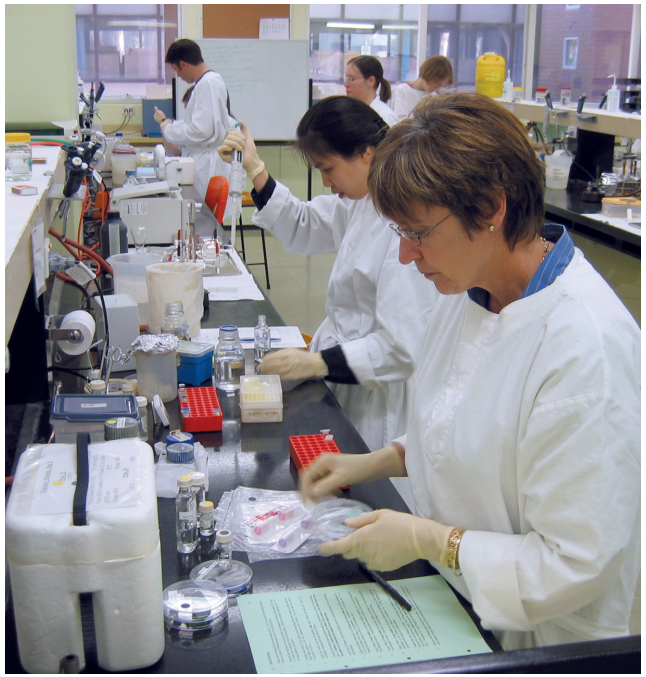
Practical

- Cleavage and ligation of plasmid DNA
- Transformation of bacterial cells
- Preparation and column purification of plasmid DNA
- Restriction enzyme mapping
- Agarose gel electrophoresis
- Recovery of DNA from agarose gels
- Preparation of probes
- DIG-based southern blotting and hybridisation
- Induction of fusion protein production
- Polyacrylamide gel electrophoresis and western blotting
- Nucleic acid extraction
- Reverse transcription and PCR
- Real-time PCR
- DNA sequencing and computer-aided analysis

Demonstrations (Micromon operations)

- Sanger DNA sequencing
- Oligonucleotide synthesis
- Next-generation sequencing (Illumina)



MONASH University

The all-inclusive fee is $1950 AUD (GST-Exclusive) and as part of the package, we provide delicious gourmet lunches, refreshments, drinks and snacks each evening, and a social course dinner on the Thursday. There is also an extensive range of demonstration equipment for use and relevant product information available from our scientific sponsors. A course certificate will be awarded on completion. Suitable, university-based or private accommodation, for a very reasonable cost can be arranged at your request.

Postgraduate students receive a 20% discount on the course fee.

Technical information

Mr Mark Cauchi
03 9905 4830

Dr Kylie Wilson
03 9905 4844

Registration information

Mr Mark Cauchi
Telephone: 03 9905 4830

Location

The teaching laboratories of the Department of Microbiology are located at 12 Innovation Walk on the the Monash University Clayton campus. This is situated 16 kilometres south-east of the Melbourne CBD and is well-serviced by public transport bus services, including an airport bus. If required, please contact us for transport and accommodation information.

Address

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Website: micromon.monash.org

