#### Manual for Leica SP2 Confocal Microscope

Enter you name, the date, the time, and the account number in the user log book.

#### Things to check before start-up.

- Make sure that your sample slides are clean and sealed. Use Windex and cotton balls or Kimwipes to clean coverslips. Fixed samples need to be sealed with nail polish.
- Check the objectives. The 10x and 20x objectives are DRY objectives, and should NEVER have oil on them!
   There are 40x and 63x OIL immersion objectives, and a 63x WATER immersion objective also on this microscope. If oil immersion objectives have oil on them, wipe the lens gently only with lens paper.

#### System Start-up.

- Turn on the microscope controller<sup>①</sup> and the Scanner Laser HeNe<sup>②</sup> and PC/Stand<sup>③</sup> switches.
- Turn on the computer and log on to the desktop.
- Turn on the Mercury Arc Lamp power supplier, if you look at fluorescently labeled samples.
- Start the LCS program by double-clicking the LCS icon on the desktop.



On the pop-up starting window panel, select the **Personal** that contains your setting for acquisition parameters you have created or **Company** for a default setting.









# **Leica Confocal Manual**

**James Pawley** 

#### Leica Confocal Manual:

Handbook of Biological Confocal Microscopy James Pawley, 2006-06-02 Once the second edition was safely off to the printer the 110 larger world of micro CT and micro MRI and the smaller world authors breathed a sigh of relief and relaxed secure in the belief revealed by the scanning and transmission electron microscopes that they would never have to do that again That lasted for 10 To round out the story we even have a chapter on what PowerPoint years When we nally awoke it seemed that a lot had happened does to the results and the annotated bibliography has been In particular people were trying to use the Handbook as a text updated and extended book even though it lacked the practical chapters needed There As with the previous editions the editor enjoyed a tremendous had been tremendous progress in lasers and ber optics and in our amount of good will and cooperation from the 124 authors understanding of the mechanisms underlying photobleaching and involved Both I and the light microscopy community in general phototoxicity It was time for a new book I contacted the usual owe them all a great debt of gratitude On a more personal note I suspects and almost all agreed as long as the deadline was still a would like to thank Kathy Lyons and her associates at Springer for year away Leica Confocal Software LCS -User Manual, Selecting the excitation wavelength Above the spectrum in the dialog window you will find boxes to set the excitation wavelength using an AOTF Click the check box next to the laser name to activate the laser Set the output for the laser line by moving the slide on the corresponding scale to the desired value or Double click the percentage value for the laser output Click on the symbol and select the desired beam splitter Neutral filters such as the RT 30 70 filter are used in reflection applications to lead the excitation light to the sample and the reflected light to the detection pinhole Specify the wavelength range for the detection by dragging the two ends of the slider to the desired positions on the scale or Double click the slide bar to open an additional dialog window in which you can enter a precise value for the start point and the end point of the wavelength range You will achieve the best resolution when the refraction indexes of the embedding medium and or the specimen are matched to the refraction index of the objective medium **Manual of Antisense Methodology** Gunther Hartmann, Stefan Endres, 2012-12-06 In the past few years antisense methodology has moved from in vitro studies to in vivo studies and first human trials While the basic concept of antisense technology is simple the methodological problems associated with its use are numerous and complex Antisense based methods have proven to be a field of research where careful attention to experimental protocols and appropriate controls is necessary The Manual of Antisense Methodology emphasizes the application of antisense oligonucleotides and is a guide for the identification of antisense and non antisense effects in different experimental settings. The work is organized into three sections antisense application in vitro antisense application in vivo animal models and finally clinical antisense studies Where at all possible the methods are described in sufficient detail to allow reproduction of a given experiment The Manual of Antisense Methodology will be of interest to researchers in immunology cancer research pharmacology and internal medicine and physicians conducting clinical studies

in these fields Genetics and Mechanism of Ciliopathies Steven L. C. Pei, Brian Hon-Yin Chung, 2022-11-30 Introduction to Confocal Fluorescence Microscopy Michiel Muller, 2006 This book provides a comprehensive account of the theory of image formation in a confocal fluorescence microscope as well as a practical guideline to the operation of the instrument its limitations and the interpretation of confocal microscopy data. The appendices provide a guick reference to optical theory microscopy related formulas and definitions and Fourier theory *Plant Microtechniques and Protocols* Edward Chee Tak Yeung, Claudio Stasolla, Michael John Sumner, Bing Quan Huang, 2015-09-19 A proper understanding of the structural organization of the plant body is essential to any study in plant biology Experimental studies in vivo and in situ will lead to structural physiological and cellular changes of the experimental material To study macroscopic and microscopic changes different histological methods and microtechniques can be used as they provide valuable information of the experimental system In addition the observed structural changes allow investigators to set hypothesis for further studies based on one s own observation Thus proper selection and utilization of microtechniques are a must for the success of a research program At present an up to date collection of protocols are not readily available in the literature The latest work in plant microtechniques was published in 1999 by Ruzin but many others are no longer in print e q Jensen 1964 O Brien and McCully 1981 Furthermore a majority of published works focus on techniques related to general processing and staining procedures A comprehensive treatment that encompasses broader applications of microtechniques to other disciplines is lacking e g archeology wood science etc There is a need to create a comprehensive volume of botanical methods and protocols which includes traditional and novel techniques that can be used by researchers in plant science and investigators in other disciplines that require plant microtechniques in their research and teaching This book covers a wide variety of applications and brings them up to date to make them understandable and relevant especially to students using the methods for the first time It is our intention to create a useful reference for plant histology and related methods that will serve as a foundation for plant scholars researchers and teachers in the plant sciences The Plant Cell Wall Methods and **Protocols** Zoë A. Popper, Handbook of Wood Chemistry and Wood Composites Roger M. Rowell, 2012-09-06 Wood has played a major role throughout human history Strong and versatile the earliest humans used wood to make shelters cook food construct tools build boats and make weapons Recently scientists politicians and economists have renewed their interest in wood because of its unique properties aesthetics availability abundance and perha **Shaping the Brain by Neuronal** 

