

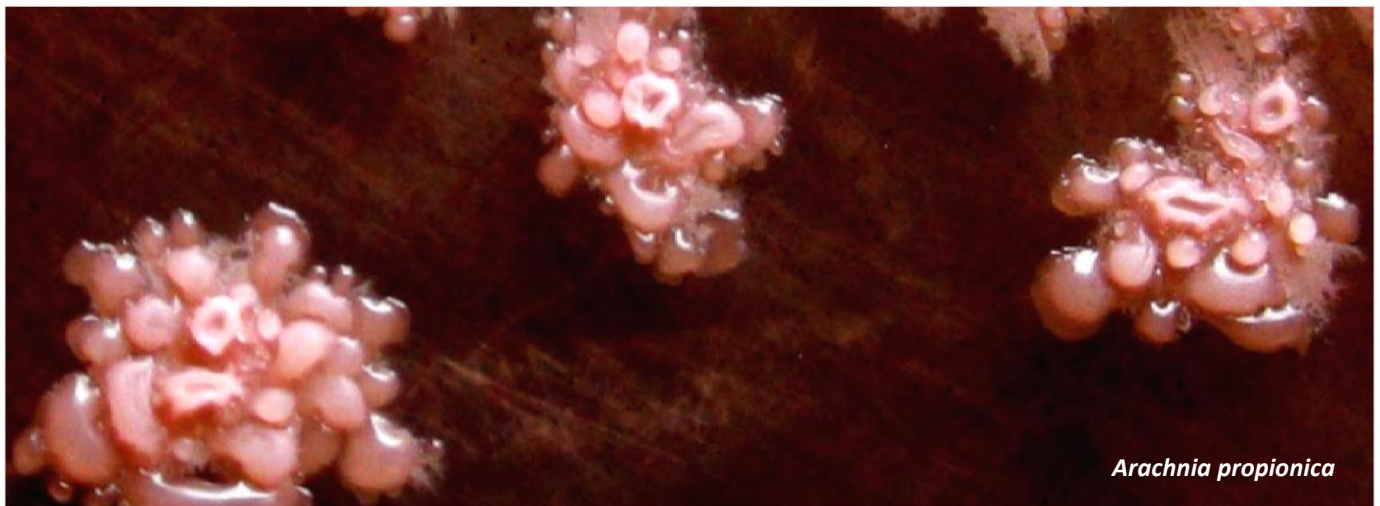
JASMN EDUCATION AND RESEARCH FOUNDATION

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Arachnia propionica

JASMN FOUNDATION is a teaching and research facility created for teaching and training biology candidates to acquire skills and advanced biological, molecular and microbiological techniques to enable candidates to become employable. After 5 years to get a post graduate degree spending few lakhs of rupees, students get only a paper degree- not technical expertise required at places of employment. While all others produce unemployable candidates, we intend to make them employable.

ACTIVITIES

Technical Training

Technical training is offered to students and people who are interested in rapid career growth. Higher education in many places offers only theoretical knowledge. Practical training is woefully very little. In JASMN foundation training is offered to build new skills and competence so that the candidates acquire confidence in taking responsibilities in technical and managerial positions. They will have the exposure to work methodologies and can put their hands on new opportunities in diverse field in pharma companies and hospitals etc.

SUMMER TRAINING:

HANDS ON TRAINING:

MICROBIOLOGY, BIOTECHNOLOGY (TESTS WHICH WILL BE USEFUL IN FUTURE PROJECT WORK)

MODULE 1

GENERAL ASPECTS

1. STERILIZATION OF MATERIALS
2. PREPARATION OF MEDIA
3. BACTERIAL GROWTH- ISOLATION AND PLATING TECHNIQUES

4. DETERMINATION OF TOTAL VIABLE COUNT
5. GROWTH KINETICS STUDIES
6. BACTERIAL IDENTIFICATION – BIOCHEMICAL TESTS
7. DEMONSTRATION OF VARIOUS ENZYME ACTIVITIES
8. ANTIBIOTIC SUSCEPTIBILITY TESTING
9. MIC DETERMINATION
10. ESBL, METALLO PROTEASES DETECTION
11. PLASMID ISOLATION
12. PLASMID DEMONSTRATION – GEL ELECTROPHORESIS

Exercises: 1-12 [4 weeks]

Exercises: 1-5 [10 days]

Exercises: 1-5, 8, 9 [15 days]

Exercises: 8-12 [15 days]

MODULE 1a

GENERAL ASPECTS

1. STERILIZATION OF MATERIALS (with principle and procedures)
 - Moist heat
 - Dry heat
 - Filtration
 - Quality control
2. PREPARATION OF MEDIA (With principles and procedure)
 - Basal medium
 - Enriched medium
 - Selective medium
 - Enrichment medium
3. BACTERIAL GROWTH- ISOLATION AND PLATING TECHNIQUES
 - Various methods of streaking and isolation
4. DETERMINATION OF TOTAL VIABLE COUNT
 - Pour plate technique

