

Registered



कुमाऊँ विश्वविद्यालय, नैनीताल-263001(उत्तराखण्ड)
KUMAUN UNIVERSITY, NAINITAL-263001(UTTARAKHAND)

Sponsored Research and Industrial Consultancy Cell(SRICC)

Office: 05942-235213, Fax: 05942 -235213, E-mail: sriccku@gmail.com

No. SRICC/MOU/2019/5349

Dated: 07-February, 2019

To,

Director
CSIR - National Botanical Research Institute
(Council of Scientific & Industrial Research)
Rana Pratap Marg, P.B. No. 436
Lucknow - 226 001 (India).

Subject: Regarding MOU between Kumaun University and CSIR - National Botanical Research Institute Lucknow.

Sir,

Please enclosed find herewith the original MOU between the Kumaun University and CSIR - National Botanical Research Institute Lucknow for researchers of both institutions.

Thanking you.

Enclosure - MOU Photostat

Yours faithfully

Rajeev Upadhyay
6 Feb 2019
Prof. (Rajeev Upadhyay)
Director
SRICC

Copy to - PS to Vice Chancellor for kind information to Hon'ble Vice Chancellor.

Rajeev Upadhyay
6 Feb 2019
Director
SRICC



उत्तर प्रदेश UTTAR PRADESH

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03 JUL 2018

MEMORANDUM OF UNDERSTANDING
BETWEEN
KUMAUN UNIVERSITY, NAINITAL
AND

CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

1. THE MoU

12 July 2018 *Rajiv*

1.1 THIS MoU made on this 09th day of July 2018 between the COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH, a Society registered under the Societies Registration Act (XXI of 1860) and having its office at Anusandhan Bhavan, 2, Rafi Marg, NEW DELHI-110001 (hereinafter referred to as CSIR) through CSIR-National Botanical Research Institute, Rana Pratap Marg, Lucknow – 226 001 (hereinafter called “CSIR-NBRI” which expression shall where the context so admits include its successors and permitted assigns) of the ONE PART.

And

1.2 KUMAUN UNIVERSITY, NAINITAL, was established in 1973 under the UP State Act, having its office at Kumaun University, Nainital Uttarakhand – 263001 (hereinafter called the KUMAUN UNIVERSITY (KUN) which expression shall where the context so admits include its successors and permitted assigns) of the OTHER PART.

[Signature]

PREAMBLE

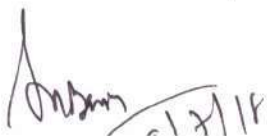
The Department of Science and Technology Govt. of India and the University Grants Commission have realized the need for a close linkage between the National Laboratories and the Universities in terms of research and academic activities. In compliance to this idea, Kumaun University, Nainital (KUN) and CSIR-NBRI, Lucknow have decided to sign a Memorandum of Understanding (MoU) as per the following terms and conditions:

2. GENERAL

- 2.1 The scientist of CSIR-NBRI, Lucknow may participate in the teaching programme in the different departments such as Biotechnology, Botany, Chemistry, Pharmaceutical Sciences, and Forestry and Environmental Science (SSJ, Almora and DSB-Bhimtal-Nainital Campuses), of the Kumaun University on request and subject to mutual convenience.
- 2.2 The scientist of CSIR-NBRI, Lucknow and the faculty members of KUN will work towards joint research projects thereby mutually using research facilities developed/to be developed at CSIR-NBRI and KUN.
- 2.3 KUN will recognize and accept the students of CSIR-NBRI, Lucknow for supervising research leading to Ph.D. degree of KUN.
- 2.4 The Faculty and students of the above mentioned Department of KUN shall be allowed the use of library of CSIR-NBRI subject to prior permission of the Director CSIR-NBRI, Lucknow. Scientists and Ph.D. students of CSIR-NBRI shall likewise be given the above mentioned facilities at KUN.
- 2.5 The Scientists/Faculty members and students of above mentioned department of CSIR-NBRI /KUN shall be issued necessary permission, on request, to access to laboratories and other facilities of KUN/ CSIR-NBRI as per their respective rules.
- 2.6 Whenever required, CSIR-NBRI shall arrange hostel/guest house accommodation for KUN faculty members and students visiting institute for research/collaboration work and vice-versa as per their respective rules.

