



Venture Center  
100, NCL Innovation Park  
Dr. Homi Bhabha Road, Pune –411008  
Email: [eventsdesk@venturecenter.co.in](mailto:eventsdesk@venturecenter.co.in)  
Phone: +91-20-2586-5877

Technical Workshops Series 2014

## 3 Days Workshop on Molecular Biology / Genetic Engineering applications

- Organized by Venture Center -

<b>Learn</b>	Principles, techniques and applications of Molecular biology/ Genetic Engineering; Demonstrations and hands-on lab experiments; Workshop is intended to be basic.
<b>Organized by</b>	Venture Center – a Technology Business Incubator
<b>For whom</b>	<ul style="list-style-type: none"><li>• Biotechnology and pharmaceutical industry professionals</li><li>• Students and staff of various disciplines of life sciences</li></ul> Maximum 20 seats; First-come-first-serve.
<b>When</b>	5–7 August, 2014
<b>Where</b>	Training Room and Lab Block, Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha Road, Pune-411008
<b>Contact</b>	Ms. Lipika Biswas Phone: 020-25865877 Email: <a href="mailto:eventsdesk@venturecenter.co.in">eventsdesk@venturecenter.co.in</a>
<b>Cost</b>	<ul style="list-style-type: none"><li>• Students with valid ID card: Rs 5,000</li><li>• Micro and small enterprises/ individuals: Rs 7,000</li><li>• Medium and large companies/ others: Rs 10,000</li></ul>



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## Introduction

The workshop will give an overview of molecular biology applications in agro biotech, animal biotech, diagnostics, biopharma and medical biotech. It will also include hands on sessions on basic techniques used in molecular biology such as Genomic DNA isolation, plasmid DNA isolation, gel electrophoresis, transformation and PCR.

## Course Outline

The workshop will include theory as well as hands-on lab exercises and hands-on experiments

### Theory sessions

- Overview of Molecular Biology – Genetic Engineering Techniques a Historical and Global Perspective
- Applications of Molecular Biology GE in Agrobiotech : India's success story
- Future trends in Molecular Biology – Genetic Engineering
- PCR – Principles and optimization strategies
- Relevance of Genetic Engineering in Human Health

### Experimental sessions

- Genomic DNA isolation from prokaryotic resources
- Plasmid DNA isolation
- Restriction Digestion of DNA
- Transformation of *E.coli*
- PCR

## Course includes

- Hand out and workshop material
- Access to restricted website with online compilation of resources of archival value
- Certificate of Participation issued by Venture Center
- Tea and lunch at Venture Center cafeteria



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Tentative Schedule			
Time	Session title	Lead	Venue
<b>5 Aug 2014</b>			
0830 – 0900	Registration		Foyer area
0900 – 0930	Introduction to the course and faculty	Dr. Manisha Premnath	Training Room
0930 – 1030	Theory - Overview of Molecular Biology: Genetic Engineering Techniques a Historical and Global Perspective	Dr. Deepti Deobagkar	Training Room
1030 – 1100	Tea break		Foyer area
1100 – 1230	Practical – Genomic DNA isolation – Part I	Dr. Mugdha Lele	Lab-block
1230 – 1330	Lunch break		Cafeteria
1330 – 1530	Practical – Genomic DNA isolation – Part II	Dr. Mugdha Lele	Lab-block
1530 – 1545	Tea break		Cafeteria
1545 – 1730	Practical – Gel electrophoresis: Principles and gel casting (for loading Genomic DNA, Restriction digestion product, PCR product, Plasmid characterization)	Dr. Mugdha Lele	Lab-block
<b>6 Aug 2014</b>			
0900 – 1000	Practical – PCR	Dr. Mugdha Lele	Lab-block
1000 – 1100	Practical – Restriction Digestion set up	Dr. Mugdha Lele	Lab-block
1100 – 1130	Tea break		Cafeteria
1130 – 1230	Theory – Applications of Molecular Biology – GE in Agrobiotech : India’s success story	Dr Vidya Gupta	Training Room
1230 – 1330	Practical – Gel electrophoresis: gel loading of PCR products	Dr. Mugdha Lele	Lab-block
1330 – 1400	Lunch break		Cafeteria
1400 – 1745	Practical – Transformation: Inoculation and monitoring growth of microbes. (Tea will be served in between the session)	Dr. Mugdha Lele	Lab-block
1745 – 1800	Practical – Gel electrophoresis: gel visualization of PCR product analysis and interpretation of results	Dr. Mugdha Lele	Lab-block





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7 Aug 2014			
Time	Session title	Lead	Venue
0900 – 1130	Practical – Plasmid Isolation	Dr. Mugdha Lele	Lab-block
1130 – 1145	Tea break		Foyer area
1145 – 1245	Theory – Future trends in Molecular Biology - Genetic Engineering	Dr. Anjan Banerjee	Training Room
1245 – 1330	Practical – Plasmid isolation experiment, Restriction Digestion experiment and Genomic DNA experiment: Gel electrophoresis: gel loading	Dr. Mugdha Lele	Lab-block
1330 – 1400	Lunch break		Foyer area
1400 – 1430	Theory – PCR: Principles and optimization strategies	Dr. Mugdha Lele	Training Room
1430 – 1500	Practical – Plasmid isolation experiment, Restriction Digestion experiment and Genomic DNA experiment: Gel electrophoresis: gel visualization and plasmid characterization, analysis and interpretation of results	Dr. Mugdha Lele	Lab-block
1500 – 1530	Tea break		Foyer area
1530 – 1630	Theory – Relevance of Genetic Engineering in Human Health	Dr. Dileep Deobagkar	Training Room
1630 - 1730	Concluding session – Feedback, Certificate distribution	Dr. V. Premnath	Training Room



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Faculty	
	<p><b>Dr. Dileep Deobagkar</b></p> <p>Ex. Vice-Chancellor, Goa University, Founder member, Indian Institute of Science , Education and Research; Ex. Director, Institute of Bioinformatics &amp; Biotechnology, Ex. Professor &amp; Head, Department of Zoology, University of Pune</p>
	<p><b>Dr. Deepti Deobagkar</b></p> <p>Professor &amp; Director, Bioinformatics Centre; Professor, Center of Advanced Studies, Department of Zoology, University of Pune</p>
	<p><b>Dr. Vidya Gupta</b></p> <p>Senior Scientist &amp; Head, Division of Biochemical Sciences, CSIR - National Chemical Laboratory, Pune</p>
	<p><b>Dr. Anjan Banerjee</b></p> <p>Assistant Professor – Biology, Indian Institute of Science Education and Research, Pune</p>
	<p><b>Dr. Mugdha Potnis-Lele</b></p> <p>Scientific Advisor, Venture Center, Pune</p>

#### About the organizers

Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology's National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center's focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit <http://www.venturecenter.co.in>