



General Guidelines for

Molecular Genetics Core Facility (MGCF)

Table of Contents

	<i>Page</i>
<i>A. Facility Description</i>	3
<i>B. Physical Location</i>	3
<i>C. Staff and Contact Information</i>	4
<i>D. Service hours</i>	4
<i>E. Services Provided</i>	4
<i>F. Operation Rules</i>	5
<i>*User Registration and Eligibility Criteria</i>	
<i>*Priorities</i>	
<i>*Users Responsibilities</i>	
<i>*Facility Regulations</i>	
<i>G. References</i>	7
<i>H. Approval of Guidelines</i>	7
<i>I. Appendices</i>	
<i>1. User Registration Form</i>	9
<i>2. Oligonucleotide Synthesis Order Form</i>	10
<i>3. Oligonucleotide/Peptide Synthesis Services/Pricing</i>	11
<i>4. Log Book</i>	12
<i>5. Problem Report Form</i>	13
<i>6. Photos of equipment</i>	14

A. Facility Description

The Molecular Biology Core Facility was created in April 1991 to support research in AIDS and other areas of clinical and basic research. Molecular Biology equipment and technology is available to RCM researchers, and the Facility offers oligonucleotide synthesis to RCM and out of campus researchers. In this new cycle, the Molecular Biology Facility and the Human Molecular Genetics Core Facility have merged as the Molecular Genetics Core Facility to continue support of basic and clinical research in molecular biology and molecular genetics. A Real Time PCR detection system and an Automated DNA Sequencer have been acquired for this purpose.

The Facility has the following specific aims:

- ◆ Provide the infrastructure necessary to sustain research currently conducted at the UPR-MSC, especially in projects addressing health disparities.
- ◆ To increase the number of research projects in molecular biology and genetics conducted at the UPR-MSC by training graduate and undergraduate students in these areas.
- ◆ To continue making available new methodologies in molecular genetics that can be used for analysis of the human genome by providing specialized training in molecular genetics to faculty and staff members.
- ◆ To develop a system for genotyping and/or DNA sequencing of nucleic acids derived from human and other sources.

B. Physical Location

The Molecular Genetics Core Facility is located in the Department of Biochemistry in the Main Building of the School of Medicine in the PR Medical Center Area. The administrative office of the Facility is located in room A-621. Equipment is located in rooms A-621, A-624, and A-633.

Our postal address is as follows:

Molecular Genetics Core Facility
Department of Biochemistry-Lab A-621
University of Puerto Rico
School of Medicine
PO Box 365067
San Juan, P.R. 00936-5067

C. Staff and Contact Information

José R. Rodríguez-Medina, Ph.D.
 Molecular Genetics Core Facility Coordinator
 Office A-623, 6th Floor, Dept. of Biochemistry
 Telephone: 1-787-758-2525 Ext. 2299
 Email: jorrodriquez@rcm.upr.edu

Lilliam Villanueva, M.S.
 Molecular Genetics Core Facility Technician
 Lab. A-621, 6th Floor, Dept. of Biochemistry
 Telephone: 1-787-758-2525 Ext. 1633
 Email: lvillanueva@rcm.upr.edu

D. Service hours

The Molecular Genetics Core Facility is available to users from Monday to Friday from 8:00 AM to 6:00 PM. During weekends and holidays the Facility is closed. Nevertheless, special arrangements are often made for users that need access to equipment after regular service hours.

E. Services provided

Support of research instrumentation is provided as follows:

<i>Equipment</i>	<i>Location</i>	<i>Use/Application</i>
Nuaire Biological Safety Hood	A-634	Sterile handling of samples
Barnstead E-pure System	A-621	Supply of ultrapure water to activity participants
Vti50 Rotor	A-621	Cesium Chloride gradients for large scale plasmid preparation
Gel Documentation System	A-624	Agarose and Polyacrylamide Gel Photodocumentation
Molecular Imager	A-624	Scanning Densitometer with screens for analysis of ³² P, ³⁵ S and chemiluminescence samples
DNA Sequencing apparatus	A-633	Manual DNA sequencing
Pharmacia Phast System	A-621	Electrophoresis of DNA, Proteins
iCycler with Real Time PCR Module	A-633	Real Time PCR and PCR Reactions
Savant Concentrator with Refrigerated Trap and Gel Drying System	A-633	Concentration of DNA and protein samples, Drying of acrylamide gels
2400 Thermal Cycler	A-633	PCR Reactions

Oligo Version 6	A-621	Software for oligonucleotides analysis
GS-15R Refrigerated Centrifuge	A-633	Centrifuge with rotors for 1.5, 2.0, 15 and 50 mls centrifuge tubes
CHEF Electrophoresis System	A-621	Chromosome analysis

****Other equipment:***

Chromatography Refrigerator
pH Meter
Stratalinker
Microwave Oven
BioRad Dry Blot Apparatus
Portable Polaroid Camera
-20 Freezer

****The Facility also offers the following fee based services (see Appendix 2 & 3 for Oligonucleotides ordering and for pricing information):***

Oligonucleotide Synthesis
Oligonucleotide PAGE analysis
Peptide Synthesis
DNA Sequencing

Technical support is also available through the Facility Coordinator, Dr. José R. Rodríguez-Medina, its technician, Mrs. Lilliam Villanueva, and from collaborating investigators.