3. ACADEMIC AND DEVELOPMENTAL PROGRAMMES:

- 3.1 For the mutual benefit of the two institutions i.e. CSIR-NBRI and KUN, there will be **exchange of CSIR-NBRI scientists and faculty members of departments (as mentioned at point no. 2.1) of KUN.**



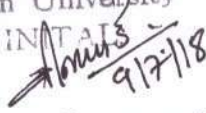
- 3.2 CSIR-NBRI and KUN scientists/faculty members will help each other in **preparing common research programmes.**
- 3.3 CSIR-NBRI will provide laboratory and library facilities to the faculty/technical staff /students of KUN and likewise KUN will also provide the same facilities to the scientists of CSIR-NBRI/Ph.D. students/technical staff etc as per institutional rules.
- 3.4. For Ph.D. students working under joint supervision with respective Faculty of KUN and scientists of CSIR-NBRI, the Research Ordinance related to Ph.D. degree of KUN will be applicable (KU Research Ordinance-2016 could be downloaded from www.kunainital.ac.in Link SRICC). PhD students working in MoU signed R&D institutions of Govt. of India shall have to attend Pre-PhD course work classes of Paper-I (Research Methodology) in KU. After completion of course work classes on Research Methodology (Paper-I) in KU, such PhD students may carry-on Paper-II (Recent Advances in the Subject) and Paper-III (Dissertation) in their respective research institutes.
- 3.5. In case of very specialized research subjects, the Pre-PhD course work will be held in respective research institutions, only, after consultation with Convener (RDC)/HOD and final approval of Hon'ble Vice-Chancellor.
- 3.6. The faculty of R&D institutions of Govt. of India with specialization in respective areas may be connected to the Departments of Kumaun University as adjunct Faculty after following due procedure. Such faculty may be requested to deliver lectures in Pre-PhD course work, organized by Kumaun University, Nainital.
- 3.7. All Ph.D. students will have to clear the Pre-PhD course work examination conducted by the Kumaun University, Nainital.
- 3.8. CSIR-NBRI and KUN will work closely to **generate appropriately trained manpower in the related areas** through organization of formal academic curricula, symposia, short term training courses, etc.
- 3.9. CSIR-NBRI will provide training facilities (minimum for one to two week) for selected number of students of KUN as per availability of space and CSIR-NBRI norms. The scientists of CSIR-NBRI will help in preparation of project dissertations wherever needed. The students will mention these scientists as senior guide in the Dissertation reports. Data generated during project work can be published only after technical clearance from competent authority with equal/amicable sharing amongst CSIR-NBRI and KUN as per institutional norms.

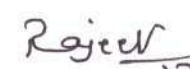

09/11/18

4. Honorarium, TA/DA (if applicable) will be provided to the faculty members/Scientists/technical staff of KUN and CSIR-NBRI as per rule by requesting organizations.
- 4.1. The MoU related to PhD degree will be done under the JOINT SUPERVISION of the faculty of the respective department of Kumaun University, Nainital and the scientist of the R&D institutions of Govt. of India.
- 4.2. It is further agreed that the Vice-Chancellor, KUN and Director CSIR-NBRI, Lucknow through periodic meeting will monitor the progress of this MoU. Any change/ modification/ termination as introduced/ suggested by the Review Committee (Comprising of Vice-Chancellor, KUN and Director CSIR-NBRI, Lucknow and other members as may be mutually decided by them) shall be acceptable to both the institutions.

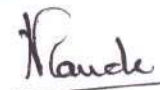
12 July 2018 Rajeev
Signed this day of July 09, 2018.

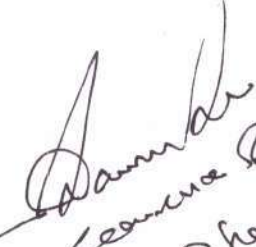

Director
CSIR-NBRI,
Lucknow
प्रोफेसर एस. के. बारिक
Professor S. K. Barik
निदेशक / Director
केन्द्रीय-राष्ट्रीय वनस्पति अनुसंधान संस्थान
CSIR-National Botanical Research Institute
लखनऊ Lucknow


Registrar
Kumaun University,
Nainital
Kumaon University
NAINITAL

9/7/18
Convener
Biotechnology.


