



Minutes of the 13th Meeting of the Asian Consortium for the Conservation and Sustainable Use of Microbial Resources (ACM13)

The 13th meeting of the **Asian Consortium for the Conservation and Sustainable Use of Microbial Resources (ACM13)** and an **International Symposium “Microbial Resource Centers and Conservation of Microbial Diversity”** was organized by one of the ACM members Microbial Type Culture Collection and Gene Bank (MTCC), at CSIR-Institute of Microbial Technology (CSIR-IMTECH), Chandigarh from 8th to 10th November 2016.

Date: November 8 (Wednesday)-10 (Friday), 2016

Venue of the Meeting:

**Auditorium CSIR-Institute of Microbial Technology
& Seminar Hall, MTCC Building
Sector-39A, Chandigarh – 130036, India**

Meeting Homepage: <https://www.mtccindia.res.in/conference-training>

Participants:

(Members) Total of 8 organizations from 7 countries and region participated

1. BCRC (Chinese Taipei)
2. IMBT-VNUH (Vietnam)
3. KACC (Korea)
4. KCTC (Korea)
5. MTCC (India)
6. NBRC (Japan)
7. PNCM (Philippines)
8. UNiCC (Malaysia)

Special Speakers:

- Dr. (Mrs). Meena Kumari, Chairperson, National Biodiversity Authority (NBA) of India, Chennai.
- Dr. S. Shivaji, Director Research, LV Prasad Eye Institute, Hyderabad
- Dr. Manabu Suto, NBRC, Japan
- Prof. Arunaloke Chakraborti, PGIMER, Chandigarh
- Prof. Ruplal, Delhi University, Delhi
- Dr. Goutam Ghosh, Senior Vice-President, Panacea Biotec Ltd, New Delhi



- Mr. Omprakash Verma, Abbott Health Care Pvt. Ltd.

PROGRAM SUMMARY

1. Welcome Remarks
2. Inauguration of the 13th ACM Meeting and International Conference
3. International Symposium “Microbial Resource Centers and Conservation of Microbial Diversity”
 - Microbiology in transition
 - Microbial Applications in Industry
 - Microbial diversity, taxonomy and genomics
 - Indian Microbial Culture Collections
 - Microbial diversity studies of specific environments and applications
4. Asian Consortium For the Conservation and Sustainable Use of Microbial Resources (ACM)
 - Members Report
 - Taskforce Report
 - General Assembly (CLOSED SESSIONS ONLY FOR MEMEBRS OF ACM)
5. Valedictory Function of International Symposium
6. Young Researchers Session
 - Talks by young scientists
 - Poster session
7. Closing of the International Symposium



1. Welcome Remarks

The 13th ACM was opened with opening remarks made by Prof. Dr. R.K. Sinha, Director, CSIR-Institute of Microbial Technology, followed by welcome remarks made by Mr. Yasuo Kii, Director-General of NBRC, Japan and Organizing Secretary, Head of MTCC, Dr. G.S.Prasad.

2. Inauguration of the conference:

The 13th ACM meeting and International Symposium were inaugurated and welcome address was given by Dr. (Mrs). Meena Kumari, Chairperson, National Biodiversity Authority (NBA) of India, Chennai. She explained about the functions of National Biodiversity Authority (NBA) as nodal agency for regulating the use of biological resources of the country. This was followed by inaugural lecture by Inaugural Lecture: “Bacteria, Genes and genomes from Antarctica, Arctic, Himalayan glaciers and Stratosphere” Dr. S. Shivaji, Director Research, LV Prasad Eye Institute, Hyderabad.

3. International Symposium

“Microbial Resource Centers and Conservation of Microbial Diversity”

As part of the ACM meeting, an International Symposium “Microbial Resource Centers and Conservation of Microbial Diversity” was also organized. The symposium was divided to 5 different sessions as shown below and was held on 3 consecutive days.

A. Microbiology in transition

- Dr. Manabu Suto, NBRC, Japan
“ACM and Nagoya Protocol”
- Prof. Arunaloke Chakraborti, PGIMER, Chandigarh
“The transition of medical mycology and where we stand today!”
- Dr. Katsuhiko Ando, NBRC, Japan
“Scientific cooperation among Asian Countries”.
- Prof. Ruplal, Delhi University, Delhi
“Taxo-genomics: Moving Beyond Polyphasic Approach”.

