



Biotechnology Training by  
**ADEETECH**

**Dr. Devendra Lingojwar founded ADEETECHGENE BIOTECH PVT. LTD., ATG LAB and RESEARCH ngo and which are pioneering in the field of skill development and contract research in Molecular Biology covering various fields: Human Genetics and genomics, Molecular Microbiology, Plant Molecular Biology and Human Virology in India since 2007.**



*He contributed his services USA and INDIA. Human Genetics and Drug Discovery: Albert Einstein College of Medicine Yeshiva University and Montefiore New York City, NY USA. rDNA Vaccine and B19 virus discovery in India at National Institute of Virology – ICMR. Sickle Cell Disease at National Institute of Immunohematology – ICMR. Teaching virology at DY Patil University and Beta thalassemia detection kit IRSHA Bharati University. More than 14 years of experience in Molecular Biology and Genomics and 3 years in Protein Biochemistry.*

*ATG.....First Student Oriented brand in India established in 2007. Trained thousands of students and faculties from all over India and abroad including PhD's. Since 2007, with a decade of experience of providing guidance in biotechnology and life sciences, success stories from our laboratory are self-explanatory, why you should join our team for your career. Taking only merit student and absorbing in own R&D lab that's the trend of most of the established big labs in India. But the real fun is taking any student wherever they are, at present (irrespective of the marks, gap after marriage for girl students, caste, religion, region, language, color, race, ethnicity and nationality with full understanding of their real problems) and making their career.*

*Our aim is to provide very good research platform with full freedom for budding scientists. The vision and scientific aptitude we create among students in our lab boosts the confidence in graduate and post graduate students required not only in interviews and but also conducting effectively their actual duties in academics, R&Ds, biotech companies, jobs and career abroad. This will be a golden opportunity to build enough confidence before fresh student enter in job market. Exchange of ideas among the faculties, students and ADEETECH'S student community in Facebook, LinkedIn and other social platform as well as past students who are working in USA and other countries. Many other countries proved beneficial for career guidance for fresh students who wants to go abroad. Contacts and guidance of these eminent persons in their field, with the bond we established, spanning more than a decade will be enough for building strong research profile before project completion.*

*ATG (ADEETECHGENE) itself acts as "initiation codon" and there should be no more suffering for guidance for doing science. Ask ADEETECH's community abroad, How is the research and life out of India? How beautiful the world of research ? Come to ATG. Know who you are. Discover yourself. Go abroad,*

*A wonderful career is there. Fulfill your dreams.....!!!*

*ADEETECH provides training in the range of cost effective @ Rs. 999/- for one day to Rs. 75,000/- for 90 days. Fees is based on course contents and not duration. Those who are planning to go abroad for further education, MS or PhD degrees, or serving as a faculty or international students and wants to finish hands on training is minimum duration, can take these courses.*

## ATG1: Biotechnology and bioinformatics

Biotech protocols: DNA extraction, PCR of extracted DNA, electrophoresis, Restriction digestion, Ligation, Protein isolation, purification, SDS PAGE, Human genetics SNP studies with clinical correlation to sickle cell anemia, Bioinformatics protocols for viral / Bacterial / human genomics: NCBI / Pubmed (Finding gene within whole genome, FASTA, Gene Bank, Graphic) Chromas / Bioedit (DNA sequence data interpretation, reverse and forward primer sequence studies, BLAST, Reverse complement, BLAST2, Multiple Sequence alignment, Phylogenetic tree, Protein comparative structural analysis with SPDB, Visualization by Discovery studio & Chimera Theory of related protocols. **Fees Rs. 35,000/- Duration 30- 60 days**

## ATG2: Recombinant DNA Technology and Genetic Engineering

DNA extraction, Nested Two step PCR for Viral detection, (only a part of noninfectious viral DNA cloned in plasmid, biologically safe for students handling), Agarose gel electrophoresis, Restriction digestion: By Eco RI / Hind III restriction endonuclease, Ligation By T4 DNA ligase, Subculture of E. Coli, Preparation of E. coli (host cells) in log phase, Competent cell preparation by CaCl<sub>2</sub> method, Transformation, Insertion of plasmid into competent E. coli, Screening of transformants, calculation of transformation efficiency, SDS PAGE, Western blot with Theory: **Fees Rs. 40,000/- Duration 30- 45 days**