F. Operation Rules

****User Registration and Eligibility Criteria:***

Users should fill a registration form (*Appendix 1*). All individuals involved in scientific research in the Medical Sciences Campus can have access to Facility Services, after approval of the Facility Coordinator.

****Priorities:***

Service priorities are as follows:

1. RCMI Investigators / technicians / students
2. Medical Sciences Campus Investigators / graduate students / technicians
3. Researchers outside MSC

****Users responsibilities:***

1. Users should follow facility rules at all times.
2. Users should provide information regarding their publications, research support, and awards to be included in the Facility Annual Report to NIH.
3. Copies of publications should be sent to the RMCI Program Office:

RCMI Program

UPR Medical Sciences Campus

Office 621-A, 6th Floor

PO Box 365067

San Juan, PR 00936-5067

E-mail: efernandez@rcm.upr.edu

Telephone: 1-787-758-2525 Extensions: 1620,1621

****Facility Regulations:***

1. All equipment should be used on the premises unless its removal is authorized by the facility coordinator.
2. The coordinator of the facility reserves the right to regulate access to equipment, specifically: the right to set hours of operation of the facility, the right to limit unsupervised access.
3. ***Users should register for the use of the equipment by signing the logbook (Appendix 4).***
4. Each equipment item has rules for its use accessible at the site. The user should comply with these rules.
5. Users of services or resources of the Molecular Genetics Core Facility should ***acknowledge RCMI*** for the support in their research by including the following sentence in their publications, abstracts or presentations:

"This research was supported, in part, by a Research Centers in Minority Institutions Award, G12RR-03051, from the National Center for Research Resources, National Institutes of Health."

6. Users are not allowed to copy any software in computers connected to equipment from the Facility.
7. Information acquired with available software must be saved in an external disk (Zip) to avoid hard disk overload.
8. When a problem arises with the equipment, the user should notify it immediately to the technician in charge of the facility **and fill out a Problem Report Sheet. (Appendix 5). Users should not attempt to solve the problem by his/herself.**

G. References

DNA Sequencing Analysis Software Version 3.4.5. Applied Biosystems. Users Manual.

Gene Amp PCR System 2400. Users Manual Set. Perkin Elmer.

iCycler Instruction Manual. BioRad.

The iCycler iQ Real Time Detection System Resource Guide. BioRad.

Instructions for using the VTi50 Vertical Tube Rotor in Beckman Class H and R Preparative Ultracentrifuges. Beckman.

Model GS-15 and GS15-R Table Top Centrifuges Instruction Manual. Beckman.

Model GS-525/Model GS-505 Molecular Imager Storage Phosphor Imaging Systems. Instruction Manual. BioRad.

Molecular Analyst/Macintosh Software for BioRad's Image Analysis Systems. Version 2.1. Instruction Manual. BioRad.

Oligo Primer Analysis Software. Users Manual. Version 6. Molecular Biology Insights.

H. Approval of Guidelines

Approved by:



Emma Fernández-Repollet, Ph.D.
Director, RCMi Program

Date: October 3, 2002

I. Appendices

APPENDIX 1

**MOLECULAR GENETICS CORE FACILITY
USER REGISTRATION FORM**

Name: _____ **Phone number:** _____

Principal Investigator: _____ **Lab. #:** _____

School: _____ **Department:** _____

Degree: _____

Role in Project:

- | | |
|-----------------------------------|--------------------------|
| Principal Investigator () | Ph.D. Student () |
| PostDoctoral Research () | M.S. Student () |
| Associate Researcher () | Technician () |
| Undergraduate Student () | |
| Other: _____ | |

Instruments/services to be used:

_____	_____
_____	_____
_____	_____
_____	_____

Name of Project:

Approved by: _____ **Date:** _____

APPENDIX 2

MOLECULAR GENETICS CORE FACILITY
ORDEN DE OLIGONUCLEOTIDOS
OLIGONUCLEOTIDES ORDER FORM

NAME: _____ LAB DIRECTOR: _____ DATE: _____ EXT. _____

OLIGO NAME (8 symbols): _____ # OF BASES: _____ MODIFIED BASE(S): _____

SYNTHETIZED PREVIOUSLY? YES _____ NO _____

OLIGO DESCRIPTION (USE, POSITION, ETC.): _____

SEQUENCE 5' TO 3' ONLY

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

For Molecular Genetics Core Facility Use Only

Sequence Saved as: _____ Date: _____ Synthesis Date: _____ Synthesis Name: _____

Sequence verified by: _____ Date: _____ Result: _____

A _____ (312.2) C _____ (288.2) G _____ (328.2) T _____ (303.2) MW (g/mol): _____

APPENDIX 3

**MOLECULAR GENETICS CORE FACILITY
OLIGONUCLEOTIDE/PEPTIDE SYNTHESIS
SERVICES/ PRICING**

SERVICE	UNIT	CHARGE	DESCRIPTION
Oligonucleotide synthesis/analysis			
Oligonucleotide synthesis	base	\$1.00/base	0.2 µm scale synthesis, reverse phase chromatography cartridges, purification, gel analysis, quantitation
Oligonucleotide gel analysis	each	\$10.00	Additional oligonucleotide(s) analysis in Pharmacia Phastgel Electrophoresis System
Peptide synthesis			
HMP Resin/Linear Resin	residue	\$18.00/base	Peptide synthesis, resin cleavage, lyophilization
MAP resin	residue	\$18.00/base + resin charge	

APPENDIX 5

**MOLECULAR GENETICS CORE FACILITY
PROBLEM REPORT FORM**

INSTRUMENT:	DATE:	REPORTED BY:
ROOM:	TIME:	
DESCRIPTION OF PROBLEM:		
ACTION TAKEN: (FOR MOLECULAR GENETICS CORE FACILITY USE ONLY)		

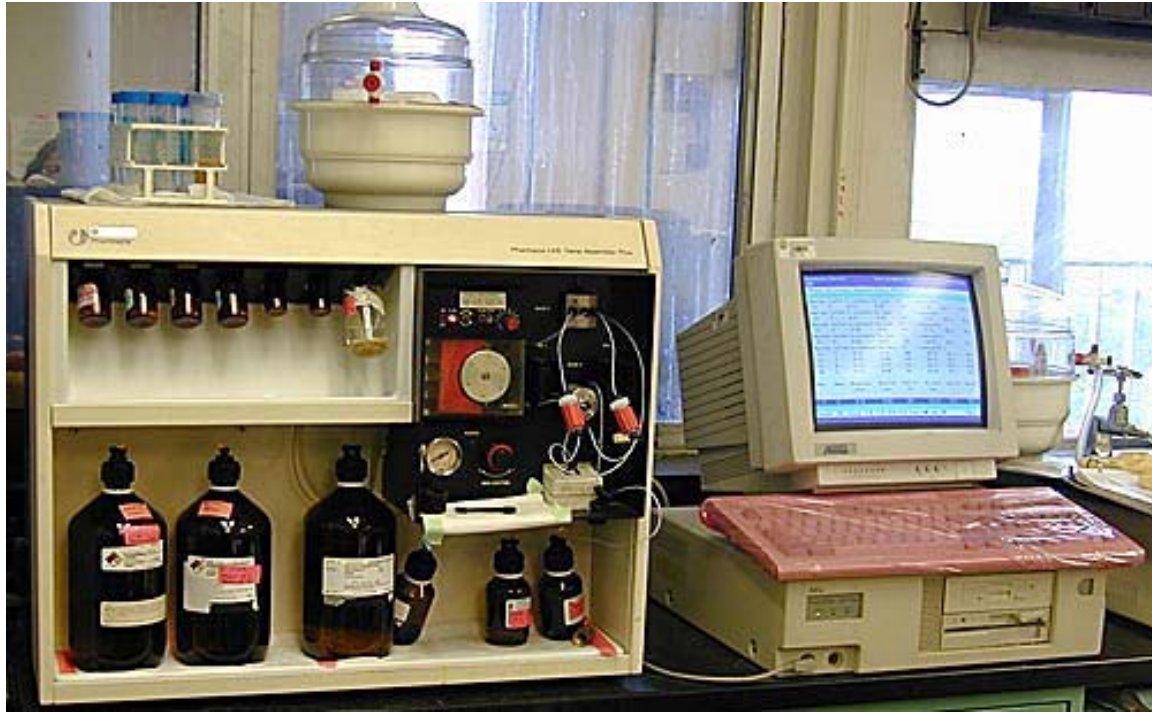
APPENDIX 6



Perkin Elmer 2400 Thermal Cycler and Beckman GS-15R Refrigerated Centrifuge



BioRad's Gel Documentation and Molecular Imager Systems



Pharmacia Oligonucleotide Synthesizer



BioRad's iCycler iQ Real Time PCR Detection System