B. Microbial Applications in Industry

- Dr. Goutam Ghosh, Senior Vice-President, Panacea Biotec Ltd, New Delhi
“Challenges in Microbial Resources for Fast Track Vaccine development”



- Dr. Anshu Mathur, IOC, Faridabad.
"Microbes for Biofuel Applications"
- Mr. Omprakash Verma, Abbott Health Care Pvt. Ltd.
"Microbiology and Abbott"

C. Microbial diversity, taxonomy and genomics

- Prof. Ch. Venkata Ramana, University of Hyderabad, Hyderabad
"Bacterial diversity of India: A status report".
- Prof. J. P. Tamang, Sikkim University, Gangtok
"Indian Fermented Foods: History and Microbiology".
- Dr. Prabhu Patil, CSIR-IMTECH, Chandigarh
"Digitalization of microbial taxonomy using high throughput genomics".
- Dr. Raja, Genotypic Pvt Ltd, Bengaluru
"First, second and third generation Sequencing and Microarrays in microbial metagenomes and isolates".
- Dr. Sasikala, JNTU, Hyderabad, India
"Anoxygenic phototrophic bacteria of India".
- Dr. Srikrishna Subramanian, CSIR-IMTECH, Chandigarh
"Exploring Myxobacterial Diversity Using Next Generation Sequencing and Comparative Genomics".

D. Indian Microbial Culture Collections

- Prof. Rupinder Tewari, Panjab University, Chandigarh
"Strengthening Industry-Academia R&D ecosystem in india"
- Dr. Yogesh Schouche, MCC, NCCS, Pune
"Microbial Culture Collection (MCC)".
- Dr. Sanjay Singh, Agharkar Research Institute, Pune
"National Fungal Culture Collection of India (NFCCI)".
- Dr. Anup Ghosh, PGIMER, Chandigarh
"National Collection of Pathogenic Fungi (NCCPF)".
- Dr. Sushil K. Sharma, NBAIM, Mau, India
"National Bureau of Agriculturally Important Microorganisms (NBAIM)".
- Dr. Mahesh Dharne, NCIM, NCL, Pune
"National Collection of Industrial Microorganisms (NCIM)"

E. Microbial diversity studies of specific environments and applications



- Prof. B.S. Chadha, GNDU, Amritsar.
“Biosprosecting thermophilic fungi for novel cellulases and hemicellulases for bioconversion of agro-residues into value added products”.
- Dr. Suresh Korpole, CSIR-IMTECH, Chandigarh
Bioactive microbial metabolites of the genus Brevibacillus for pharmaceutical applications”.
- Dr. Prameela, ITCC, IARI, New Delhi
“Biodiversity, Taxonomy, Conservation and Documentation of fungi of India”.
- Dr. N. Manickam, CSIR-IITR, Lucknow.
“Exploitation of the functional microbial diversity from contaminated ecosystems for the biodegradation of persistent pollutants”.
- Dr. Vishakha Grover, Dental College, Panjab University, Chandigarh.
“Discriminating life forms in oral subgingival microbiome - A case study”.
- Dr. S. Krishnamurthi, MTCC, CSIR-IMTECH, Chandigarh
“Use of metagenomic approaches to study the prokaryotic diversity of marine and other interesting environments”.

4. Asian Consortium For the Conservation and Sustainable Use of Microbial Resources (ACM)

A. Members Report

- Biological Resource Center, National Institute of Technology and Evaluation (NBRC), Japan
- Bioresource Collection and Research Center (BCRC), Food Industry Research and Development Institute (FIRDI), Chinese Taipei, Taiwan
- Institute of Biology Microbiology and Biotechnology (IMBT), Vietnam National University, Hanoi, Vietnam
- Korean Agricultural Culture Collection (KACC), National Academy of Agricultural Science, South Korea
- Korean Collection for Type Cultures (KCTC), Korea Research Institute of Bioscience and Biotechnology (KRIBB), South Korea
- Microbial Culture Collection Unit (UNiCC), Institute of Bioscience, Universiti Putra Malaysia, Selangor, Malaysia
- Microbial Type Culture Collection and Gene Bank (MTCC), CSIR-Institute of Microbial Technology (IMTECH), Chandigarh, India
- Philippine National Collection of Microorganisms (PNCM), National Institute of Molecular Biology and Biotechnology (BIOTECH), University of the



Philippines, Los Banos, the Philippines

B. Taskforce Report

• Taskforce on Human Resource Development (HRD-TF)

Dr. Rosario Monsalud, the chair of HRD-TF, announced the 4th ACM International Training Workshop on Application of Microbial Resources to Promote Bio-based Products from Agriculture Waste Biomass hosted by Research Center for Biotechnology, and Indonesian Culture Collection (InaCC), Indonesian Institute of Sciences (LIPI), to be held in December, 2016. Dr. Monsalud also reported on the 5th ACM International Microbial Taxonomy Training Course hosted by Korean Collection of Type Culture (KCTC), and Workshop on Rapid Detection of Clinically Important Microbes Using Molecular Techniques hosted by Philippine Network of Microbial Culture Collections, Inc. (PNMCC).

