

Advanced Molecular Cytogenetic Methodologies

REGISTRATION FORM

This course consists of 3 modules/20 hours of study. Each module includes questions to be submitted to the instructor for review. A strong background in cytogenetics and/or clinical genetics is recommended.

COURSE FEES:

BCSLS Members **\$195.00**

Non-members **\$260.00**

Online registration or Mail registration and payment to:

BC Society of Laboratory Science
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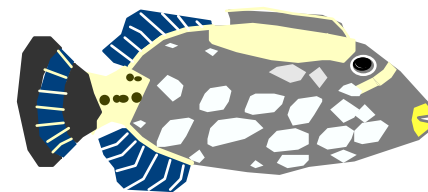
Advanced Molecular Cytogenetic Methodologies:

A Guide to the Principles and Practice

YEAR 2002

TOPICS INCLUDE:

Comparative Genomic Hybridization
24-colour Karyotyping (MFISH, SKY)
High Resolution Multi-colour Banding (Mband)
DNA Microarray Technology



The BCSLS is pleased to present this sequel to our popular correspondence course *FISH: A Practical Approach*.

Advanced Molecular Cytogenetics Methodologies: A Guide to the Principles and Practice

Course Instructor

Brenda Lomax, BSc, RT (Cg)

Course Objectives

This correspondence course is offered by the BCSLS to provide you with:

a colourful, well-illustrated course describing the advanced molecular cytogenetic methods that have been developed in the past decade. Students are provided the appropriate theory and practical knowledge to introduce these technologies into clinical cytogenetic practice.

Module One: Comparative Genomic Hybridization

Comparative genomic hybridization (CGH) is a FISH-based technique that can detect chromosomal imbalances. Module One outlines the principles of each step in the CGH procedure and provides detailed protocols, including: DNA extraction and quantification, DNA labelling by nick translation, probe preparation, hybridization, CGH analysis and interpretation, ISCN nomenclature, troubleshooting. Applications of CGH are described using examples of numerous real clinical cases.

Module Two: 24-colour Karyotyping

24-colour karyotyping labels each of the human chromosomes with a uniquely distinctive colour. This FISH-based approach to

karyotyping readily identifies both simple and complex chromosomal rearrangements. While this module describes both SKY (spectral karyotyping) and MFISH (multi-colour FISH) approaches, the major focus is on the use of commercially available MFISH assays (*Vysis, Metasystems*). Topics include: principles, analysis and interpretation, limitations, clinical applications, troubleshooting. The use of cross-species colour banding and high resolution multi-colour banding (Mband) is also described.

Module Three: DNA Microarray

This third module provides an overview of the emerging DNA microarray technology with an emphasis on its significance to the clinical cytogenetic laboratory.

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This course is being submitted to the CSMLS for review to establish eligibility for credits under the Continuing Professional Studies (CPS) program and competency assurance credits under the CSMLS Professional Enhancement Program. This course provides theoretical information only and is not intended to replace practical training in these areas.



Advanced Molecular Cytogenetic Methodologies: A Guide to the Principles and Practice

INSTRUCTIONS

- 1) The course manual is 92 pages long, containing 3 modules. You may keep the course manual for reference. Please remember this material is copyrighted and **do not copy or reproduce all or part of the manual without our permission.**
- 2) Read each module and answer the corresponding questions/assignments. The questions can be answered on the booklet page, photocopy or on a separate piece of paper at your preference.
- 3) You have two months to review all of the course material.
 - a) After you have reviewed the course material, please complete the assignments.
 - b) If you require assistance with the course material, please contact the BCSLS office stating your name, evening telephone number, and the topic you wish to discuss.
 - c) Our instructor will return your call.
- 4) Please complete the course evaluation. This information will assist us in improving our future courses.
- 5) Mail the **assignments** and **course evaluation** to:

BCSLS
#720 - 999 West Broadway Avenue
Vancouver, BC V5Z 1K5

Your marks and "certificate of participation" will be mailed to you within 6 weeks after we receive your questions/assignments.

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