



**MOLECULAR BIOS
Pvt. Ltd.**



ADVISORY COMMITTEE



MOLECULAR BIOS
Pvt. Ltd.



Dr. JOLLY JACOB

Professor of Chemistry &
chair of the department of
Applied Sciences, Abudhabi University



Dr. G BYJU

(PhD in Soil Science)
Director, Central Tuber Crops
Research Institute, Thiruvananthapuram



Dr. SHERIN SAHEERA

Cardiovascular Medicine
University of Massachusetts
Medical School, USA



Dr. G S UNNIKRISHNAN NAIR

Retired deputy director in
department of Agriculture,
Kerala



Dr. BEENA LAWRENCE

Associate Professor and Research
Guide Department of Botany
Women's Christian College Nagercoil



Dr. REENU YADAV

Dean, IES University,
Bhopal
Former Mrs. India International



Prof. Dr. G M NAIR

President KAS, Director CLIF
University of Kerala
Karyavattom, Trivandrum





MOLECULAR BIOS Pvt. Ltd.

Molecular Bios PVT Ltd is a contract research organization providing a wide range of services in molecular biology, biotechnology, microbiology, biochemistry, botany, zoology and chemistry. It's one among the top rated life science companies in Kerala based out in Trivandrum.

Our research starts in the year 2016, as a research Centre at Plamood, Trivandrum. In 2020, incorporated under companies act and renamed as Molecular Bios Private Ltd. Also we have started our new endeavor on mushroom spawn production and tissue culture at Kannanthura, Beach P O Trivandrum – 695007

We are offering research consultancy service to industries and academic institutions for UG and PG. Viva preparation class is our unique venture. Publication is our attraction. Also internship program provides hands on experience and knowledge in specific subjects. Moreover student-staff bonding, way of teaching, practical experience, equipment handling, thesis preparation make students more passionate towards the area of interest in life science. It is rated as one of the best biotech companies in India.

Molecular Bios PVT Ltd is one of the very few companies in Indian and the eastern region having multidimensional strengths and capabilities to provide organized & comprehensive consultancy/services in the field of Biopharmaceuticals & Biotechnology. Realizing biotechnology as one of the greatest intellectual enterprises of humankind, to provide the impetus that fulfills this potential of understanding life processes and utilizing them to the advantage of humanity

Molecular Bios PVT Ltd is based on Trivandrum, Kerala .Started with a new vision to bridge the gap between the industry and institutes by understanding the needs of the industry and the potential of educational institutes. It aims to be the leading service provider in all major areas of industrial and academic biotechnology in Kerala & India with a knowledge-based approach and personalized customer service

It started up as Biotech services & training company with the objective of preparing professionals with the right mind set and skill set to leverage the potential of Biotechnology through high quality, intensive practical oriented training programmes in several specialized streams. From biotechnology to clinical trials, Molecular Bios delivers solutions that help utilize information effectively and transform key business practices. With an unparalleled dedication to quality, we help our clients' priorities, plan, and implement the right technology solutions to meet their needs, all the way from discovery to product launch.

Molecular Bios PVT Ltd has 2 wings of operations as of now:

Education - Which provides Training,

Project Research work on any segment of Biotechnology &

Manufacturing - We are into Animal Biotech



OUR SERVICES

Molecular Biology Studies

PCR ANALYSIS

- MRNA ISOLATION
- CDNA SYNTHESIS
- GENE EXPRESSION STUDIES
- PLANT VIRAL INDEXING
- MUTATION STUDIES
- GENETIC VARIATION STUDIES



MOLECULAR CHARACTERISATION

- BACTERIA
- FUNGI
- INSECTS
- PLANT
- MICRO ALGAE
- ANIMALS



PROTEOMICS & ENZYMES

- PURIFICATION BY AFFINITY CHROMATOGRAPHY
- PROTEIN SEPARATION BY SDS- PAGE
- GENERAL ENZYME ASSAYS
(AMYLASE, PROTEASE, PECTINASE,
CELLULASE, CHITINASE ETC)
- ENZYME KINETICS
- ENZYME IMMOBILISATION



INVITRO PHARMACOLOGICAL STUDIES

Determination of biological effects of a test sample in an isolated environment, such as cell lines or tissues. This setup conveniently eliminates whole organism physiological influences allowing for a detailed analysis a compound's impact.