## ATG3: Complete PCR Technology

6 PCR Protocols (All important types of PCRs) DNA extraction protocol by DNAzol as well as by spin column method, 1. Level 1 PCR with ready to do master mix, 2. Nested two step PCR, 3. Gradient PCR for standardization of new PCR, 4. Touch down PCR for Trouble shooting, 5. bacterial identification PCR by 16S rRNA conserved region primers, 6. Human X and Y chromosome PCR (PCR Theory: Basic PCR, PCR types, electrophoresis, How to set up PCR reaction: calculation for PCR reagents, Primer designing. **Fees Rs. 30,000/- Duration 25 to 45 days**

## ATG4: Transformation

Subculture of E. coli, preparation of log phase bacteria; preparation of competent cells; transformation protocol, screening of transformants, colony counting and transformation efficiency with Theory. **Fees Rs. 7500/-, Duration 6 -10 days**

## ATG5: One day PCR training (Sunday Batch of 5 Students)

One PCR and one electrophoresis only wet lab protocols. **Fees Rs. 999/- 1 days**

## ATG6: Biotechnology and bioinformatics

RNA isolation by Trizol, cDNA preparation, RT reaction of extracted RNA, PCR of prepared cDNA, DNA electrophoresis for visualization of PCR product on agarose gel with Theory. **Fees Rs. 7500/- Duration 6 days**

## ATG7: Introductory PCR Training

Level 1 PCR with ready to do master mix and DNA electrophoresis; Nested PCR with two sets of primers for viral detection and DNA electrophoresis: with Theory: 2 lectures (Basic PCR and DNA electrophoresis). **Fees Rs. 7500/- Duration 6 days**

## ATG8: Basic Molecular Biology

Basic student's PCR (Level 1 PCR with ready to do master mix & DNA electrophoresis; Nested PCR with two sets of primers for viral detection & DNA electrophoresis, DNA extraction & PCR with extracted DNA & DNA electrophoresis, Theory: lectures (Basic PCR, PCR types and DNA electrophoresis: **Fees Rs. 10,000/- Duration 12 to 15 days**

## ATG9: Advanced Molecular Biology

Basic students PCR (Level 1 PCR with ready to do master mix & DNA electrophoresis; Nested PCR with two sets of primers for viral detection & DNA electrophoresis, DNA extraction & PCR with extracted DNA & DNA electrophoresis, Subculture of E.coli; preparation of log phase bacteria; preparation of plasmid; preparation of competent cells; transformation, screening of transformants. Theory (PPT): lectures (Basic PCR, PCR types, DNA electrophoresis, Transformation, Calculations. Duration: Rs.15,000/- Duration 18 to 25 days

## ATG10: Advanced Molecular Biology

Protocols: Nucleic acid isolation, PCR & DNA electrophoresis: DNA and RNA extraction a. Standard general student's PCR, b. Nested PCR for viral diagnosis by diagnostic primers set, c. Gradient PCR: Standardization of new PCR, d. Applied PCR for bacterial detection from conserved region primers, Reverse Transcriptase PCR: RT-PCR for specific Human cell lines with DNA electrophoresis Transformation: Competent cell preparation, transformation, identification of transformants, Protein: Collection, Processing, Isolation, purification, Hb electrophoresis & comparative studies with clinical profile, Pedigree analysis of genetic disorder and Gene flow studies from actual research project at ATG, Standard SDS PAGE, Applied Bioinformatics: Reading DNA sequence from Applied Biosystems 310 / 3100 Genetic analyzer, Correction of sequence data for data selection for BLAST, Reverse and forward primer data interpretation, Primer designing: Bioinformatics Software and tools for designing primers, BLAST, Multiple sequence alignment and Phylogeny,

