

MEMORANDUM OF UNDERSTANDING (MOU)
BETWEEN

AMITY INSTITUTE OF BIOTECHNOLOGY,
Amity University Mumbai
Mumbai - Pune Expressway, Bhatan,
Post – Somathne, Panvel, Mumbai,
410206. Maharashtra INDIA

AND

PROKARYOTES LAB PVT. LTD.

B-101 BEML Layout, Prism Sovereign, Kundalahalli, Bangalore, Karnataka 560066, India

This Memorandum of Understanding (MOU) is executed on the 15th July of 2019, between the following parties:

Amity Institute of Biotechnology established in 2014 under Amity University Mumbai (A Private University, established under Government of Maharashtra Act No. XIII of 2014 and is recognized as per Section 2 of the UGC Act), situated at Mumbai - Pune Expressway, Bhatan, Post – Somathne, Panvel, Mumbai, 410206. Maharashtra INDIA, through its Director duly authorised to enter into and sign the MOU on behalf of Amity Institute of Biotechnology, Amity University (hereinafter called as 'AIB, AUM') of the ONE PART

AND

PROKARYOTES LAB PVT. LTD, Bangalore, Karnataka, An Environmental Management Company, established on 24 June 2019 Under the company act, 2013 (18 of 2013) and that the company is limited by shares. Registration done under Ministry of Corporate Affairs (cooperate identify number. U90009KA2019PTC125515) having its executive office at B-101 BEML Layout, Prism Sovereign, Kundalahalli, Bangalore, Karnataka 560066, India. (Here in after referred to 'Prokaryotes Lab' as the context permits) is the ANOTHER PART.

Amity Institute of Biotechnology, one of the Institute UNDER the Amity University Mumbai and Prokaryotes Lab Pvt. Ltd., Karnataka, India wishing to establish cooperative/Collaborative relations, agree as follows.

AREAS OF COLLABORATION

Subject to the availability of funds and the approval of the Vice Chancellor, Amity University, Mumbai and the Prokaryotes Lab Pvt. Ltd., Karnataka collaboration will be undertaken through activities or programs such as:

- Conduct joint research activities on the project entitled 'Development of Hydrocarbon degrading Kit' and within the fields of interest with projects that are mutually agreed upon and subject to availability of funds;
- Participate in conference, symposia and seminars of mutual interest
- Collaborate in joint research in the thrust areas of the respective Company-Institute, and file patents and publish research findings;
- Cooperate to solicit joint proposals for funding from various funding agencies and exchange scientific information and documentation, both written and electronic.

The scope of this agreement may be modified in the future based on mutual interest and agreement.

Principles of Collaboration

AIB, AUM and Prokaryotes Lab jointly agree to develop their research links under the principles of mutual understanding, common interest and mutually complementary activities.

1. To **work** in the areas benefiting the community at large.
2. To identify common thrust areas of research keeping in focus the **Sustainable Development Goals (SDGs)** and **priorities** in the field of **science and technology** especially with biotechnological interventions.
3. To promote individual contacts among Research scholars, Students and Faculty/Staff of both the institutions.
4. To provide **opportunities** for the faculty/staff members, research scholars and students to use the **expertise** and **facilities** available in both the organizations including.
5. To work jointly for the common research interests, including the preparation and submission of **research proposals / protocols** and their implementation by making use of the material / facilities at either Prokaryotes Lab or AIB, AUM.
6. To consider AIB, AUM as a **Research and Development partner** for carrying out research studies in mutual interest of both.
7. To **mutually acknowledge** and share the experience, expertise and capabilities of AIB, AUM, Mumbai and Prokaryotes Lab, Bangalore with due importance in **collaboration, resource sharing and partnership**.
8. To **publish reports of sponsored projects/papers**, file patents and disseminate results on mutually agreeable terms.

Patents and Publication

Patents and publications, if any, in respect of the activity under this MoU shall be in the names of involved personnel from both the parties and the sequence of Authors mutually agreed upon based on contribution. In all patents and publications (papers, reports etc.,) it will be duly acknowledged that the work has been carried out by 'AIB, AUM' and 'Prokaryotes lab Pvt Ltd' under this MoU between the parties. All ethical guidelines of research publication existent at both the organizations will be followed, strictly.

RENEWAL, TERMINATION AND AMENDMENT

This agreement shall remain in force for a period of one (1) years from the date of the last signature, with the understanding that it may be terminated by either party giving two months written notice to the partner institution.

This MoU may be terminated by either party by the provision of written notice of termination by not less than six months prior to the desired termination date. However, both parties agree that all continuing obligations to students, staff, funding bodies or other entities are met in full subsequent to the notice of termination.

All notices and other communications required to be served on AIB, AUM under the terms and this MoU, shall be considered to be duly served, if the same is delivered at or posted by registered mail to the Director, AIB, AUM at its registered office in Amity Institute of Biotechnology, Amity University Mumbai, Mumbai - Pune Expressway, Bhatan, Post – Somathne, Panvel, Mumbai, 410206. Maharashtra INDIA

Any dispute arising out of this Memorandum of Understanding or in its enforcement the concerned parties to this MoU will resolve the same amicably. However, in case if the dispute remains unresolved it shall be referred to an arbitrator to be appointed by mutual consent of both the parties. The venue of arbitration shall be at such place as may be fixed by the arbitrators and the arbitration proceeding shall be as provided under the Arbitration and Conciliation Act, 1996. The decision of the arbitrator shall be final and binding upon both the parties.

All legal disputes shall be subjected to the Jurisdiction of the courts in Mumbai, State of Maharashtra.

No modification to this MoU shall be binding unless made in writing and signed by both parties.

This agreement may be amended with the consent of the company and the institution through a written addendum executed by authorized individuals of both. Such agenda, once approved by both of them, will become part of this memorandum of agreement.