CYTOTOXICITY STUDIES

- MTT ASSAY, NEUTRAL RED ASSAY
- BCL2, BAX GENE EXPRESSION STUDIES
- CYTOPROTECTIVE STUDIES
- BIO-COMPATIBILITY STUDIES
- DNA CLEAVAGE STUDY



INVITRO COSMETIC ASSAYS

- TYROSINASE ASSAY
- LIPOXYGENASE ASSAY
- ELASTASE ASSAY
- HYALURONIDASE ASSAY
- COLLAGENASE ASSAY
- VITAM C DETERMINATION
- SUN PROTECTION FACTOR DETERMINATION



ANTI-INFLAMMATORY STUDIES

- PROTEIN DENATURATION INHIBITION ASSAY
- COX LOX ANALYSIS

- SCRATCH WOUND HEALING ASSAY
- COX2, INOX GENE EXPRESSION STUDIES
- ALKALINITY
- TOTAL ANTIOXIDANT



ANTIOXIDANT STUDIES

- DPPH
- REDUCING POWER
- NITRICOXIDE ASSAY
- ABTS
- FRAP
- CARBONATE & BICARBONATE



ANTI DIABETIC STUDIES

- ALPHA GLUCOSIDASE INHIBITION ASSAY
- ALPHA AMYLASE INHIBITION ASSAY
- GLUCOSE UPTAKE ASSAY
- GLUT 4 GENE EXPRESSION STUDIES



ANTI MICROBIAL STUDIES

- ANTIBACTERIAL STUDIES (PLATING METHOD BY WELL DIFFUSION/DISC DIFFUSION)
- ANTI-FUNGAL STUDIES
- MIC, IC50 BY SPECTROPHOTOMETER
- ANTI-BIOFILM ACTIVITY
- MICROBIAL GROWTH KINETICS



BIOCHEMICAL STUDIES

NUTRITIONAL STUDIES

- ESTIMATION OF CARBOHYDRATE, PROTEIN, FAT, AMINO ACID
- VITAMIN C
- CRUDE FIBRE
- PEROXIDE VALUE
- ACID VALUE



WATER QUALITY ANALYSIS

- BOD (BIOLOGICAL OXYGEN DEMAND)
- COD (CHEMICAL OXYGEN DEMAND)
- Ph
- DO (DISSOLVED OXYGEN)
- ALKALINITY
- CARBONATE & BICARBONATE



SOIL ANALYSIS

- NITRATE, NITRITE & AMMONIACAL NITROGEN ESTIMATION
- POTASIMUM
- CALCIUM
- Ph



SOIL MICROBIOLOGY

- ISOLATION OF NITROGEN FIXING BACTERIA
- PHOSPHATE SOLUBILIZING BACTERIA
- POTASSIUM SOLUBILIZING BACTERIA
- PGPR, BIO PESTICIDE & FERTILIZER SCREENING



PHYTOCHEMISTRY

PHYTOCHEMICAL EXTRACTION

- ESSENTIAL OIL EXTRACTION (VOLATILE)
- SOXHLET EXTRACTION
- COLD MACERATION



PHYTOCHEMICAL SCREENING

- QUALITATIVE ANALYSIS
- QUANTITATIVE ESTIMATION
- TLC
- COLUMN CHROMATOGRAPHY





INTERNSHIP & TRAINING

SHORT TERM TRAINING

Short term training opportunities available on Advanced techniques in Animal Cell culture, Plant Tissue culture, Molecular Biology, Phytochemistry etc. Express your interest to attend short term training with nominal fees biosresearchcentre@gmail.com

THREE MONTHS INTERNSHIP


Life science Postgraduates can apply for internship. Submit your resume biosresearchcentre@gmail.com (should mention in e mail subject field as 'Three months Internship'. Candidate will get exposure in all advanced techniques in life science.

LIST OF COLLEGES COLLABORATING WITH US

- MAR IVANIOS COLLEGE, NALACHIRA
- ST. XAVIERS COLLEGE, THUMBA
- WOMENS COLLEGE, VAZHUTHACAUD
- NATIONAL COLLEGE, KARAMANA
- AJ COLLEGE, THONNAKKAL
- INDIRAGANDHI COLLEGE, KOTHAMANGALAM
- SD COLLEGE, ALAPPUZHA
- SN COLLEGE, KOLLAM
- FATHIMA MATHA COLLEGE, KOLLAM
- UC COLLEGE, KOLLAM
- MARTHOMA COLLEGE, PALA
- ST. THOMAS COLLEGE
- GARDEN CITY UNIVERSITY, BANGLORE
- CHRIST UNIVERSITY, BANGLORE
- AYYAPPA COLLEGE, CHENGANOOR
- ARTS COLLEGE, TRIVANDRUM