Theory: Basic PCR, PCR types, DNA electrophoresis, How to set up PCR reaction: calculation for PCR reagents, Introduction to Primer designing, transformation, Assessment after training: Lectures by trainee to fresh trainee students, calculation demonstration to new fresh trainees, Group discussion, PowerPoint presentation, CV preparation for particular interviews etc. (Most desired course of ATG LAB i.e. combination of all ATG1+ATG2+ATG3, those who wants to go USA and other countries, this is a must course to do)

Fees: Rs. 75,000/- Duration: 60 to 120 days

## ATG11: Human Genetics and Genomics

1. PBMC separation from blood by Ficol gradient method (Histopaq by Sigma); 2. DNA extraction from WBCs by DNAzol method; 3. Sickle cell anaemia molecular detection (1 PCR and 1 Agarose gel Electrophoresis, with five primers set and and two genotypes) 4. Sickle cell anaemia biochemical detection (blood sampling, red cell washing and protein purification and Hb electrophoresis) 5. Human X and Y chromosome detection (1 PCR and 1 Agarose gel Electrophoresis)

Fees Rs. 30,000/- Duration 25 to 45 days

## ATG12: Bacterial Genomics and PCR

1. DNA extraction from bacteria by DNAzol method; 2. Gradient PCR for 16S RNA and agarose gel electrophoresis; 3. Scale up PCR for 16S RNA and agarose gel electrophoresis; 4. RNA dependent RNA polymerase B subunit (rpoB) for differentiation of Bacillus cereus; group bacteria and agarose gel electrophoresis; 4. DNA sequence data analysis from available chromatograms for 16S rRNA and rpoB genes; 5. NCBI BLAST, BLAST2, ClustalW and Phylogenetic analysis; 6. Data analysis for above studies for final bacterial identification at species level.

Fees Rs. 30,000/- Duration 25 to 45 days

## ATG13: Plant Genomics and PCR

1. DNA extraction from plant by CTAB method; 2. RAPD PCR for one primer and three plants with agarose gel electrophoresis 3. RAPD PCR for one plant and three primers with agarose gel electrophoresis; 4. Internal Transcribed Spacer Region 2 (ITS2) Scale up PCR and agarose gel Electrophoresis; 5. DNA sequence data analysis from available chromatograms for ITS2 gene 6. NCBI BLAST, BLAST2, ClustalW and Phylogenetic analysis for ITS2 gene; 7. Data analysis for above studies for final identification of plant at species level and differentiation of two different plants at species level

Fees Rs. 30,000/- Duration 25 to 45 days

## ATG14: Animal Cell and Tissue Culture

Protocols: Inoculation of sample in egg. Special purpose egg for viral studies. Primary culture, Chick embryo culture, dissection of mice and liver cell and tissue culture. Maintenance of HepG2 and coculture, viral infections to vero and HepG2 cell line. Cord blood red cell isolation, RBC culture and red cell assays, Theory: Sterilization, disinfection, media preparation, tissue culture lab set up and clean work culture, contamination and diagnosis of source of contamination, yeast, mycoplasma, PCR based detection of contaminants, Different culture media, MEM, DMEM, RPMI 1640, Red cell culture in RPMI 1640 for malaria parasite studies,

Fees Rs. 30,000/- Duration 30 to 45 days

## ATG15: Immunology and Virology

Protocols: Recent & Past infection studies by ELISA: IgG & IgM detection, Viral antigen detection by standard nested PCR, Viral RT PCR, DNA & RNA extraction and isolation of non-infectious viral proteins, DNA electrophoresis and Southern blot, RNA electrophoresis and Northern blot, Protein electrophoresis SDS PAGE and Western blot:

Theory: Molecular Biology of Viruses. Replication strategies of different types of viruses based on nature of DNA and RNA genome. Genome organization. Plant and animal viruses. History of virology, common diagnostic techniques in virology. Antigen test, antibody test, ELISA recent and past infections, Different types of ELISA, Virus neutralization tests, virion and multiplicity of infection. Viral life cycle, viral pathogenesis in human, animal and plants, Plant viruses important from crop and vegetables in India, Common viral infections in India, new and emerging viruses in the world. SARS Corona virus, HIV, HCV, HBV, HAV, HEV, Parvovirus B19, Cytomegalovirus, Zika virus, Ebola virus, Vaccine research and recent trends in virology for jobs and career development. National Institutes of virus diagnostics centers and jobs in India and USA.