This agreement shall be binding upon signing by authorized individuals of the 'AIB, AUM', and 'Prokaryotes Lab' and shall be effective as of the date last written below.

9. To encourage any other activities that both the institutions agreed to be on mutual benefit, Specific terms, conditions and procedural aspects of collaboration including financial obligations of either party shall be finalized on mutual terms and conditions of each specific project and sharing of outcomes (papers and intellectual property rights) under this MoU separately.

The terms and budget for each program or activity implemented under this agreement shall be mutually agreed upon in writing prior to its initiation. Such programs and activities shall be approved by authorized individuals from each party.

Designated official (s) at each institution shall oversee and facilitate implementation of this agreement in cooperation with other appropriate administrators at the respective institutions. All notices shall be in writing and shall be directed to these officials as follows:

Director, Amity Institute of Biotechnology, Amity University Mumbai, Mumbai - Pune Expressway, Bhatan, Post – Somathne, Parvel, Mumbai, 410206. Maharashtra INDIA

Telephone: +91(022) 71987045(O)

Email: nsdesai@mum.amity.edu; neetindesai@gmail.com

Director, B-101 BEML Layout, Prism Sovereign, Kundalahalli, Bangalore, Karnataka 560066, India,

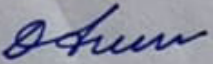
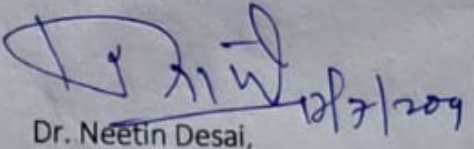
Telephone: 8861117404

Email: darun26.ibm@gmail.com

The present agreement shall enter into force when signed by both parties and will remain effective for one years in the first instance. Either party may bring the agreement to an end by two month written notice to the other. Any modification of the present text during the tenure of this agreement shall be agreed between the parties and submitted for approval to the relevant authorities in both the institutions.

For the purposes of this Memorandum of Association and all addenda hereto encompassing specific programs between 'AIB, AUM' and 'Prokaryotes Lab', it is understood and agreed that neither party shall be liable for any negligent or wrongful acts, either of commission or omission, chargeable to the other, unless such liability is imposed by law. This memorandum of agreement and all addenda shall not be construed as seeking to either enlarge or diminish any obligation or duty owed by one party to the other or to a third party.

IN WITNESS WHEREOF, the parties hereto have offered their signatures:

For and behalf of AIB, AUM		For and behalf of Prokaryotes Lab	
 Mr. Arun Dhakshinamoorthy, Director, PROKARYOTES LAB PVT. LTD. Address: B-101 BEML Layout, Prism Sovereign, Kundalahalli, Bangalore, Karnataka 560066, India		 Dr. Neetin Desai, Director, AMITY INSTITUTE OF BIOTECHNOLOGY, Amity University Mumbai, Mumbai - Pune Expressway, Bhatan, Post – Somathne, Panvel, Mumbai, 410206. Maharashtra INDIA	
Witness: (Name & address)	Sign with date	Witness: (Name & address)	Sign with date
1.		1.	
2.		2.	
		3.	
		4.	

**MEMORANDUM OF UNDERSTANDING
ON ACADEMIC AND RESEARCH COLLABORATION**

Between

University of Cincinnati

And

Amity University, Maharashtra

This Memorandum of Agreement is entered into by and between **University of Cincinnati (UC)**, 2900 Reading Rd., Suite 460, Cincinnati, OH 45206-0829 and **Amity University, Maharashtra (AUM)**, Mumbai - Pune Expressway, Bhatan Post-Somathne, Panvel, Mumbai, Maharashtra 410206.

Recitals:

The **University of Cincinnati** is a state institution of higher education organized under Section 3361 of the Ohio Revised Code. The University of Cincinnati serves the people of Ohio, the nation, and the world as a premier, public, urban research university dedicated to undergraduate, graduate, and professional education, experience-based learning, and research. It is committed to excellence, diversity and an inclusive environment for students, faculty, staff, and all activities. Through scholarship, service, partnerships, and leadership, UC creates opportunity, develops educated and engaged citizens, enhances the economy and enriches the University, city, state and global community. The University of Cincinnati Cancer Center delivers the most advanced cancer care available for adults in Greater Cincinnati through expert teams, pioneering research and a spirit of collaboration.

AUM has been established under Maharashtra Govt. Act of 2014 of Government of Maharashtra and is recognized as per Section 2(f) of the UGC Act with the rights to confer degrees. AUM has expertise in various areas of science, engineering, architecture, design, humanities, law and management. **Amity Institute of Biotechnology (AIB)** is a constituent unit of Amity University Mumbai established in the year 2014, with the aim to promote research and development in the broader areas of biosciences and biotechnology. AIB has facilities that support innovative research in areas of plant biotechnology, environmental biotechnology, industrial biotechnology, microbiology & food Biotechnology, Structural & Computational Biology and Stem Cells and Regenerative Medicine.



Whereas, UC and AUM (each individually a 'Party' and collectively as 'Parties' hereinafter) are interested to take up a joint research programme / project pertaining to "Tumor cell Vaccine" as per the scope more specifically contained and detailed in Schedule – I annexed hereto.

The two institutions will encourage direct contact and co-operation between their faculty and scientists, Departments and Research Centres, within fields that are mutually acceptable and visits by and exchange of doctoral students, faculty members and scientists for research and courses.