• Taskforce on Management of Material Transfer (MMT-TF)

Dr. Katsuhiko Ando, the chair of MMT-TF reported the development of a new scheme of microbial strains transfer called "ITSMAN." He explained that the ITSMAN was designed to facilitate the strain transfer from culture collections in countries of origin to users in view of the provisions of the Nagoya Protocol.

• Proposal on New Taskforce "Mutual Aid Association for mBRC" (MAA-TF)

Establishment of a new taskforce was proposed by Dr. Takahide Ishida of NBRC. The new taskforce aimed at promoting accessibility to microbial resources preserved in the culture collections and enhancing legal certainty of the microbial transfer.

B. General Assembly (CLOSED SESSIONS ONLY FOR MEMEBRS OF ACM)

Venue: Seminar hall of the newly constructed MTCC.

In general assembly, reports and discussions were made regarding the following agenda; (1) Adoption of minutes of ACM12, (2) Announcement of new member organizations, (3) Adoption of the new taskforce, (4) Adoption of Chandigarh Statement, and (5) Announcement of ACM14 (2017) and ACM 15 (2018).

Agenda 1: Adoption of minutes of ACM12

Ms. Funabaki reported the minutes of 12th Asian Consortium (ACM12) hosted



by Indonesian Institute of Sciences (LIPI) on October 8 - 10, 2015 at Jakarta and Bogor, Indonesia. All participants confirmed the contents and adopted the minutes.

Agenda 2: Announcement of new member organizations

The following two organizations were accepted as new members in the Online General Assembly held between Sep 30 and Oct 14, 2016, and their new membership was announced at the General Assembly:

- Bioresource Collection and Research Center (BCRC), Food Industry Research and Development Institute (FIRDI), Chinese Taipei, Taiwan
- Microbial Culture Collection Unit (UNiCC), Institute of Bioscience, Universiti Putra Malaysia, Selangor, Malaysia

It was also reported that several organizations had expressed their interest to become ACM members.

Agenda 3: Adoption of the new taskforce

The General Assembly unanimously accepted the proposal, so the establishment of the new taskforce “Mutual Aid Association for mBRC” chaired by Dr. Takahide Ishida was adopted.

Agenda 4: Adoption of Chandigarh Statement

A draft of Chandigarh Statement was presented and proposed to all members. After discussion and deliberation among the members, the statement was adopted.

Agenda 5: Announcement of ACM14 (2017) and ACM 15 (2018)

The next ACM annual meeting, ACM14 (2016), would be held in Chinese Taipei, hosted by Bioresource Collection and Research Center (BCRC), Food Industry Research and Development Institute (FIRDI), Chinese Taipei. The 15th ACM annual meeting would be held in Mongolia, hosted by Institute of General and Experimental Biology, Mongolian Academy of Sciences (IGEB-MAS).

5. Valedictory Function of International Symposium

The valedictory function of the International Symposium and the 13th ACM meeting was chaired by Former Director General of Council of Scientific and



Industrial Research (CSIR), India Dr. P.S. Ahuja. He has appreciated the efforts of ACM members for their scientific cooperation and presenting a united picture of the strength of the Microbial Resource Centers of Asia.

6. Young Researchers Session

The young researchers' session was organized jointly by Microbial Type Culture Collection and Gene Bank (MTCC) and Association of Microbiologists of India (Chandigarh Chapter). This session was chaired by Dr. Jatinder Kaur Arora, Director, Punjab State Council for Science and Technology. Several young researchers from MTCC, CSIR-Institute of Microbial Technology, Panjab University and other nearby universities and colleges enthusiastically participated in this session. Four talks were delivered by young scientists. Forty four posters were presented by enthusiastic young researchers.

7. Closing of the International Symposium

The 13th ACM meeting and International conference were successfully concluded with enthusiastic participation from ACM member and several microbiology researchers from Indian culture collections, universities, research organization and industries. The participants were also taken for a tour of MTCC and CSIR-IMTECH facilities and the ACM delegates were taken for local sightseeing. The organizers MTCC and secretariat of ACM thanked all the participants for making the ACM meeting and international symposium a grand success.