Fees Rs. 50,000/- Duration 60 to 90 days

## ATG16: Virology and Bioinformatics

Virology Theory for reading: Molecular Biology of Viruses. Replication strategies of different types of viruses based on nature of DNA and RNA genome. Genome organization. Plant and animal viruses. History of virology, common diagnostic techniques in virology. Antigen test, antibody test, ELISA recent and past infections, Different types of ELISA, Virus neutralization tests, virion and multiplicity of infection. Viral life cycle, viral pathogenesis in human, animal and plants, Plant viruses important from crop and vegetables in India, Common viral infections in India, new and emerging viruses in the world. SARS Corona virus, HIV, HCV, HBV, HAV, HEV, Parvovirus B19, Cytomegalovirus, Zika virus, Ebola virus, Vaccine research and recent trends in virology for jobs and career development.

National Institutes of virus diagnostics centers and jobs in India and USA.

Selected topics for review in Virology, Duration: 6 months

Comparative Genomics and proteomics studies on COVID19: Database and ICTV, types of viruses based on Genome DNA and RNA, viral genome organization, protein sequence comparative antigen sequence, epitope mapping for antigen kit R&D, DNA and RNA sequence data analysis for conserved region test development for PCR and RT PCR, Viral genomics and proteomic for phylogenetics studies, variant detections using bioinformatics tools. Similarities and differences in COVID19 variants. Past, present and predicted future of COVID19

Course content theory and protocols: ATG15 plus Review writing in viral diagnostics/ viral vaccines/ antiviral research/ prevalence and epidemiology. Project design using above in silico protocol (work from home mode) in viral genomics and proteomics to generate data for final year project submission. Each student separate topic. Duration 6 months (Fees: Price on Request)





## ATG1 BIOINFORMATICS AND BIOTECHNOLOGY TRAINING PROGRAM

One of the most appreciated training since 2007 in India by International students and faculties. A very rare course with equal weightage on wet lab and in silico bioinformatics course contents.

### Key features:

**All types of genome organization studies for practise:** Human, Plant, Bacteria, Parasite, Insect, Virus etc. All type of virus genome studies. Beta globin gene family for Human studies.

**Both genomics and proteomics in one course:** From DNA extraction to PCR and DNA sequence analysis to simple field work based pedigree analysis. Both, DNA and Protein electrophoresis

Download Registration form For admission confirmation and more updates log on to

www.adeetech.com

## ATG1: Bioinformatics Protocols

NCBI database and gene annotation (Genebank, Graphic & FASTA format):

**Viral genome:** DNA viruses: Single stranded virus: Human Parvovirus B19 (DL:NIV); dS: Human Rotavirus; RNA viruses: (+)sense: Dengue; (-) sense: Rabies; Ambi sense: Lassa fever virus; Human Herpes virus; HIV 1 & 2; H1N1 Influenza

**Bacterial genome** (any one): E. coli; Bacillus anthracis; Lysinibacillus sphaericus sp DL15.; Stenotrophomonas sp DL18.

**Human Genome:** Beta globin gene family / ATP synthase

**Plant Genome:** Barcoding genes ITS2 database / Gender determination

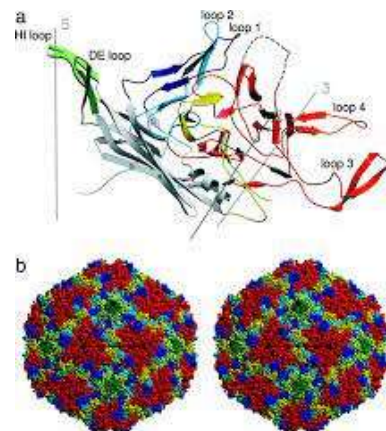
### Primer designing:

Primer3 / NCBI / IDT (one virus, one bacteria and one human example): Human parvovirus B19 Human Beta globin gene; rpoB / ATP synthase Bacillus anthracis Lysinibacillus sphaericus sp DL15, Stenotrophomonas sp DL18.