The Parties hereto agree to the following terms and conditions for the above collaboration:

1. **Scope, Purpose of Activity:** The scope of the activity under this collaboration will be as contained and detailed in Schedule – I annexed hereto.
2. **Intellectual Property (IP):** Based on contributions from inventors of respective Party, knowledge and/or intellectual property (IP) which can be covered by patents and other IPRs will be filed by UC or AUM, on a case to case basis, based on contributions of each of the Parties and under mutually agreed to terms. Provided however, that either Party may make use of, all information and data generated during this collaborative activity hereunder for its own internal research and academic purposes. If there are any commercial benefits arising from the work, it should be shared by both the parties
3. **Publications:** Any research findings arising from this collaborative activity may be published / presented at national or international conferences as jointly authored. Acknowledgement of the contribution of the authors towards such publications will be made, as appropriate. However, the terms and conditions for such publications shall be mutually agreed upon.
4. **Confidentiality:** UC and AUM agree to hold in confidence all information/data designated as confidential, which is obtained/disclosed from either Party or created during the performance of this agreement and will not disclose the same to any third party without written consent of the other Party except as allowed under Article 3
5. **Non-Exclusive:** This relationship is on a non-exclusive basis and either AUM or UC are free to enter into other relationships or alliances with other partners.
6. **Term and Termination:** The term of this agreement shall be for a period of five (5) years from the date of execution hereof unless terminated earlier by a written notice of thirty (30) days, by a Party seeking such termination, to the other Party hereto.
7. **Changes:** Any changes / alterations to this agreement / understanding shall be made by the Parties hereto by mutual agreement, in writing, by the authorized representatives of both the Parties.
8. **Compliances:** Each Party agrees to perform its activities in compliance with all applicable statutes and regulations that are in force at that time.



9. **Dispute Resolution:** Any and all disagreements / differences / disputes arising hereunder shall be resolved amicably by the designated senior executives / officers of the good offices of both Parties.

AGREED



REGISTRAR
AMITY UNIVERSITY MUMBAI
MUMBAI - PUNE EXPRESSWAY
PANVEL - MUMBAI - 410 206

AUM

Name: Dr. Hira Vyas



Date: 13th April, 2021

University of Cincinnati

Name: GEOFFREY PINSKI

Title: AUP, TECH TRANSFER

Signature:



Date: April 15, 2021

Witness:

Name:

Witness:

Name:

Schedule – I:

Scope of collaboration

1. **Title of the Project:** An Engineered Tumor Cell Vaccine that Utilizes Distinct Osteopontin Domains to Maximize Immune Stimulation
2. **Team composition of Partnering Institutions:**

Dr. Vinoth Prasanna Gunasekaran, Assistant Professor, Amity Institute of Biotechnology, Amity University, Mumbai.

Dr. Georg F. Weber, Professor, College of Pharmacy, University of Cincinnati, USA.

3. **Summary of the proposed research project:**

Background: Cancer vaccines that induce the immune system to eliminate cancer cell burden have emerged as a practical approach. It has become increasingly clear, however, that the outcome of cancer immunotherapy is decisively determined by the type of immune response induced. Our recent work has demonstrated the cytokine osteopontin to be a crucial regulator of type I and type II immunity. Osteopontin $-/-$ mice fail to mount protective type I immunity to bacterial or viral challenge, which is associated with diminished production of the stimulatory cytokine IL-12 and excessive production of the antagonistic cytokine IL-10. Induction of IL-12 and inhibition of IL-10 reflect differential engagement of macrophage receptors: Phosphorylation-dependent ligation of integrin $\alpha\beta3$ by the N-terminal portion of osteopontin leads to IL-12 expression, while phosphorylation independent interaction of a C-terminal domain with CD44 mediates IL-10 suppression.

Objective/Hypothesis: Since osteopontin regulates type I immunity (through IL-12) and type II immunity (through IL-10) at a more proximal level than most other cytokines, there is reason to hypothesize that it may be a more potent adjuvant for anti-cancer vaccines than most of the currently used cytokines. The identification of two functional osteopontin domains, which independently regulate IL-10 and IL-12 secretion from macrophages, provides a unique opportunity to use these fragments to modulate the immune response to cancer vaccines. We hypothesize that the N-terminal domain, which induces IL-12 but does not suppress IL-10, will be more successful as a cancer vaccine adjuvant than the C-terminal domain, which selectively suppresses IL-10, or than the wild-type osteopontin.

Specific Aims:

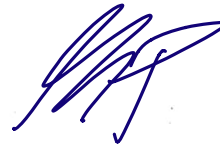
1. Generation and testing of a tumor vaccine that secretes engineered osteopontin variants.
2. Definition of the cytokine profile induced by osteopontin transfectants in vivo.
3. Evaluation of the induction of cytotoxic T-lymphocytes by osteopontin transfectants in vivo.
4. Evaluation of the regulation of B-cell activation through osteopontin transfectants in vivo.

Study Design: The generation of cellular anti-cancer vaccines by transfection of cytokine genes into tumor cells followed by irradiation has been studied extensively in mice and has undergone some testing in humans. We will use the 4T1 murine breast cancer cells to generate



irradiated cellular vaccines after transfection with osteopontin or genetically engineered variants of the cytokine. In particular, we will transfect a N-terminal deletion mutant that will engage integrin receptors and induce IL-12 but will not ligate CD44, so that IL-10 will remain high. The broad cytokine profile, comprising a combined Th1 and Th2 patterns, is expected to enhance the induced anti-tumor immune response more strongly than Th1 or Th2 cytokines alone. This hypothesis will be tested in our experiments.

Relevance: The proposed structure-activity analyses will allow a rational vaccine design that not only presents relevant antigens but also directs the immune system toward the most efficient mode of response. From these studies we will also learn more about the molecular regulation of cell-mediated versus antibody-mediated immunity which has implications for vaccines in general, autoimmune diseases, and organ transplantation.