APPENDIX 1. The 13th Meeting of the Asian Consortium for the Conservation and Sustainable Use of Microbial Resources (ACM13) and an International Symposium "Microbial Resource Centers and Conservation of Microbial Diversity"

8th November 2016 (TUESDAY): Venue Auditorium CSIR-IMTECH	
09:00-09:30	Registration
09:30-09:50	Welcome to the participants: Dr. R.K. Sinha, Director, CSIR-IMTECH, Mr. Yasuo Kii, Director-General, NBRC, Japan and Dr. G.S. Prasad, Head, MTCC, India
09:50-10:30	Inauguration of the conference and address by: Dr. (Mrs). Meena Kumari, Chairperson, National Biodiversity Authority (NBA) of India, Chennai. Inaugural Lecture: "Bacteria, Genes and genomes from Antarctica,



	Arctic, Himalayan glaciers and Stratosphere": Dr. S. Shivaji, Director Research, LV Prasad Eye Institute, Hyderabad
10:30-11:00	HIGH TEA
Microbiology in transition Chairpersons Dr. Meena Kumari and Dr. S. Shivaji	
11:00-11:30	"ACM and Nagoya Protocol", Dr. Manabu Suto, NBRC, Japan
11:30-12:00	"The transition of medical mycology and where we stand today!" Prof. Arunaloke Chakraborti, PGIMER, Chandigarh
12:00-12:30	"Scientific cooperation among Asian Countries". Dr. K. Ando, NBRC, Japan
12:30-13:00	"Taxo-genomics: Moving Beyond Polyphasic Approach". Prof. Ruplal, Delhi University, Delhi
13:00-14:00	LUNCH
Microbial Applications in Industry Chairpersons Dr. Ando and Dr. Yogesh Schouche	
14:00-14:20	"Challenges in Microbial Resources for Fast Track Vaccine development". Dr. Goutam Ghosh, Senior Vice-President, Panacea Biotec Ltd, New Delhi
14:20-14:40	"Microbes for Biofuel Applications". Dr. Anshu Mathur, IOC, Faridabad.
14:40-15:00	"Microbiology and Abbott", Mr. Omprakash Verma, Abbott Health Care Pvt. Ltd.
Microbial diversity, taxonomy and genomics Chairpersons Dr. Suto and Prof. A. Bachhawat	
15:00-15:30	"Bacterial diversity of India: A status report". Prof. Ch. Venkata Ramana, University of Hyderabad, Hyderabad
15:30-15:50	"Indian Fermented Foods: History and Microbiology". Prof. J. P. Tamang, Sikkim University, Gangtok
15:50-16:20	TEA/COFFEE BREAK
16:20-16:40	"Digitalization of microbial taxonomy using high throughput genomics". Dr. Prabhu Patil, CSIR-IMTECH, Chandigarh
16:40-17:00	"First, second and third generation Sequencing and Microarrays in microbial metagenomes and isolates". Dr. Raja, Genotypic Pvt Ltd, Bengaluru
17:00-17:20	"Anoxygenic phototrophic bacteria of India". Dr. Sasikala, JNTU, Hyderabad, India
17:20-17:40	"Exploring Myxobacterial Diversity Using Next Generation Sequencing and Comparative Genomics". Dr. Srikrishna Subramanian, CSIR-IMTECH, Chandigarh
17:45-19:00	CULTURAL PROGRAM
19:00	Moving to Hotel Shivalik View for Welcome Dinner
9th November 2016 (WEDNESDAY) Venue Auditorium CSIR-IMTECH	
Indian Microbial Culture Collections Chairpersons Dr. Rosario and Prof. J.P. Tamang	
09:15-09:45	"Strengthening Industry-Academia R&D ecosystem in india" Prof. Rupinder Tewari, Panjab University, Chandigarh