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Shaping the Brain by Neuronal Cytoskeleton: from Development to Disease and Regeneration C. Laura Sayas, Monica Mendes Sousa, Jesus Avila, 2020-03-25 

A Practical Manual For Musculoskeletal Research Kwok Sui Leung, Ling Qin, Wing Hoi Cheung, 2008-08-18 This manual provides technical protocols for musculoskeletal research on a translational basis i e a disease orientated approach It offers guidance on various laboratory techniques including cell culture and molecular biology histology and histomorphometry microscopy and bioimaging laboratory animal models CT and MRI based densitometry and

microarchitectural analysis biomechanics and functional analysis of orthopedic kinesiology etc The content is simple and straightforward with illustrations and step by step procedures as an easy experimental reference for personnel in basic and clinical musculoskeletal research and education This book will provide a unique multidisciplinary platform for various professions not only orthopedics but also biomedical engineering and biomaterial sciences involving both basic and clinical medicine Basic Protocols in Predictive Food Microbiology Verônica Ortiz Alvarenga, 2023-09-09 This volume details well established protocols and procedures being used by laboratories and the industry to study Predictive Microbiology in Foods Chapters guide readers through methods to design and collect data to generate predictive models the development of a predictive model approaches the behavior mainly and experiments in predictive microbiology Written in the format of the Methods and Protocols in Food Science series chapters list necessary materials and methods for readily reproducible protocols Authoritative and cutting edge Predictive Food Microbiology aims to be a foundation for future studies and to be a source of inspiration for new investigations in the field **Neurodegeneration and Neuroprotection in Retinal Disease** Giovanni Casini, Peter Koulen, Mohammad Shamsul Ola, 2020-08-21 This eBook is a collection of articles from a Frontiers Research Topic Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series they are collections of at least ten articles all centered on a particular subject With their unique mix of varied contributions from Original Research to Review Articles Frontiers Research Topics unify the most influential researchers the latest key findings and historical advances in a hot research area Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office frontiers in org about contact The Role of GABA-Shift in Neurodevelopment and Psychiatric Disorders Lorenz S. 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Slominski, Chander Raman,Oxana Bereshchenko,2022-02-04 The AGT Cytogenetics Laboratory Manual Marilyn S. Arsham, Margaret J. Barch, Helen J. Lawce, 2017-04-24 Cytogenetics is the study of chromosome morphology structure pathology function and behavior The field has evolved to embrace molecular cytogenetic changes now termed cytogenomics Cytogeneticists utilize an assortment of procedures to investigate the full complement of chromosomes and or a targeted region within a specific chromosome in metaphase or interphase Tools include routine analysis of G banded chromosomes specialized stains that address specific chromosomal structures and molecular probes such as fluorescence in situ hybridization FISH and chromosome microarray analysis which employ a variety of methods to highlight a region as small as a single specific genetic sequence under investigation The AGT Cytogenetics Laboratory Manual Fourth Edition offers a comprehensive description of the diagnostic tests offered by the clinical laboratory and explains the science behind them One of the most valuable assets is its rich compilation of laboratory tested protocols currently being used in leading laboratories along with practical advice for nearly every area of interest to cytogeneticists In addition to covering essential topics that have been the backbone of cytogenetics for over 60 years such as the basic components of a cell use of a microscope human tissue processing for cytogenetic analysis prenatal constitutional and neoplastic laboratory safety and the mechanisms behind chromosome rearrangement and aneuploidy this edition introduces new and expanded chapters by experts in the field Some of these new topics include a unique collection of chromosome heteromorphisms clinical examples of genomic imprinting an example driven overview of chromosomal microarray mathematics specifically geared for the cytogeneticist usage of ISCN s cytogenetic language to describe chromosome changes tips for laboratory management examples of laboratory information systems a collection of internet and library resources and a special chapter on animal chromosomes for the research and zoo cytogeneticist The range of topics is thus broad yet comprehensive offering the student a resource that teaches the procedures performed in the cytogenetics laboratory environment and the laboratory professional with a peer reviewed reference that explores the basis of each of these procedures This makes it a useful resource for researchers clinicians and lab professionals as well as students in a university or medical school setting

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