डी एन ए फ़िंगरप्रिंटिंग एवं निदान केन्द्र

(जैव प्रौद्योगिकी विभाग, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार का स्वायत्त संस्थान)

Centre for DNA Fingerprinting and Diagnostics

(An autonomous institute of the Dept. of Biotechnology, Ministry of Science & Technology, Govt. of India)

डॉ. के. थंगराज / *Dr. K. Thangaraj*

निदेशक / Director



सी डी एफ डी 25 CDFD

No. CDFD/MoU/AMITYUM/2021

27th December 2021

27.12.21
Dr. A. W. Santhosh Kumar,

Pro Vice Chancellor

Amity University-Mumbai

Pune Express way

Bhaten, Panvel,

Mumbai-410206

Dear Sir,

Sub: Memorandum of Understanding (MoU) between Centre for DNA Fingerprinting and Diagnostics (CDFD) and AMITY University-Mumbai

Please find enclosed two sets of original MoU to be executed between CDFD, Hyderabad and AMITY University. We request you to kindly execute both the copies of the agreement by putting initials of the authorized signatory and rubber stamp on the bottom of each page and full signature along with witness and rubber stamp on the last page.

Kindly retain one fully executed MoU for the records of AMITY University-Mumbai and send one copy of the fully executed MoU to the undersigned for our records.

With kind regards

Yours Sincerely

[K. THANGARAJ]



Memorandum of Understanding Between

AMITY UNIVERSITY, MUMBAI
Maharashtra – 410206

and

CENTRE FOR DNA FINGERPRINTING AND DIAGNOSTICS
HYDERABAD
Telangana - 500039

AMITY UNIVERSITY, MUMBAI, MAHARASHTRA (hereinafter referred to as “**AUM**”),
represented by its Pro Vice Chancellor Dr. A.W. Santhosh Kumar, **FIRST PARTY**

and

CENTRE FOR DNA FINGERPRINTING AND DIAGNOSTICS, HYDERABAD,
TELANGANA (hereinafter referred to as “**CDFD, Hyderabad**”) represented by its Director
Dr. K. Thangaraj **SECOND PARTY**


This Memorandum of Understanding (hereinafter referred to as “**MoU**”) is executed on this
day of 2021 (“22.12.2021”) between **AUM and CDFD, Hyderabad.**

This **MoU** sets down the mutually agreed broad framework for joint research and academic
activities in various fields of interest. It also incorporates the modalities for collaboration. For
the purpose of this MoU, AUM and CDFD, Hyderabad shall be collectively referred to as
“**parties**” and the term “**party**” refers to either of them as the context permits.

1. **PREAMBLE**

AUM is a reputed university under the Act of Maharashtra and further to its academic
deliveries, it is also involved in conducting basic and applied research having impact on
human health and cutting-edge translational research in diversified fields. The University in
houses 4 centers of excellences in the area of Astrobiology, Translational Research, Drug




डॉ. के. थंगराज
Dr. K. Thangaraj
निदेशक, सी डी एफ डी, हैदराबाद
Director, CDFD, Hyderabad.

Delivery, Genomics and Proteomics, Nanotechnology.

CDFD, Hyderabad is a premier autonomous research Institute funded by the Department of Biotechnology, Ministry of Science and Technology, Government of India with a mandate to provide services and to undertake research in the areas of DNA Fingerprinting, Diagnostics and other areas of modern biology. CDFD, Hyderabad's Diagnostic division offers comprehensive diagnosis of genetic diseases (cytogenetic, biochemical and molecular). The laboratory also providing prenatal diagnosis for detection of chromosomal abnormalities, single gene disorders and inborn errors of metabolism. In addition to providing genetic diagnostic services, the laboratory carries out research work on molecular pathophysiology and mapping of genetic disorders.

The institute possesses state of the art infrastructure including the National Genomics Core facility which has been established by the Department of Biotechnology, Govt of India to provide high end genomic solutions and as a full-service provider for the research needs of academic institutes and industry.

The activities of both the parties are in several ways complementary to each other. It is therefore felt that initiating joint collaborative research programs and training would be of considerable mutual interest & benefit.

1. PURPOSE

Both the parties desire to implement various collaborative activities, in areas of mutual interest, which would address multidisciplinary scientific, technological and educational issues of due relevance at the national level. For this purpose, both parties are desirous of entering into a **MoU**. Consistent with the goals and purpose of the collaboration, **CDFD, Hyderabad** and **AUM** propose to initiate joint multidisciplinary research, inter-alia the areas given below:


ARTICLE - 1: Joint Research Programs and collaborations

The major fields of work at AUM will be

(A). Astrobiology - with special reference to research on life - Plant and cellular activity in space. Study on extreme microbes in areas in India, representing similar conditions of Mars, to explore the variations in microbial genomics.

(B). Drug Discovery: Purification, characterization, and elucidation of the structure and novelty of the active compounds, to study the metabolites profile of natural extract libraries for dereplication and to synthesize their derivatives. Screening extracts and purified




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Dr. K. Thangaraj
निदेशक, सी डी एफ डी, हैदराबाद
Director, CDFD, Hyderabad.

compounds from selected resources for antimicrobial activities, however not limited to such individual screenings. Developing in-house microbial consortium through exploring natural resources such as microbes, bacteria, plants, and marine organisms from rare ecosystems for New Chemical Entities (NCES).

(C). Genomics and Proteomics: Exploration of microbial genomes and proteomic analysis to determine the taxonomic diversity by molecular analysis of their genomes.