09:45-10:00	"Microbial Culture Collection (MCC)". Dr. Yogesh Schouche, MCC, NCCS, Pune
10:00-10:15	"National Fungal Culture Collection of India (NFCCI)". Dr. Sanjay Singh, Agharkar Research Institute, Pune
10:15-10:30	"National Collection of Pathogenic Fungi (NCCPF)". Dr. Anup Ghosh, PGIMER, Chandigarh
10:30-11:00	TEA/COFFEE BREAK
11:00-11:15	"National Bureau of Agriculturally Important Microorganisms (NBAIM)". Dr. Sushil K. Sharma, NBAIM, Mau, India
11:15-11:30	"National Collection of Industrial Microorganisms (NCIM)". Dr. Mahesh Dharne, NCIM, NCL, Pune
Asian Consortium For the Conservation and Sustainable Use of Microbial Resources (ACM) Chairperson: Dr. G.S. Prasad , Vice-chair: Dr. Gwo-Fang Yuan; Moderator : Ms. Rie Seit	
Members Report	
11:30-11:45	Biological Resource Center, National Institute of Technology and Evaluation (NBRC), Japan
11:45-12:00	Bioresource Collection and Research Center (BCRC), Food Industry Research and Development Institute (FIRDI), Chinese Taipei, Taiwan
12:00-12:15	Institute of Biology Microbiology and Biotechnology (IMBT), Vietnam National University, Hanoi, Vietnam
12:15-12:30	Korean Agricultural Culture Collection (KACC), National Academy of Agricultural Science, South Korea
12:30-12:45	Korean Collection for Type Cultures (KCTC), Korea Research Institute of Bioscience and Biotechnology (KRIBB), South Korea
12.45-13.00	Microbial Culture Collection Unit (UNiCC), Institute of Bioscience, University Putra, Selangor, Malaysia
13.00-14.00	LUNCH
14:00-14:15	Microbial Type Culture Collection and Gene Bank (MTCC), CSIR-Institute of Microbial Technology (IMTECH), Chandigarh, India
14:15-14:30	Philippine National Collection of Microorganisms (PNCM), National Institute of Molecular Biology and Biotechnology (BIOTECH), University of the Philippines, Los Nanos, the Philippines
Taskforce Report	
14:30-14:45	Taskforce on Human Resource Development
14:45-15:00	Taskforce on Management of Material Transfer
15:00-15:30	Transfer Proposal on New Taskforce
15:30-16:00	TEA/COFFEE BREAK
General Assembly (CLOSED SESSIONS ONLY FOR MEMEBRS OF ACM)	
16:00-19:00	Agenda 1. Announcement of New Members Agenda 2. Adoption of New Taskforce Agenda 3. Adoption of 12th ACM Minutes of Meeting Agenda 4. Adoption of Chandigarh Statement Agenda 5. Outstanding Issues (Change of the Secretariat) Agenda 6. Announcement of 14th and 15th ACM Meeting



10th November 2016 (THURSDAY) Venue Auditorium CSIR-IMTECH

Microbial diversity studies of specific environments and applications

Chair Persons: Dr. Dao Thi Luong and Dr. Sanjay Singh

09:15-09:30	"Biospropecting thermophilic fungi for novel cellulases and hemicellulases for bioconversion of agro-residues into value added products". Prof . B.S. Chadha, GNDU, Amritsar.
09:30-09:45	Bioactive microbial metabolites of the genus <i>Brevibacillus</i> for pharmaceutical applications". Dr. Suresh Korpole, CSIR-IMTECH, Chandigarh
09:45-10:00	"Biodiversity, Taxonomy, Conservation and Documentation of fungi of India". Dr. Prameela, ITCC, IARI, New Delhi
10:00-10:15	"Exploitation of the functional microbial diversity from contaminated ecosystems for the biodegradation of persistent pollutants". Dr. N. Manickam, CSIR-IITR, Lucknow.
10:15-10:30	"Discriminating life forms in oral subgingival microbiome - A case study". Dr. Vishakha Grover, Dental College, Panjab University, Chandigarh.
10:30-10:45	"Use of metagenomic approaches to study the prokaryotic diversity of marine and other interesting environments". Dr. S. Krishnamurthi, MTCC, CSIR-IMTECH, Chandigarh
10:45-11:15	Valedictory Function of International Symposium Chief Guest : Dr. P.S. Ahuja, Former Director General CSIR
11:15-11.45	TEA/COFFEE BREAK
YOUNG RESEARCHERS SESSION	
11:45-13:40	Organized by Microbial Type Culture Collection and Gene Bank (MTCC) and Association of Microbiologists of India (Chandigarh Chapter)
	Chief Guest : Dr. J.K. Arora, Director, PSCST Guest of honour : Prof. Navdeep Goyal, Fellow PU
12:00-12:10	"Insights into prokaryotic diversity composition and characterization of novel taxa from the marine habitats of India". Ashish Verma, MTCC, CSIR-IMTECH, Chandigarh
12:10-12:20	"Bioprospecting industrially relevant laccases in the bacterial diversity of natural and artificial bioresources". Vijaya Gupta, Panjab University, Chandigarh
12:20-12:30	"Biodegradation of paraquat by endophytic pseudomonas psychrotolerans isolated from the plant Parthenium hysterophorus". Bhawna Vyas, MTCC, CSIR-IMTECH, Chandigarh
12:30-12:40	"A microbial technology for treatment of sewage water to make it



	suitable for the management of sukhna lake chandigarh". Deepak Kumar, Panjab University, Chandigarh
12:40-13.40	POSTER SESSION
13:45-14:30	LUNCH
14:30 Onwards	CITY TOUR FOR DELEGATES