Director-SRICC
Kumaun University
Nainital
12/07/2018
DIRECTOR
Sponsored Research And Industrial
Consultancy Cell
Kumaun University, NAINITAL

The MoU will come into force from the date of approval of the draft both by the Executive Council of Kumaun University, Nainital and technical committee of the CSIR-NBRI, Lucknow.

Forwarded

12.7.2018


Convener RMOD
Chemistry

Registered



कुमाऊँ विश्वविद्यालय, नैनीताल-263001(उत्तराखण्ड)
KUMAUN UNIVERSITY, NAINITAL-263001(UTTARAKHAND)
Sponsored Research and Industrial Consultancy Cell(SRICC) ☎Office:
05942-235213, Fax: 05942 -235213, E-mail: sriccku@gmail.com

No. SRICC/MOU/2018/ 4688

Dated: 27 November, 2018

To,

Director
CSIR - National Botanical Research Institute
(Council of Scientific & Industrial Research)
Rana Pratap Marg, P.B. No. 436
Lucknow - 226 001 (India).

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Prof. (Rajeev Upadhyay)
Director
SRICC

Copy to - PS to Vice Chancellor for kind information to Hon'ble Vice Chancellor.

Rajeev 27/11/2018
Director
SRICC

Nareesh Kumar
CSIR-NBRI Lucknow
Ph.D Scholar.
Ph. 0755936549.

**FUNCTIONAL VALIDATION OF CAMTA GENE
AGAINST DROUGHT STRESS IN CHICKPEA**
(Cicer arietinum L.)

**THESIS
SUBMITTED**

FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

BIOTECHNOLOGY

TO

KUMAUN UNIVERSITY, NAINITAL, INDIA

By

MEENAKSHI

Under the joint guidance of

Guide

Dr. INDRANEEL SANYAL

Senior Principal Scientist
Molecular Biology and Biotechnology Division
CSIR-National Botanical Research
Institute, Lucknow

Co-Guide

Dr. VEENA PANDE

Head and Co-ordinator
Department of Biotechnology
Bhimtal Campus, Kumaun
University, Nainital

2021



CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE

P.O. Box 436, Rana Pratap Marg, Lucknow – 226 001 (U.P.) INDIA

Dr. Indraneel Sanyal
Senior Principal Scientist
Mol. Biol. & Biotech. Div.

Phone : 0522-2297955 and 2297954
Fax : 0522- 2205839 and 2205836
E-mail : i.sanyal@nbri.res.in

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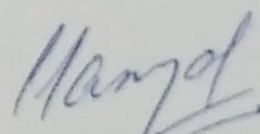
Date: 17th December, 2021

CERTIFICATE

I have immense pleasure in forwarding the thesis entitled “**Functional validation of CAMTA gene against drought stress in chickpea (*Cicer arietinum* L.)**” submitted by **Ms. Meenakshi** for the degree of **Doctor of Philosophy in Biotechnology**.

Ms. Meenakshi has completed the research work in **Plant Transgenic Laboratory of the Molecular Biology and Biotechnology Division at CSIR-National Botanical Research Institute, Lucknow**.

The thesis being submitted by her embodies the results of her investigations conducted during the period she worked as a research scholar under my guidance and supervision. The data incorporated in the thesis are based on her independent investigations.


(Indraneel Sanyal)

Dr. Veena Pande

M.Sc., Ph.D.

Coordinator & Head

Department of Biotechnology

Kumaun University, Bhimtal-263136



Coordinator

BIF & Microbiology Programme.