Where:

- a) Faculty from both parties can collaborate on projects based on mutual interests as part of their respective intramural research programs. The collaborating faculty can avail the facilities of both institutions by paying appropriate charges from the budget of intramural research programs.
- b) Faculty from both parties can explore possibilities of joint twining research programs in interdisciplinary areas of specialization of high relevance to both parties.
- c) Both parties can be involved in joint submission of projects to different funding agencies for extramural funding.
- d) CDFD, Hyderabad can provide access to various high-end sophisticated equipment on payment basis for research related activities and give remote access of its servers to the designated faculty of AUM on mutually agreeable terms and conditions

ARTICLE - 2: Joint Academic Programs and Workshops

- a) CDFD, Hyderabad and AUM can jointly offer Post-graduate (M. Sc) and Doctor of Philosophy (PhD) courses in the area of medical genetics and other areas based on mutual interest. The degrees will be awarded by Amity University – Mumbai, Maharashtra.
- b) Exchange of Faculty members: Planning and handling of courses, organization of seminars, workshops and conferences including the exchange of mutual experiences in teaching, research and industrial practice can be envisaged. During exchange visits, the faculty should take prior approvals from the respective competent authorities.
- c) Special lectures by CDFD, Hyderabad faculty in the area of medical genetics, genetic counselling, DNA based forensics, and other areas of modern biology, can be arranged for UG and PG students of AUM.
- d) Capacity building of the students & staff of either party in the areas of common interest. Short-term continuing education programs, seminars, conferences, certificate courses, and



workshops on topics of mutual interest can be organized jointly involving faculty members from both the institutions.

e) Use of major equipment and services at a subsidized payment as designated by the Director, CDFD, Hyderabad as and when required and mutually agreed by both the parties.

ARTICLE - 3: Joint Supervision and Exchange of Students

a) For PhD Students' Project: A PhD student from AUM can be co-supervised by faculty member(s) from CDFD, Hyderabad. Faculty members from AUM can act as doctoral committee members of CDFD, Hyderabad PhD students.

b) Both parties will facilitate the visit of their respective faculty and students to engage in scientific research and training. After due permission, students from either party can work in the other institute and use the facilities for collaborative projects with the approval of the concerned departments/competent authority of the other institute. Either party will provide accommodation of the visiting students at minimal charges possible.

c) Exchange in Research: Exchange of information and co-operation in research and developments including exchange of publication and reports.

ARTICLE - 4: Intellectual property rights

a) Information on research results and scientific materials (data, reports, articles, books, technical documents & related literature) on the collaborative programs between both the parties will be exchanged freely keeping in mind the mutually agreed provision of Intellectual Property Rights.


b) Intellectual property (IP) solely conceived and/or developed by AUM during the course of this Agreement shall be owned by AUM. Intellectual property (IP) solely conceived and/or developed by CDFD, Hyderabad during the course of this Agreement shall be owned by CDFD, Hyderabad.

c) Intellectual property (IP) conceived and/or developed jointly during the course of this Agreement shall be jointly owned by AUM and CDFD, Hyderabad.

d) Each party may use such IP for research and scholarly purposes or for commercial purposes with mutual consent.

e) Both Parties agree to collaborate towards the protection, if appropriate, and application of such intellectual property (IP) for commercial or other purposes on mutually acceptable terms to be negotiated in good faith between the parties.




डॉ. के. थंगराज
Dr. K. Thangaraj
निदेशक, सी डी एफ डी, हैदराबाद
Director, CDFD, Hyderabad

- f) Both parties reserve the rights to commercialize and assign any intellectual property (IP) to any third party with prior consent of each other.

ARTICLE - 5: Financial Clause

Notwithstanding anything contained in the provisions of accepting Article – 4 of the **MoU**, either party or both parties together shall have the right to seek additional funds for and/or to cooperate with any agency/institute for any of the projects covered under the **MoU** through mutual consent & after prior intimation. *There will be no financial obligations on both the parties under this agreement.*

ARTICLE - 6: Legal Relationship

This MoU shall be construed as a statement of purpose to promote a genuine and mutually beneficial collaboration between the parties.

ARTICLE - 7: Amendment of MoU

Any article of the **MoU** may be modified or changed by mutual agreement of the parties hereto in writing. The modifications/changes shall be effective from the date on which they are modified /extended in writing unless otherwise agreed to.

ARTICLE - 8: Dispute Settlement

All disagreements/differences of opinion/disputes regarding the interpretation of the provisions of this **MoU** shall be resolved by mutual consultation by the signatories to this MoU. However, in case, the dispute persists, the matter shall be referred to and amicably resolved by arbitration to be conducted by the sole arbitrator to be nominated jointly by Directors of both the institutes. The award of the arbitrator shall be final and binding on the parties. The arbitration proceedings will be conducted in accordance with the Indian Arbitration & Conciliation Act, 1996.

ARTICLE - 9: Monitoring & Coordination

Both parties shall establish a Co-ordination Committee which will ensure the smooth functioning of the research and academic programs. The Dean- Research, AUM will be Chairperson, and Head CDFD, Hyderabad, Diagnostics Division will be Convenor of the Coordination Committee, which will



comprise representatives of both the parties.

ARTICLE - 10: Validity and Termination of MoU

This MoU shall come into force from the date of its signatures and shall remain valid for a period of 5 years. This MoU may be modified, renewed or extended with mutual written consent of both parties. Either party may terminate this MoU by giving three (3) months' notice in writing to the other party.

In witness whereof the undersigned, duly authorized thereto, have signed this MoU on this day,

Amity University, Mumbai



Name: Prof. (Dr.) A.W. Santhosh Kumar
Pro Vice Chancellor
Amity University, Mumbai
Maharashtra- 410206

Date: 22.12.2021

Place: Hyderabad.

Witnessed by:

Full Name: Dr. H. S. yew

Designation: Registrar

Signed: 

Date: 22/12/2021

REGISTRAR
AMITY UNIVERSITY MUMBAI
MUMBAI - PUNE EXPRESSWAY
PANVEL - MUMBAI - 410 206

Centre for DNA Fingerprinting and
Diagnostics, Hyderabad



Name: Dr K. Thangaraj
Director

डॉ. के. थंगराज
Dr. K. Thangaraj
निदेशक, सी डी एफ डी, हैदराबाद
Director, CDFD, Hyderabad.

