

**MEMORANDUM OF UNDERSTANDING
BETWEEN
Heritage Institute of Technology, Kolkata, India (HITK)
AND
The Board of Trustees of the University of Alabama for the University of Alabama at
Birmingham (UAB), USA**

The Heritage Institute of Technology, Kolkata (hereinafter referred to as HITK) and the Board of Trustees of the University of Alabama for the University of Alabama at Birmingham (hereinafter referred to as UAB) enter into a Memorandum of Understanding (MOU) to establish a collaboration in the area of genome research that are of benefit to both institutions.

- I. The purpose of the cooperation between HITK and UAB are as follows:
 - To promote research activities of the respective institutions.
- II. To achieve these goals, HITK and UAB will, insofar as the means of each allow:
 - Carry out joint research in the field of genome-wide and epigenome-wide association studies related to chronic diseases of metabolic origin.
 - Promote institutional exchanges by inviting faculty and staff of the partner institutions to participate in a variety of teaching and/or research activities and professional development.
 - Organize symposia, conferences, short courses and meetings on research issues.
- III. Each institution shall designate a coordinator to oversee and facilitate the implementation of this Memorandum.
- IV. All publications resulting from the collaboration between the two institutions must give recognition to the Memorandum. Should any faculty collaboration result in any potential for intellectual property, the parties shall immediately discuss through designated representatives by fair and mutual understanding as to ownership and other property interests that may arise. Any such discussions shall at all times strive to maintain a harmonious and continuing relationship between the partners.
- V. The biological materials (DNA samples) to be transferred to UAB from HITK will be meant for genomic research on metabolic disorder only. No other research will be carried out of the samples. The study to be carried out will be based on absolutely research and not for any profit or commercial purpose. No patent/intellectual property issues shall be filed on any product or process developed with this bio-material without the written consent of the agencies involved.

VI. The present MOU shall be treated as the parent document of any program agreement executed between the parties. Further agreements concerning any program shall provide details concerning the specific commitments made by each party and shall not become effective until they have been reduced to writing and executed by the duly authorized representatives of the parties. This scope of the activities under this agreement shall be determined by the funds regularly available at both institutions for the types of collaboration undertaken and by financial assistance as may be obtained by either institution from external sources.

VII. Except as may be stipulated in any specific program agreement, each institution shall be responsible for expenses incurred by its employees under this agreement.

VIII. Upon approval by each institution, this Memorandum shall remain in effect for a period of five (5) years unless terminated earlier by either institution. Such termination by one institution shall be effected by giving the other institution at least ninety (90) days prior to the desired withdrawal date. Termination shall be without penalty. If this MOU is terminated neither HITK nor UAB shall be liable to the other for any monetary or other losses which may result. This MOU may be renewed for another period of five (5) years upon mutual written consent of the two institutions before the expiry date.

The following authorized individuals have signed the present MOU on behalf of their respective institutions:

Principal
Heritage Institute of Technology, Kolkata



Principal
Heritage Institute of Technology

04/05/2015

Date

The Board of Trustees of the University of
Alabama for the University of Alabama at
Birmingham



Lynn W. Stedman, MBA, Director,
Office of Sponsored Programs

4/28/15

Date

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INDIAN COUNCIL OF MEDICAL RESEARCH

Material Transfer Agreement

Please specify: IMPORT/EXPORT of biological material

EXPORT

1. Name and address of the Institution/Agency providing the bio-material (Sending Party):

Heritage Institute of Technology, Kolkata
Department of Biotechnology
Chowbaga Road, Anandapur,
P.O. East Kolkata Township
Kolkata – 700107
West Bengal, India

2. Name and address of the Institution/Agency where material is to be sent (Receiving Party):

The Board of Trustees of the University of Alabama for University of Alabama at Birmingham, a constitutionally created public corporation of the State of Alabama with administrative offices at 701 20th Street South, AB 770, Birmingham, AL, USA 35294-0107

Address for sending materials:

University of Alabama at Birmingham
Department of Epidemiology,
School of Public Health
1661 University Blvd.
Birmingham, AL – 35294
USA

3. Nature/type of bio-material to be transferred.

Whole blood/Serum/Plasma/Urine/other Body Secretions/Excretions/Body cavity fluid/Tissue/Cell culture/Microbial product/Nucleic acid/ others - Pl. specify the source.