Kumaun University, Bhimtal-263136

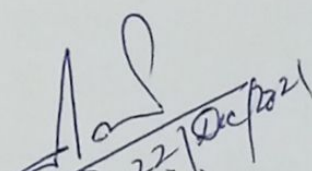
Ph. : 05942-248185 (O), 239218 (R)

Email : veena_kumaun@yahoo.co.in

CERTIFICATE

I have pleasure in forwarding the thesis of **Ms. Meenakshi**, entitled "**Functional validation of *CAMTA* gene against drought stress in chickpea (*Cicer arietinum* L.)**" for the degree of Doctor of Philosophy in Biotechnology.

The work presented embodies the original work of the candidate **Ms. Meenakshi** has put in more than two hundred days of research work under my supervision.


(Veena Pande)

**"Evaluating the effect of *Paenibacillus lentimorbus* and
biochar on the growth of *Cicer arietinum* L."**

A THESIS

*Submitted in partial fulfillment of the Requirement for the Award of the
degree of*

MASTER OF SCIENCE

In

MICROBIOLOGY

Submitted by:

NISHA BISHT

DEPARTMENT OF BIOTECHNOLOGY, SIR J.C. BOSE CAMPUS,
BHIMTAL

KUMAUN UNIVERSITY, NAINITAL, UTTARAKHAND

BATCH: 2021-2023

Under the joint supervision of

Dr. Veena Pande

Professor

Department of Biotechnology

Bhimtal Campus

Kumaun University, Nainital

Dr. Puneet Singh Chauhan

Senior Principal Scientist

CSIR-NBRI

Lucknow, Uttar Pradesh

Work carried out at:

CSIR- National Botanical Research Institute (NBRI), Rana Pratap Marg,
P.B. No. 436, Lucknow-226001

Identification and Characterization of early wound responsive WRKY gene from chickpea

**THESIS
SUBMITTED**

FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

BIOTECHNOLOGY

TO

KUMAUN UNIVERSITY, NAINITAL, INDIA

By

SHRUTI SRIVASTAVA

Under the joint supervision of

Supervisor

Dr. ANIRUDDHA P. SANE

Chief Scientist
Plant Gene Expression Lab
CSIR-National Botanical Research
Institute, Lucknow

Co-Supervisor

Dr. VEENA PANDE

Head and Co-ordinator
Department of Biotechnology
Bhimtal Campus, Kumaun
University, Nainital

2023



CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE
(COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH)
RANA PRATAP MARG, LUCKNOW 226001
INDIA

Dr. Aniruddha P. Sane
Chief Scientist
Plant Gene Expression Lab.
Tel: 91-522- 2297959
E.mail: ap.sane@nbri.res.in

5 Jan 2023

CERTIFICATE

I have pleasure in forwarding the PhD thesis entitled **“Identification and Characterization of early wound responsive WRKY gene from chickpea”** by **Ms. Shruti Srivastava** for the degree of doctor of Philosophy in Biotechnology to Kumaun University.

Ms. Shruti Srivastava has completed the research work at the Plant Gene Expression Lab, CSIR-National Botanical Research Institute under my supervision. The data incorporated in the thesis being submitted by her embodies the results of her original investigations conducted during the period she worked as a research scholar under my guidance and supervision in our lab. I further certify that this work has not been submitted to any other university or institution, in part or full, for the award of any degree or diploma.

(Aniruddha P. Sane)

Dr. Veena Pande

M.Sc., Ph.D.

Coordinator & Head

Department of Biotechnology

Kumaun University, Bhimtal-263136



Coordinator

BIF & Microbiology Programme

Kumaun University, Bhimtal-263136

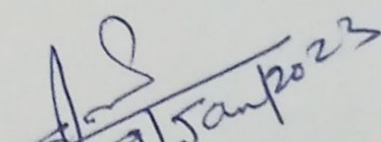
Ph. : 05942-248185 (O), 239218 (R)

Email : veena_kumaun@yahoo.co.in

CERTIFICATE

I have pleasure in forwarding the thesis of Ms. Shruti Srivastava, entitled "Identification and Characterization of early wound responsive WRKY gene from chickpea" for the degree of Doctor of Philosophy in Biotechnology.

The work presented embodies the original work of the candidate. Ms. Shruti Srivastava has put in more than two hundred days of research work under my supervision.


(Veena Pande)