Centre for DNA Fingerprinting and Diagnostics,
Hyderabad
Telangana -500039

Date: HYDERABAD, 22/12/2021

Place: _____

Witnessed by: Dr. ASHWIN B. DALAL
MD (Paed) DM (Medical Genetics)

Full Name: Head Diagnostic Division
Designation: Centre for DNA Fingerprinting and Diagnostics
(DBT, Ministry of Science & Technology, Govt. of India)
Hyderabad, Telangana, INDIA.

Signed: 

Date: 22-12-2021



AMITY UNIVERSITY

Established vide Maharashtra Act No. 13 of 2014, of Government of Maharashtra, and recognised under Section 2 (f) of UGC ACT 1956.

MEMORANDUM OF UNDERSTANDING

BETWEEN

**AMITY UNIVERSITY, MAHARASHTRA
MAHARASHTRA – 410206.**

and

**GOVERNMENT DENTAL COLLEGE & HOSPITAL,
ST. GEORGE'S HOSPITAL COMPOUND, FORT
MUMBAI, MAHARASHTRA-400001.**

AMITY UNIVERSITY, MAHARASHTRA (hereinafter referred to as "AUM"), represented by its Registrar Dr. H. Vyas, FIRST PARTY.

and

GOVERNMENT DENTAL COLLEGE & HOSPITAL, MUMBAI, MAHARASHTRA (hereinafter referred to as "GDCH, Mumbai"), represented by its Dean Dr. Dimple Padawe, SECOND PARTY.

This Memorandum of Understanding (hereinafter referred to as "MoU") is executed on this day of 2023 (Dated: 20.4.2023) between AUM and GDCH, Mumbai.

This MoU sets out an understanding for co-operation to enhance academic and research opportunities for faculties and students to collect the human oral samples and clinical survey of patients with associated of various disease paradigms.

AUM, Maharashtra and GDCH, Mumbai are both legal entities fully empowered to conduct their own affairs.

The Parties have agreed to enter into this MoU in order to record their wish to explore the potential for co-operation in the field and this MoU records only their current intentions and does not give rise to legal relations.

The Parties wish to co-operate to explore the potential to work together in the following areas:

- i. Developments in learning and teaching quality.
- ii. Developing and sharing of publications and materials of common interest.
- iii. Research collaboration.
- iv. Externship posting of Postgraduate, Doctorate Research Scholars and Teaching faculty of AUM for undergoing one week exchange programme at GDCH, Mumbai, Maharashtra.
- v. Externship posting for Postgraduate students, Doctorate and Teaching faculty GDCH, Mumbai, Maharashtra for undergoing one week exchange programme. at AUM.

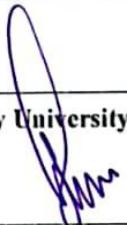




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The duration of this MoU shall come in to force from the date of its signature and shall remain valid for a period of two years. It may be terminated before it expires by either party giving not less than one-month notice in writing to the other.

The purpose of this MoU is to facilitate the interaction between Postgraduate students, Doctorate Research Scholars and Teaching faculty members of both parties to enhance the outcome of training and academic and research.

This MoU will be purely for academic purpose including sharing of knowledge through seminars/ workshops/ symposia and publications but excluding any financial transaction.

In witness whereof the undersigned, duly authorized thereto, have signed this MOU on this day,

<p>Amity University, Maharashtra</p>   <p>Name: Dr. Hira S. Vyas, Registrar, Amity University Mumbai-Pune Expressway, Bhatan, Post-Somathne, Panvel, Mumbai, Maharashtra- 410206</p> <p>Date: <u>20.4.2023</u></p> <p>Place: <u>MUMBAI</u></p> <p>Witnessed by:</p>  <p>Dr. P Suprasanna Dean Research (i/C), Amity University HOI, Amity Institute of Biotechnology (AIB) Mumbai-Pune Expressway, Bhatan, Post-Somathne, Panvel, Mumbai, Maharashtra- 410206</p> <p>Signed: </p> <p>Date: <u>20.4.2023</u></p>	<p>Government Dental College & Hospital.</p>  <p>Name: Dr. Dimple Pardave, Dean, GDCH, Mumbai Government Dental College & Hospital St. George Hospital Complex, Fort Mumbai, Maharashtra- 400001</p> <p>Date: <u>20.4.2023</u></p> <p>Place: <u>MUMBAI</u></p> <p>Witnessed by:</p>  <p>Dr. Dhalkari C Digambarrao Prof & HOD Dept. of Periodontology Government Dental College & Hospital St. George Hospital Complex, Fort Mumbai, Maharashtra- 400001</p>  <p>Dr. C.D. Dhalkari Professor & Head M.D.S. Dept. of Periodontology Govt. Dental College & Hospital Mumbai-400001</p> <p>Signed: </p> <p>Date: <u>20.4.2023</u></p>
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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (hereinafter referred to as “MoU”) is executed on this 12th April 2023 **by and between**

AMITY UNIVERSITY, MUMBAI, MAHARASHTRA (hereinafter referred to as “AUM”), represented by its Registrar Dr. H. Vyas, of the **First Part;**

And

LIFECCELL INTERNATIONAL PRIVATE LIMITED, a private limited company incorporated under the Companies Act, 1956 with corporate identification number U85196TN2004PTC053577 and having its registered office at No.16, Vijayaraghava Road, I Lane, T Nagar, Chennai, Tamil Nadu 600017, India (hereinafter referred to as “LifeCell”, which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors, Affiliates, nominees and permitted assigns), of the **Second Part;**

For the purpose of this MoU, **AUM** and **LifeCell** shall be collectively referred to as “**parties**” and the term “**party**” refers to either of them as the context so permits.