Nucleic acid- isolate DNA from whole blood.

4. Number of biological samples to be transferred.

Four Hundred (400)

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5. Quantity/ volume of samples to be transferred.

~100µl

6. Period/duration (months /years) over which material to be transferred. (Pl. also indicate the frequency of transfer of material):

Two Years

7. Purpose of transfer of biological material. Please specify.

- i) Bioavailability/Bioequivalence/Pharmacokinetic studies
- ii) Clinical trials
- iii) Diagnostic testing
- iv) Quality Assurance/Calibration for maintaining high standards of Indian laboratories
- v) Any other purpose – pl. specify

For genomic study only.

8. Purpose and need of transfer of the material:

For a) Research purposes

b) Commercial purposes

a) If for Research purposes: Type of research/investigations to be carried out using the bio-material (Brief description in 250 words).

The bio-material (DNA samples) will be transferred only for research purpose. The present study will primarily focus on the difference in DNA methylation in women with and without gestational diabetes (GDM) and its effect on their children. The non-genetic part will be studied in Heritage Institute of Technology (HITK), Kolkata, India and genomic part will be carried out in University of Alabama at Birmingham (UAB), USA. The genome-wide association will focus on diabetes and associated metabolic disorders as phenotypes. The epigenome-wide association will focus on DNA methylation.

As HITK laboratory do not have the facility of next generation sequencing (NGS) it is the understanding between the two aforesaid Institutes that the NGS will be carried out in UAB. It is for only this purpose that the biological samples are needed to be transferred.

The above mentioned study proposal is however subjected to the approval of Institutional Ethics Committee (IEC) of HITK and Institutional Review Board (IRB) of UAB. It will follow the guidelines of both IEC and IRB in order to conduct this collaborative research.

The biological materials to be transferred to UAB from HITK will therefore be meant for genomic research on metabolic disorder only. No other research will be carried out of the samples. The study to be carried out will be based on absolutely research and not for any profit or commercial purpose. It will take at least two years to send the samples in tandem and overall five years to complete the project.

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- b) If for Commercial purposes: Details of commercial activity and type of research/investigations to be carried out using the bio-material (Brief description in 250 words).

N/A

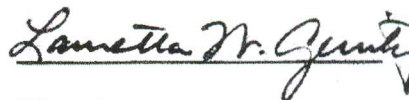
The transfer of biological material is governed by the following conditions:

1. The receiving Institution/Agency shall be the only user of the bio-material.
2. The bio-material shall not be transferred to any other person/agency in any circumstances.
3. **Details of commercial activity and type of research/investigations to be carried out using the bio-material:** The biological materials (DNA samples) to be transferred to UAB from HITK will be meant for genomic research on metabolic disorder only. No other research will be carried out of the samples. The study to be carried out will be based on absolutely research and not for any profit or commercial purpose. No patent/intellectual property issues shall be filed on any product or process developed with this bio-material without the written consent of the agencies involved.
4. No patent/intellectual property issues shall be filed on any product or process developed with this bio-material without prior notification to the Agencies involved.
5. To the extent allowed by the laws of the State of Alabama, U.S.A., the requesting Institution indemnifies the donor Institution from all damages that may occur due to improper handling of the bio-material.
6. The present MTA shall only be applicable for the said purpose and can not be transferred/assigned to any other Agency/Institution.
7. The brief report/certificate of safe utilization and disposal shall be provided *within 3 months of the last use of imported biological material in prescribed format.*


Principal
Heritage Institute of Technology

Signature (with seal):
(Sending Party)

Date: 20.04.2015



Signature
(Receiving Party)

Date: 4/21/15

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