



Criterion-1: Curricular Aspects

Key Indicator – 1.3: Curriculum Enrichment

Metric: 1.3.3

Programme: M.Sc. Microbiology

Syllabus	https://www.du.ac.in/uploads/RevisedSyllabi1/Annexure-35.%20M.Sc.%20Microbiology%20CBCS%202018%20%2004-Sep-2018%20pdf.pdf
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Annexure-I

List of Students



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Date: 10-01-2024

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Subject:- Data of field projects / research projects / internships

Sir/Madam,

This is with reference to your mail dated 10 January, 2024 the data of students who undertook research projects / internships in the M.Sc. microbiology during 2018-23 along with scanned copy of students. List of 81 students attached.


10/01/2024

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**Name of students who did research projects from
2018 to 2023**

S.No.	Name	Year
1	Annu Nagar	2018
2	Aparajita Sen	2018
3	Mohini Talwar	2018
4	Mona Kriti	2018
5	Prerna Garg	2018
6	Priti Tomer	2018
7	Rashmi Singh	2018
8	Shivani Chauhan	2018
9	Sonakshi Gupta	2018
10	Nupur Tyagi	2019
11	Anjali Yadav	2019
12	Pratibha Rauniyar	2019
13	Elisnora	2019
14	Srishti	2019
15	Arpit Tyagi	2019
16	Bhawna Sharma	2019
17	Shrabani Snigdha	2019
18	Tanishqa Pawar	2019
19	Mansi Yadav	2019
20	Ritu Mann	2019
21	Shubhi Khare	2019
22	Aman Jaiswal	2020
23	Ankita Singh	2020
24	Ayushi Singh	2020
25	Deeksha Singh	2020
26	Devika A	2020
27	Meenakshi	2020
28	Pragya Kumar	2020
29	Pratibha Gautam	2020
30	Sakshi Gupta	2020
31	Satyam Yadav	2020
32	Sreyashi Nath	2020
33	Suyagya Jayaswal	2020
34	Tanushree Singh	2020
35	Vaidehee	2020
36	SIMRAN PREET KAUR	2021
37	SHREYA	2021
38	RAKHI NAGAR	2021
39	PREETI YADAV	2021
40	PRITI KUMARI	2021


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41	ANKITA SAINI	2021
42	ANCHAL DHIMAN	2021
43	SANAAYA SINGH KAUSHIK	2021
44	ISHANI SHARMA	2021
45	NEHA GUPTA	2021
46	SONAL	2021
47	VIRGINIA POHRMEN	2021
48	TANUJA	2021
49	ABHISHEK KEM	2021
50	SHUBHAM SHARMA	2021
51	SHAHIN BANO	2022
52	ARTHANA NAIR A S	2022
53	AAFREEN	2022
54	KHUSHI KHERA	2022
55	SIMRAN YADAV	2022
56	SONAL FLYWER	2022
57	ANJALI SAGAR	2022
58	CHETANA MEENA	2022
59	ILMA MASOOD	2022
60	JAYA BAHADURI	2022
61	ANKIT	2022
62	SAYANTIKA CHOWDHURY	2022
63	PRANAV CHAWLA	2022
64	SWASTIK SASTRI	2022
65	SHREYA THAPLIYAL	2022
66	MANSI JOSHI	2022
67	ANANYA DOGRA	2023
68	AYUSHI BHARDWAJ	2023
69	AKSHITA SONI	2023
70	KEERTHANA PRADEEP	2023
71	ANJALI GUPTA	2023
72	MANIKET CHAUHAN	2023
73	PRIYA BOORA	2023
74	ISHA SRIVASTAVA	2023
75	YASHU BHATIA	2023
76	JUHI JAIN	2023
77	SATYABRATA KAR	2023
78	PRACHIE SHARMA	2023
79	ANUSHKA SADHUKHAN	2023
80	SIDDHARTH KUMAR GUPTA	2023
81	TANU SHREE	2023


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1.3.3 Percentage of Programs that have components of field projects / research projects / internships during the last five years

Name of the Programmes offered by the HEI	Programme Code	Whether the program has components of Field project / research project/ internship (Yes/ NO)	If yes, name of the component (Field project / research project/ internship)	Course code of the component	Number of students undertaking the field projects / research projects/ internships	Link to the relevant document
M.Sc. MICROBIOLOGY	760	Yes	Project work	225301401	81	https://microbio.du.ac.in/userfiles/downloads/M.Sc.%20Microbiology%20CBCS%202019.pdf

[Signature]
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Annexure-II

Sample Project Reports

CROSS- LINKED ENZYME AGGREGATE OF GAMMA-GLUTAMYL TRANSPEPTIDASE: PROCESS AND APPLICATIONS

**DISSERTATION SUBMITTED FOR THE PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE**

IN

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2021



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Abbreviations and symbols

GGT- Gamma Glutamyl Transpeptidase

%: Percentage

°C: degree Centigrade

µl : Microlitre

ml: Millilitre

rpm: revolution per minute

g/L: gram per litre

O.D. : Optical density

mM: Millimolar

KDa: KiloDaltons

M: Molar

U/ml: Units per ml

Mins: minutes

K_m : Michaelis- Menten Constant

V_{max} : Maximum velocity

EtOH: Ethyl alcohol

IPTG- Isopropyl β -D-1-thiogalactopyranoside

K_d - Dissociation constant

$t_{1/2}$ – Half life

BSA- Bovine serum albumin

MQ- Milli-Q

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ENZYMATIC SYNTHESIS OF CYCLODEXTRINS FROM *Bacillus sp.*