- Miles and Mishra's method

5. GROWTH KINETICS STUDIES
6. BACTERIAL IDENTIFICATION – BIOCHEMICAL TESTS
7. DEMONSTRATION OF VARIOUS ENZYME ACTIVITIES
8. ANTIBIOTIC SUSCESPTIBILITY TESTING
9. MIC DETERMINATION
10. ESBL, METALO PROTEASES DETECTION
11. PLASMID ISOLATION
12. PLASMID DEMONSTRATION – GEL ELECTROPHORESIS

Exercises: 1-12, [4 weeks]

Exercises: 1-5 [10 days]

Exercises: 1-5, 8, 9 [15 days]

Exercises: 8-12 [15 days]

MODULE 2

CLINICAL BACTERIOLOGY

1. Sterilization techniques
2. Preparation of media
3. Staining techniques
4. Antibiotic susceptibility testing – disc
5. Mic determination
6. ESBL DETECTION
7. PROCESSING OF URINE AND REPORTING
8. PROCESSING OF SPUTUM AND REPORTING
9. PROCESSING OF VAGINAL SWAB AND REPORTING
10. PROCESSING OF THROAT SWAB AND REPORTING
11. PROCESSING OF WOUND SWAB /PUS AND REPORTING
12. BLOOD CULTURE TECHNIQUES
13. PROCESSING OF BODY FLUIDS AND REPORTING
14. PROCESSING OF STOOL SAMPLE AND REPORTING

Exercises: 1-14 [8 weeks]

Exercises: 1-8 [4 weeks]

Exercises: 5-8 [15 days]

Exercises: 7-14 [4 to 6 weeks]

MODULE 3

MOLECULAR BIOLOGY TECHNIQUES

1. STERILIZATION OF MATERIALS
2. PREPARATION OF MEDIA AND ISOLATION TECHNIQUES
3. VIABLE COUNT
4. GROWTH KINETICS
5. ISOLATION OF PLASMIDS
6. GELELECTROPHORESIS TECHNIQUES
7. DNA ISOLATION AND DEMONSTRATION
8. PCR TECHNIQUES

Exercises: 1-8 [4 weeks]

Exercises: 5-8 [15 days]

Exercises: 7-8 [10 days]

Exercises: 1-4 [10 days]

MODULE 4

IMMUNOLOGICAL TECHNIQUES - BASICS

1. Agglutination tests
 - a. Haemagglutination test – blood grouping
 - b. Bacterial slide agglutination test
2. Widal test
 - a. Principle, test and interpretation
3. Brucella agglutination test
 - a. Principle, test and interpretation

4. VDRL/RPR test
 - a. Principle, test and interpretation
5. TPHA test
 - a. Principle, test and interpretation
6. ELISA test
 - a. Principle, test and interpretation

Exercises: 1-6 [15 days]

MODULE 5

IMMUNOLOGICAL TECHNIQUES-ADVANCED

PREPARATION OF POLYCLONAL ANTIBODY

1. Preparation of an antigen
2. Preparation of adjuvants
3. PREPARATION OF POLYCLONAL ANTIBODY
4. Testing of antibody production

Exercises: 1-4 [6 weeks]

MODULE 6

Mini Project for Biotechnology

PLACKETT-BURMAN DESIGN AND TESTING

[10-15 DAYS] **7500/-**

Screening of phenol degraders from the environment [15 days]

MODULE 7

FOOD MICROBIOLOGY

1. TOTAL PLATE COUNT (BACTERIA)
2. COUNTS OF YEAST AND MOLD
3. ENUMERATION, ISOLATION AND IDENTIFICATION OF E.coli
4. ENUMERATION, ISOLATION AND IDENTIFICATION OF SALMONELLA
5. ENUMERATION, ISOLATION AND IDENTIFICATION OF SHIGELLA
6. ENUMERATION, ISOLATION AND IDENTIFICATION OF VIBRIO
7. ENUMERATION, ISOLATION AND IDENTIFICATION OF S.AUREUS
8. ENUMERATION, ISOLATION AND IDENTIFICATION OF B.CEREUS

Techniques 1-6 [20 days]

MODULE 8

BASIC INDUSTRIAL MICROBIOLOGY

1. Sterilization of materials for industrial use and problems associated with it – theory and practical
2. Preparation of media for starter culture
3. Determination of bioload
4. Determination of D-values
5. Determination of types of organism in various industrial media
6. Growth kinetic studies

Techniques 1-6 [15 days]

OTHER SERVICES AVAILABE

1. Students can work for their project in Microbiology, Biotechnology, Molecular biology, dental sciences
2. Industrial consultancy services undertaken
3. Contract project works undertaken
4. Microbiological evaluation of industrial products/validation undertaken
5. Microbiological evaluation of Food products analysis undertaken