This **MoU** sets down the mutually agreed broad framework for joint research and academic activities in various fields of interests. It also incorporates the modalities for collaboration.

PREAMBLE

AUM is a reputed university under the Act of Maharashtra state Government and further to its academic deliveries, it is also involved in conducting basic and applied research having impact on human health and cutting edge translational research in diversified fields. The University in houses 5 centers of excellences in the area of Astrobiology, Computational Biology, Translational Research, Drug Delivery and Development, Genomics, Proteomics and Nanotechnology.

LifeCell International Private Limited was established in the year 2004 as Company in the business of (a) collecting, processing, testing, preserving, and/or distribution of human cells and tissues; (b) skincare ingredients and products developed basis regenerative science; and (c) establishing and operating diagnostic laboratories and service centers in India.

The activities of both the parties are in several ways complementary to each other. It is therefore felt that initiating joint collaborative research programs and training would be of considerable mutual interest & benefit.

PURPOSE

Both the parties desire to implement various collaborative activities, in areas of mutual interest, which would address multidisciplinary scientific and technological issues of national relevance. For this purpose, both parties are desirous of entering into a **MoU**. Consistent with the goals and purpose of the collaboration, **LifeCell** and **AUM** propose to initiate joint multidisciplinary research, inter-alia the areas given below:

ARTICLE - 1: Joint Research Programs and collaborations

The major fields of work at AUM will be Genomics & Proteomics, Cancer & Stem cell biology, Plant and Animal Biotechnology, Microbial & Environmental Biotechnology.

Where

- a) Faculty from both parties can collaborate on projects based on mutual interests as part of their respective intramural research programs. The collaborating faculty can avail the facilities of both institutions by paying appropriate charges from the budget of intramural research programs.
- b) Faculty from both parties can explore possibilities of joint twining research programs in interdisciplinary areas of specialization of high relevance to both parties.
- c) Both parties can be involved in joint submission of projects to different funding agencies for extramural funding.
- d) **LifeCell** can provide access to various high end sophisticated equipment for research related activities and give remote access of its servers to the designated faculty of **AUM** on mutually agreeable terms and conditions.

ARTICLE - 2: Joint Academic Programs and Workshops

- a) Exchange of Faculty members: Planning and handling of courses, organization of seminars, workshops and conferences including the exchange of mutual experiences in research and industrial practice can be envisaged. During exchange visits, the faculty should take prior approvals from the respective competent authorities.
- b) Capacity building of the students & staff of either party in the areas of common interest. Short-term continuing education programs, seminars, conferences, certificate courses, and workshops on topics of mutual interest can be organized jointly involving faculty members from both the institutions.
- c) Use of major equipment and services at a subsidized payment as designated by the Director, **LifeCell** as and when required and mutually agreed by both the parties.

ARTICLE - 3: Joint Supervision and Exchange of Students

- a) For PhD Students' Project: A PhD student from **AUM** can be co-supervised by faculty member(s) from **LifeCell**. Faculty members from **AUM** can act as doctoral committee members of **LifeCell**.

- b) Both parties will facilitate the visit of their respective faculty and students to engage in scientific research and training. After due permission, students from either party can work in the other institute and use the facilities for collaborative projects with the approval of the concerned departments/competent authority of the other institute. Either party will provide accommodation of the visiting students at minimal charges possible.
- c) Exchange in Research: Exchange of information and co-operation in research and developments including exchange of publication and reports.

ARTICLE - 4: Intellectual property rights

- a) Information on research results and scientific materials (data, reports, articles, books, technical documents & related literature) on the collaborative programs between both the parties will be exchanged freely keeping in mind the mutually agreed provision of Intellectual Property Rights.
- b) Intellectual property (IP) solely conceived and/or developed by **AUM** during the course of this Agreement shall be owned by **AUM**. Intellectual property (IP) solely conceived and/or developed by **LifeCell** during the course of this Agreement shall be owned by **LifeCell**.
- c) Intellectual property (IP) conceived and/or developed jointly during the course of this Agreement shall be jointly owned by **AUM** and **LifeCell**.
- d) Each party may use such IP for research and scholarly purposes or for commercial purposes with mutual consent.
- e) Both Parties agree to collaborate towards the protection, if appropriate, and application of such intellectual property (IP) for commercial or other purposes on mutually acceptable terms to be negotiated in good faith between the parties.
- f) Both parties reserve the rights to commercialize, use and assign the intellectual property (IP) to any third party that are conceived and/or developed as per sub-clause c) under Article 4 with prior consent of each other.

ARTICLE - 5: Financial Clause

Notwithstanding anything contained in the provisions of accepting Article - 5 of the **MoU**, either party or both parties together shall have the right to seek additional funds for and/or to cooperate with any agency/institute for any of the projects covered under this **MoU** through mutual consent & after prior intimation. *There will be no financial obligations on both the parties under this agreement.*

ARTICLE - 6: Legal Relationship

This **MoU** shall be construed as a statement of purpose to promote a genuine and mutually beneficial collaboration between the parties.

ARTICLE - 7: Amendment of MoU

Any article of the **MoU** may be modified or changed by mutual agreement of the parties hereto in writing. The modifications/changes shall be effective from the date on which they are modified /extended in writing unless otherwise agreed to.

ARTICLE - 8: Dispute Settlement

All disagreements/differences of opinion/disputes regarding the interpretation of the provisions of

this MoU shall be resolved by mutual consultation by the signatories to this MoU. However, in case, the dispute persists, the matter shall be referred to and amicably resolved by arbitration to be conducted by the sole arbitrator to be nominated jointly by Directors of both the Parties. The award of the arbitrator shall be final and binding on the parties. The arbitration proceedings will be conducted in accordance with the Indian Arbitration & Conciliation Act, 1996 and Venue of the Arbitration Centre will be Chennai.

