopy techniques, with an emphasis on electron microscopy (EM) in which field he has published over 50 papers. He has studied and got his PhD degree at the University of Utrecht, the Netherlands. After his post-doc time at the EMBL, Heidelberg, Germany in the group of Kai Simons and setting up a new EM lab at the Max Planck Institute for Molecular Cell Biology in Dresden, Germany he moved to the University of Bristol, UK in 2006. Here he set up a new EM unit as part of the Wolfson Bioimaging Facility, a fully integrated light and electron microscopy centre.To support his transport studies, part of his research is to develop techniques and tools for the use of Correlative Light Electron Microscopy (CLEM). Amongst other things he has developed the Rapid Transfer System for the EMPACT2 high-pressure freezer together with Leica Microsystems. This allows for the combination of time-resolved CLEM with optimal preservation of ultrastructure for EM.Dr. Verkade is chair of the Electron Microscopy section of the Royal Microscopical Society (RMS) and of the Cryo Microscopy Group, affiliated to the RMS. He has organised and taught on a large number of courses and workshops on subjects such as high-pressure freezing, Correlative Light Electron Microscopy, and immuno EM. He is also the principle organiser of the EMBO practical course on CLEM.

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