Micromon GENOMICS, BIOTECHNOLOGY AND DIAGNOSTICS

BIO-RAD

MONASH University

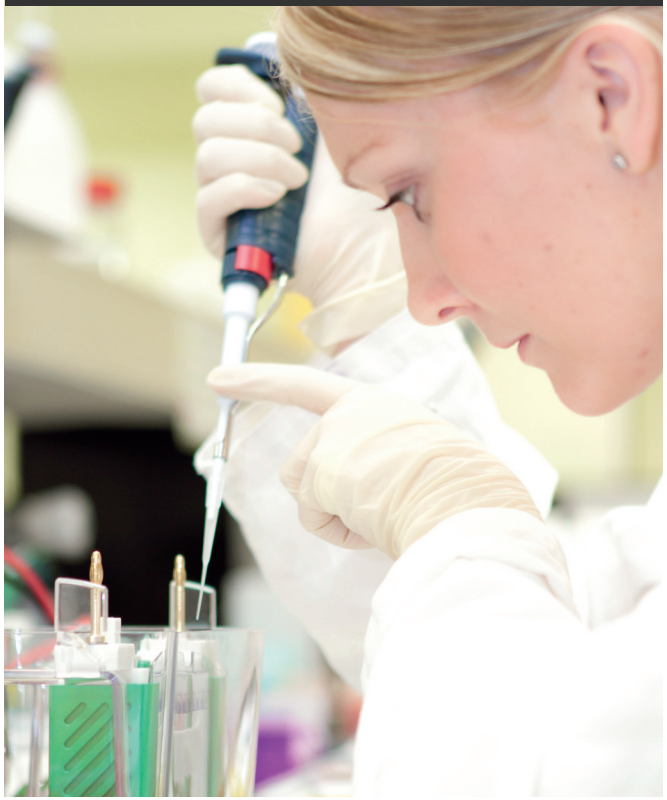
Medicine, Nursing and Health Sciences

Molecular Biology Techniques

An introductory course in Recombinant DNA Technology

Micromon
School of Biomedical Sciences
Monash University, Clayton campus

Sunday 3 to Friday 8 December, 2017



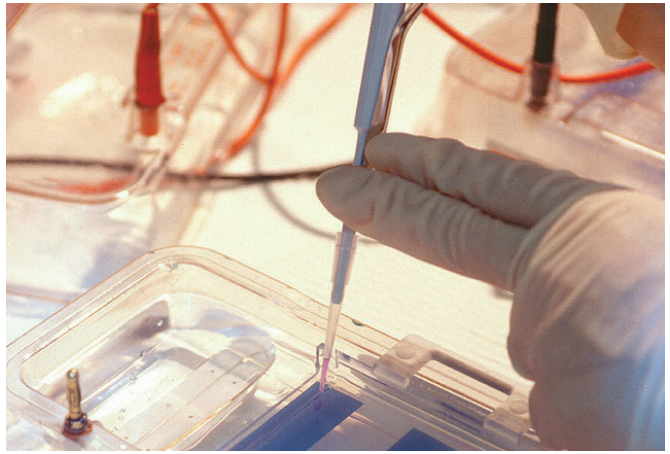
M8 Alliance

micromon.monash.org

Advances in molecular biology continue to be made at a remarkable and ever-increasing rate. One of the pace-setters is gene manipulation, often called genetic engineering. The methods in recombinant DNA technology have transformed research in the biological and medical sciences. Developments have influenced all aspects of biological research, found far-reaching applications in clinical diagnosis and led to important commercial developments in agriculture and biotechnology.

The basic techniques have become well established and are universally being applied to solve particular biological problems. New applications of recombinant DNA technology continue unabated, particularly in the diagnosis of genetic disorders and the determination of potential causes of cancer.

The Department of Microbiology at Monash University is a well established teaching and research department which is highly active in all aspects of the molecular biology of microorganisms. The main research and academic interests of the Department are in molecular microbiology, medical microbiology and microbial pathogenesis including molecular aspects of infection and immunity, molecular parasitology, molecular virology and viral gene expression, microbial genetics, microbial physiology, and the structural biology of microbial proteins.

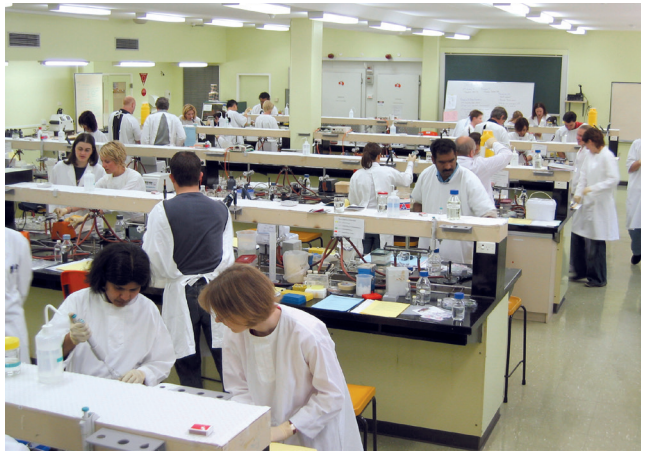


The Department is a member of the School of Biomedical Sciences and our main site is on the Clayton campus where teaching is conducted for medical, biomedical and science students leading to the awards of MBBS, BBiomedSc, BSc, MSc and PhD. Professor Stephen Turner, the current head, leads a strong and enthusiastic team of academics, directly involved in teaching and research.

Micromon is a technology service unit within the Department of Microbiology. It is one of several research technology platforms at Monash and provides services to the industry including DNA sequencing, next-generation sequencing, DNA/RNA sizing and quantification, real-time PCR, oligonucleotide synthesis, media preparation, microbial cultures, diagnostic testing, educational courses or workshops, and other contract services.

Micromon invites enquiries and applications for its next Molecular Biology course that will provide comprehensive training in the basic skills of ‘recombinant DNA technology’. Highly regarded throughout the industry and by former participants, this outstanding and established course has attracted applicants from diverse backgrounds in private, government, scientific, clinical, educational and commercial organisations.

It is an extremely intensive course, designed to teach the essential skills to participants from all scientific and medical disciplines, who have had limited or no previous experience in molecular biology. It is also an ideal workshop for those who would like to consolidate their current, basic skill level.



The course consists of ten hours of theory provided by a group of experienced lecturers who are all active researchers, experts in their relevant fields, and are widely published. The practical skills training involves more than 30 hours of experimental laboratory work and tutorials. This is provided by by postgraduate instructors who routinely use applications and procedures in an active research environment. The key feature of the workshop is our tutor to participant ratio which is one to four for all workshop sessions and tutorials. A comprehensive manual with all lecture slides, protocols, procedures and references is provided in both digital and hard format.

Lectures

- Introduction to microbiology, DNA and molecular biology
- Basic cloning requirements
- Gene cloning techniques
- Hybridisation – northern, southern and western
- Construction of genomic libraries
- Restriction fragment mapping
- Genetic mapping
- DNA sequencing
- Design and use of oligonucleotide primers
- Real-time PCR
- Site-directed mutagenesis
- Cloning vectors and their applications
- Gene expression systems
- Bioinformatics and database searching