ARTICLE - 9: Monitoring & Coordination

Both parties shall establish a Co-ordination Committee which will ensure the smooth functioning of the research and academic programs. The Dean- Research, AUM will be Chairperson, and Director LifeCell will be Convener of the Coordination Committee, which will comprise representatives of both the parties.

ARTICLE - 10: Validity and Termination of MoU

This MoU shall come into force from the date of its signatures and shall remain valid for a period of 5 years. This MoU may be modified, renewed or extended with mutual written consent of both parties. Either party may terminate this MoU by giving three (3) months' notice in writing to the other party.

ARTICLE – 12: Miscellaneous

A) Confidentiality

For the purpose of this clause, Confidential information means any information used by AUM & LifeCell to develop trade secrets, including documents, reports, data, models, designs, financial plans, procedures, software, formula, patents, patent applications or general know-how that was communicated verbally, electronically or in print.

Trade Secrets mean information possessed and developed by AUM and LifeCell that holds inherent economic value because it is not known by the general public or by either party's competitors. This may include but is not limited to formulas, programs, data, techniques, processes, patterns, or other information as deemed by the parties to this MoU.

Both AUM and LifeCell agrees to keep all Confidential Information and Trade Secrets belonging AUM and LifeCell in the strictest of confidence and shall not disclose Confidential Information or Trade Secrets to any unauthorized third party. Failure to keep Confidential Information and Trade Secrets result in legal action by the aggrieved party and other party will be required to pay any and all of the aggrieved party's attorney fees.

This Confidentiality Clause remains in full force and effect up to 5 years even after termination of the Agreement by its natural termination or the early termination by either party.

B) Indemnity

AUM and LifeCell agree to indemnify and hold harmless to each other, its respective affiliates, officers, agents, employees, and permitted successors and assigns against any and all claims, losses, damages, liabilities, penalties, punitive damages, expenses, reasonable legal fees and costs of any kind or amount whatsoever, which result from the negligence of or breach of this MoU by the indemnifying party, its respective successors and assignees that occurs in connection with this MoU.

This section remains in full force and effect even after termination of the Agreement by its natural termination or the early termination by either party.

C) Governing Law & Jurisdiction

This Agreement shall be construed and enforced solely pursuant to the laws of India, without giving effect to the principles of conflicts of laws thereof and the parties to this MoU shall be subject to the sole and exclusive jurisdiction of the High Courts and District Courts located in Chennai (India). The Parties agree that the foregoing governing law, jurisdiction and forum selections have been concluded as a result of arms-length negotiations and are not burdensome to either Party. Notwithstanding the foregoing, any court with competent jurisdiction may enforce the judgment and ruling of the High Court and District Courts located in Chennai.

D) Force Majeure

In the event where AUM and LifeCell are unable to perform the objective in pursuant to this MoU due to causes beyond the control of both the parties, including, but not limited to: acts of God; war; acts of the government; fires; floods; epidemics; quarantine restrictions; Pandemic; strikes, riots, labor disputes or work stoppages; transportation contingency; and freight embargoes; other catastrophes or any similar occurrences beyond parties reasonable control, neither AUM nor LifeCell shall be considered in breach of this MOU and shall not be held liable for the same.

E) Assignment

Neither AUM nor LifeCell assign this MoU or any rights or obligations under this MoU to any person or entity without the prior written consent of the other party. Any assignment in violation of this provision is null and void.

F) Severability

If a court of competent jurisdiction finds that any section, paragraph, clause, or provision of this Agreement is invalid or otherwise unenforceable, the remaining clauses in this Agreement shall remain in full force and effect.

G) Entire MOU

This MoU constitutes the entire MoU and understanding between the parties as to the subject matter hereof and supersedes all prior discussions, agreements and undertakings of every kind and nature between them, whether written or oral, with respect to such subject matter.

H) Amendment and Modification

In the event that the Parties to this MoU desire to change, add, or otherwise modify any terms, the same can be executed with the written consent of both AUM and LifeCell.

I) Waiver

The failure by either Party to exercise any right, power, or privilege under the terms of this MoU will not be construed as a waiver of any subsequent or future exercise of that right, power or privilege or the exercise of any other right, power, or privilege.

J) Counterparts

This MoU may be executed in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same instrument, without necessity of production of the others. An executed signature page delivered via facsimile transmission or electronic signature shall be deemed as effective as an original executed signature page.

In witness whereof the undersigned, duly authorized thereto, have signed this MoU on 12th April 2023.

<p>Amity University- Mumbai</p>   <p>Name: Dr. Hira S. Vyas, Registrar, Amity University Mumbai-Pune Expressway, Bhatan, Post-Somathne, Panvel, Mumbai, Maharashtra- 410206</p> <p>Date: <u>12/04/23</u></p> <p>Place: <u>Panvel</u></p> <p><i>Witnessed by:</i></p>  <p>Dr. P Suprasanna Dean Research (i/C), Amity University HOI, Amity Institute of Biotechnology (AIB) Mumbai-Pune Expressway, Bhatan, Post-Somathne, Panvel, Mumbai, Maharashtra- 410206</p> <p>Signed: _____</p> <p>Date: <u>12/04/23</u></p>	<p>LifeCell International Private Limited</p>   <p>Name: Mr. Mayur Abhaya Managing Director No.16, Vijayaraghavar Road, I Lane T. Nagar, Chennai -600017</p> <p>Date: _____</p> <p>Place: _____</p> <p><i>Witnessed by:</i></p>  <p>Name: Dr. Prakash Gambhir, MD Chief Medical Scientist, LifeCell No.16, Vijayaraghavar Road, I Lane T. Nagar, Chennai -600017</p> <p>Signed: _____</p> <p>Date: _____</p>
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Notary