**DISSERTATION SUBMITTED FOR PARTIAL
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MASTER OF SCIENCE

IN

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ABBREVIATIONS AND SYMBOLS

- % : Percentage
- α : Alpha
- β : Beta
- γ : Gamma
- μ : micro
- MQ : Milli Q water
- Avg : Average
- CD : Cyclodextrin
- mM : milliMolar
- kDa : Kilo dalton
- CaCl_2 : Calcium Chloride
- w/v : Weight per unit volume
- CGTase : Cyclodextrin glycosyltransferase
- $^{\circ}\text{C}$: Degree centigrade
- pH : Power of hydrogen concentration
- RSM : Response surface methodology
- CCD : Central composite design
- EC : Enzyme commission

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**EXPRESSION STUDIES OF HUMAN GRANULOCYTE
COLONY STIMULATING FACTOR (G-CSF) IN**

Escherichia coli

**Dissertation submitted for the partial fulfilment of the requirement for the
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13. Ligation of double digested human GCSF gene and vector bearing compatible termini:
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15. *BamHI/XhoI* double digestion of cloned pET22b-SUMP(KP)-G-CSF construct
16. PCR amplification of pET22b-SUMP(KP)-G-CSF construct
17. Sequencing of the recombinant clone
18. Optimization of shake flask expression studies
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Some sequences like pelB and malE are being used for protein stability and The post-translational translocation route is used by malE and pelB signal peptides. The maltose-binding protein that contains its natural malE signal peptide with 26 residues is far less stable and prone to aggregation. So Signal peptides can be used to replace the native signal peptide of essential heterologous proteins in *E. coli* for successful synthesis. (Singh et al., 2013)

PelB is a signal sequence that is used to guide the recombinant protein to the bacterial periplasm. It consists of 22 N-terminal amino acid sequence which makes up the leader signal sequence and linked to the recombinant protein for its periplasmic expression. PelB corresponds to *Erwinia carotovora* CE pectate lyase B. During genetic engineering, this pelB signal sequence can be fused to the recombinant protein at the DNA level and directs the protein in the periplasm of gram-negative bacteria like *Escherichia coli*. In tailored bacteriophages which are used for phage display pelB has been utilized to drive coat protein-antigen fusions to cell surface. Half-life of the recombinant protein can also be boosted 10-fold if it is released in the periplasmic region. These signal sequences can easily be removed by using leader peptidases.

Oxidative environment and presence of folding modulators such as PDIs and PPI in periplasmic space, facilitate disulfide bonds formation; therefore, periplasmic expression can increase proper protein folding.

**“IDENTIFICATION OF POTENTIAL VACCINE
CANDIDATES AGAINST *E.coli* MASTITIS”**

**DISSERTATION SUBMITTED FOR PARTIAL FULFILLMENT
OF THE
REQUIREMENT FOR THE DEGREE OF
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Expression, Purification and Characterization of Maltogenic amylase from *Bacillus subtilis*

**Dissertation submitted for the partial fulfilment of the requirement for the
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CONTENTS

Certificate

Acknowledgement

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Expression studies and recovery of Human Tumor Necrosis- α (TNF- α) using Heterologous System

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**CLONING AND EXPRESSION OF A SET DOMAIN PROTEIN
IN *LEISHMANIA DONOVANI***

**DISSERTATION SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE OF**

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ABBREVIATIONS USED

- °C: degree Celcius
- µL: Microliter
- AMQ: Autoclaved MilliQ Water
- bp: Base pairs
- DNA: Deoxyribonucleic acid
- egfp: Enhanced Green fluorescent protein
- *E. coli.*: *Escherichia coli*
- HKMTs: Histone lysine Methyltransferases
- hrs: hours
- KDMs: Lysine demethylases
- KMTs: Lysine methyltransferases
- L/l: Liter
- mins: minutes
- pUC: Plasmid University of California
- PCR: Polymerase Chain Reaction
- rpm: revolutions per minute
- SET: Su(var)3-9, E(z) and Trx
- taq pol: *Thermus aquaticus* DNA polymerase enzyme

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**A Review and Computational Analysis of *Staphylococcus aureus* CWA
Proteins for Bovine Mastitis Immunotherapy**

Dissertation submitted for the partial fulfilment for the degree of

MASTER OF SCIENCE

IN

MICROBIOLOGY

2019-21



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Certificate

This is to certify that **Ms. Shrabani Snigdha** has worked on the thesis entitled
**“A Review & Computational Analysis of *Staphylococcus aureus* CWA Proteins
for Bovine Mastitis Immunotherapy”**.

This dissertation is being submitted to the **Department of Microbiology,
University of Delhi** for the award of the degree **Master of Science in Microbiology**,
is an original record of the work done by the candidate herself and has not been
submitted in part or full to any other university for the award of any other degree or
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Abbreviations Used

- % : Percentage
- FnBP A : Fibronectin binding protein A
- ClfA : Clumping Factor A
- IsdA : Iron surface determinant protein A
- NCBI : National Centre Of Bioinformatics Information
- MRSA : Methicillin resistant *Staphylococcus aureus*
- PBP : Penicillin binding protein

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**CLONING OF cdc45 in *Leishmania donovani* IN FUSION
WITH HIS-TAG**

Dissertation submitted for the partial fulfilment for the degree of

MASTER OF SCIENCE

IN

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***IN SILICO* PREDICTION OF CONSERVED
IMMUNOGENIC POTENTIAL VACCINE TARGETS
AGAINST *Streptococcus agalactiae* INDUCED
BOVINE MASTITIS**

**DISSERTATION SUBMITTED FOR THE PARTIAL FULFILMENT
FOR THE DEGREE OF**

MASTER OF SCIENCE

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