### DNA sequencing data interpretation and molecular identification

Chromas / Bioedit; Reverse complement; NCBI BLAST2; NCBI BLAST Multiple sequence alignment and Phylogenetic studies Clustal Omega; MEGA 7 ./ MEGA11

**Proteomics:** Amino acid sequence & structural comparison and visualization SPDB; Cn3D; Discovery studio; Chimera



## ATG1: Biotech protocols:

1. DNA extraction by DNAzol method
2. Polymerase Chain Reaction on extracted DNA
3. Agarose gel electrophoresis for visualization of PCR products
4. Restriction digestion: Eco RI / Hind III digestion
5. Ligation: T4 DNA ligase
6. Protein isolation and separation: Amylase and PRP studies by SDS PAGE, OR Hemoglobin studies
7. Blood collection, separation of RBCs, Hemolysate preparation and Cellulose acetate membrane electrophoresis for Hb pattern
8. studies and comparison with other abnormal hemoglobin variants
9. Sick cell anemia: Comparative studies with earlier field studies: SNP studies with clinical correlation

**Duration 30 to 60 days: Fees Rs. 35,000/-**



## ATG2 BASIC MOLECULAR BIOLOGY FOR RECOMBINANT DNA TECHNOLOGY TRAINING PROGRAM

One of the most appreciated training since 2007 in India by International students and faculties. A very rare course with basic step and its intricacies which can be easily masters at ADEETECH for any advanced rDNA technology later.

### Key features:

Work flow based training program for complete understanding of the rDNA technology

All protocol are designed in such a way that after taking this course, students will develop their skills in rDNA technology with complete understanding of the work flow.

Download Registration form For admission confirmation and more updates log on to

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## rDNA Technology Protocols

**Nucleic acid extractions**, DNA or RNA, PCR for amplification of desire gene, Agarose gel electrophoresis for DNA separation, Restriction digestion: By Eco RI restriction endonuclease, Ligation: By T4 DNA ligase.

**Cultivation of bacteria**: Subculture of E. Coli from stock culture  
Log phase culture preparation: Preparation of E. coli (host cells) in log phase stage.

**Host vector preparation**: Competent cell preparation by CaCl<sub>2</sub> method & PUC 18 plasmid preparation.

**Transformation**: Addition of plasmid into competent E. coli

**Screening of transformants**: Observation of colonies and calculation of transformation efficiency



## Trouble shooting, Theory and calculations

Introduction and concept of Bacterial transformation, competent cell preparation, PCR: Basic concepts and applications, Basic PCR protocols and thermal cycler, Reaction setup and ways of standardization, Post PCR aspects, Theory and concept of Electrophoresis: agarose gel electrophoresis. Transformation efficiency. Use of transformation and PCR in rDNA technology. PCR and Transformation troubleshooting.

Duration 30 to 60 days: Fees Rs. 40,000/-



## ATG3 COMPLETE PCR TECHNOLOGY TRAINING PROGRAM

One of the most appreciated training since 2007 in India by International students and faculties. A very rare course with basic step and its intricacies which can be easily masters at ADEETECH for any advanced PCR technology later.

### Key features:

Work flow based training program for complete understanding of the PCR technology.

In this complete PCR technology course, total 6 PCR Protocols will provided as individual hands on practical. All essential and important types of PCRs will be covered in the program.

After taking this course, students will develop their skills in PCR genomics area with complete understanding of the work flow.

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## PCR Protocols

Level 1 PCR with ready to do master mix with bacterial / human genomic DNA.

Level 2 PCR: preparation of master mix by student followed by PCR on positive control DNA.

Level 3 PCR: DNA extraction by DNAzol method, master mix preparation, PCR on extracted DNA.

Standardization of annealing temperature i.e. Gradient PCR (Trouble shooting PCR).

Standardization of MgCl<sub>2</sub> for PCR (ITS2 Plant PCR) (Trouble shooting PCR).

Any one from list of following application PCRs:

Human X and Y chromosome PCR and analysis for gender determination.

Bacterial identification based on 16S rRNA with phylogeny for identification of bacteria.