PUBLICATIONS

- **Mary Reena Jacob & Vidhya Ramaswamy** “Probiotics-A Magical portion in Microbial Factories” Indian journal of Botanical Research 2006, vol.2 (2):219-228.
 - **Mary Reena Jacob** “DNA Finger Printing” abstracts on “Recent Trends in Microbial Technology and Engineering
 - **Mary Reena Jacob & Dr.Aldous Jude Huxley** . Molecular diversity analysis of cuttlefish (*Sepia officinalis*) populations using RAPD markers. Journal of Advanced Biotechnology. Vol.VIII, (09) 23-26 (ISSN: 0973-0109). 43.
 - **Mary Reena Jacob & Dr.Aldous Jude Huxley** Preliminary characterization of *Sepia* Mitogenome . Journal of Advanced Biotechnology. Vol. VIII (II) 8-12 (ISSN: 0973-0109)
 - **Mary Reena Jacob & Dr Aldous Jude Huxley** ‘The Cuttlefish is declining” Indian Journal of Multidisciplinary Research, September issue 2009, vol.5 (3); 345-348.
 - **Mary Reena Jacob & Dr Aldous Jude Huxley** ,Cytochrome c oxydase sequences in *sepia officianalis* were submitted in NCBI (National Centre for Biotechnology information) and numbered as HQ 1410 83 ,HQ 1410 84, HQ 1410 85,HQ 1410 86 ,HQ 1410 87.
 - **Mary Reena Jacob & Prof. Muraleedharan Damodaran** , “Taxonomic
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Description of Cuttlefish Using Microsatellite and allied Molecular Markers”abstracts on IInd National Symposium on “Innovative Approaches and Modern Technologies for Crop Productivity, Food Safety and Environmental Sustainability” The Society for Applied Biotechnology (SAB)

- **Malu Ravi***, **Mary Reena Jacob**, **Govindan Bhaskaran**, **Chaubey R.C.** and **Muraleedharan Damodaran**. “Gamma Radiation Sensitivity on Larvae and Eggs of Common Mormon butterfly, *P. polytes*” Entomon, June issue, 2011, Vol 36
 - **C A Jayaprakas*1**, **R.S Sreerag 1**, **L. Ragesh 1** and **S N Moorthy 2**, **Mary Reena Jacob2** “Efficacy of Pyrethroid Based Insecticides Against *Rhizococcus amorphophalli* Infested Tubers of *Amorphophallus paeoniifolius* Under Laboratory Conditions”, Entomon ,June issue ,2011, Vol 36
 - **Mary Reena Jacob and Muraleedharan Damodaran**, “Microsatellite Polymorphism and Population Structure of the genus *Sepia*” Indian Journal of Biotechnology .
 - **Dr.Mary Reena Jacob** et al , “Medicinal Neer Brahmi ”in Kerala Karshakan ,Govt of kerala ,volume 6,issue 6,December 2018 .
 - **Dr.Mary Reena Jacob** et al ,”Virus Indexing in Cassava Mosaic Disease” in Kerala Karshakan ,Govt of kerala ,April 2019.
 - **Dr.Mary Reena Jacob** et al , “Root nodule of *Vigna Unguiculata*”in Kerala Karshakan ,Govt of kerala ,volume 7,issue 3,September 2019 .
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- **Dr.Mary Reena Jacob** et al , “Root nodule of Vigna Unguiculata”in Kerala Karshakan ,Govt of kerala ,volume 7,issue 3,September 2019 .
 - **Dr.Mary Reena Jacob** et al ,”Isolation and Characterization of Bacteria associated with gut microflora of mullet”in International journal of Multidisciplinary Research Review ,volume 6,Issue 10,October 2020.
 - **Dr.Mary Reena Jacob** et al ,” Total Protein Profiling of Allamanda cathartica L and Thevetia peruviana using Polyacrylamide gel electrophoresis (SDS PAGE)”in International journal of Multidisciplinary Research Review ,volume 6,Issue 10,October 2020.
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Dr. Mary Reena Jacob M.Sc., B.Ed., Ph.D., Post doc., FSAB

10 YEARS Experience in Research Field. Published more than 20 Research Papers.

Projects Supervised

UG - 150 Projects, PG - 60 Projects, M.Phil - 5 Projects, PhD-5

AWARDS

Honorable Society Fellow Award of 2012 from the Society for Applied Biotechnology, India at the IInd SAB Conference held at Trichur on 20th November, 2012.

Honoured “Excellent Contribution to Biotechnology Research and Development” in

the Golden global Health and Education, International Conferences and Awards held at Dubai,UAE on 16th November ,2019

Membership in Professional Bodies/Learned Societies:

Life member, Society for Applied Biotechnology (SAB)

Life Member, Biotechnology Research Society of India (BRSI)

Life Member, Ethological Society of India (ESI)

Life Member and Secretary & Treasurer, Association for Advancement for Entomology

Life Member, Canadian Society for Molecular Biology (CSMB) Canada.

Honorary Member of the Editorial board of the IJBST Journal group.





MOLECULAR BIOS Pvt. Ltd.

**MOLECULARBIOS PVT LTD
BIOTECHNOLOGY COMPANY**

**EMS NAGAR, PATTOOR, VANCHIYOOR PO
THIRUVANANTHAPURAM. 695035**

biosresearchcentre@gmail.com | www.molecularbios.in

Mob: 9947577163