Plant identification PCR based on ITS2 and phylogenetic analysis of available sequence data.



## PCR Genomics Theory

Database and basic requirement for complete understanding of PCR

PCR Primer: Primer alignment, primer designing, SNP, Nested, diagnostic and conserved region primers etc.

PCR Theory: Basic PCR, PCR types, electrophoresis, How to set up

PCR reaction: calculation of all PCR reagents, Basic Primer designing, primer calculation for final PCR set up.

Theory and concept of PCR and DNA Electrophoresis using agarose gel, Introduction and concept of PCR, Basic PCR protocols and its variations, Thermal cyclers and evolution of PCR technology, Variation based on reagents including primers, Variation based on genomic DNA, Variation based on cycling conditions, PCR Applications: Conserved region primers e.g. 16 S rRNA PCR and DNA sequence analysis for bacterial identification, PCR Applications: Specific primers for PCR based detection without DNA sequencing, diagnostic PCR, How to set up PCR: PCR reagent and primer calculation

Duration: 30 to 60 days Rs. 30,000/-



## Contact



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## Faculty / Scientists / Student's details

Name.....  
ID details (Passport / driving license no.).....Nationality.....  
Date of Birth.....Male / Female

Paste  
Passport  
Size  
color  
photograph  
here

**Imp Note:** Clearance from FRO Pune office is mandatory for International scientists / students / Faculties \*\*\*International candidates should contact us in this regard before confirmation of any program

Father's / Husband's name.....  
Contact No (Landline and mobile).....  
Permanent address

.....Country.....  
Class & Semester / Year .....(B.Sc./ M.Sc. / B.Tech. / M.Tech / MS / BE / MBA Biotech etc)  
Degree / Institution / College / University details with address

**Candidate's contact details:** Email

Mobile:

Please (✓) what is applicable:

Training ☐ Project ☐ Workshop ☐ International Training Program ☐

**Duration:** .....Days / Months. Dates, from..... to.....

**Candidate's Signature**

## Required documents for Registration:

1. **Completely filled registration form along with lab fees transaction proof** (For All Services)
2. **Recommendation letter from Institute** (For final year projects only: 4 / 6 / 8 months duration).
3. **Photocopy of ID proof: Any one** (Aadhar card/ PAN/ Driving License/Voter ID/ Passport etc.)

## Details of online payments: (However, Google pay/ Cash also accepted).

Account Name: ADEETECHGENE BIOTECH PRIVATE LIMITED (18% GST Applicable)

Bank: Bank of Baroda, Aundh Branch Pune

Account Number: 386 002 000 002 29 IFS code: BARB0AUNDHX

**Registration Process:** Send this completely filled registration form along with above mentioned documents and receipt of the online fees paid i.e. 100% of the total fees (as per pricelist of courses: Final year projects/ Training Programs / Onsite Workshop) and scan copies of documents to info@adeetech.com

## IMP.NOTE: How to start Training / project / contract research / any other services

Once you decide, that you want to study (training / projects / any other services) and wants to confirm after initial discussion or email enquiry, with reference to project cost, duration, then send completely filled registration form with fees and necessary documents. Once it is received at our end following details, we will discuss with you....

**1. For research project and contract research:** We will send topic with one page write up including title, aims and objective, materials and methods, possible outcome of the thesis, Significance of the proposed research project, some references so that you can study more before your arrival. All research projects are individual basis and with first authorship for databased in NCBI. There is no group project in our lab. Guidance will be provided for entire project; however, thesis writing is responsibility of research student. Additional paid service for thesis writing can be made available through our faculties, in an exceptional case where final year research students couldn't complete thesis writing in time, due to marriage, accidents or any other unavoidable circumstances.

**2. For training / workshop:** We will plan your schedule as per provided dates or will let you know available dates Once we receive this completely filled form along with prescribed training / internship fees, we will send confirmation by email with details of finalized protocols on individual basis under training program.3. Payment and amount: There are no registration charges. However, 100% fees is compulsory along with registration which is nonrefundable. In case of installments 50% advance fees remaining 50% as postdated cheques at the time of admission.