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Memorias del Primer Congreso Internacional de Biotecnología e innovación - ICBi 2018

Meeting Report of the First International Congress of Biotechnology and innovation - ICBi 2018

The First International Congress of Biotechnology and Innovation, held in Lima- Peru from July 9 to 12, 2018, was organized by the Laboratory of Mycology and Biotechnology "Marcel Gutiérrez-Correa" (LMB-MGC) of La Molina National Agrarian University (UNALM).

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Jorge L. Wong Dávila, Ph.D. in Biological Engineering, <https://orcid.org/0000-0001-9211-8652>

Evaluation Panel**Oral Communications:**

Julio Solis, Maria Lucila Hernández-Macedo, Gretty K. Villena, Dr. Ilanit Samolski, Yvette Ludeña, Milagros Chang.

Posters:

Patricia Gil-Kodaka, Marcelo da Costa Mendonça, Jorge Alberto López.

Scientific Program

The scientific program (Appendix 1) was divided into four sections. The first two sections corresponded to different biotechnological areas according to their appli-

cation: i) *Agricultural and Animal Biotechnology* and ii) *Industrial and Environmental Biotechnology*. The third section covered different *Molecular Tools Applied to Biotechnology* and, finally, the fourth focused on *Innovation in Biotechnology* in the region.

The Congress not only sought to promote Biotechnology and Innovation in Peru, but also to contribute to the interaction with researchers and innovators from other countries. Therefore, the four sections included diverse conferences offered by about 50 scientists and specialists from 14 different countries (Appendix 1). Each section was closed with a Round Table focused on discuss the Current Situation and Perspectives of the area in Peru.

Participants

ICBi 2018 was attended by 150 registered participants from various countries such as Peru, Brazil, Chile and Bolivia. Participants presented 37 Oral Communications and 44 Posters which were grouped according to the first 3 sections (Supplementary material S1). The best oral communications and posters were awarded.

Theoretical-Practical Courses

A total of five specialized theoretical-practical courses were offered before and after the Congress, with approximately 20 participants per course: i) *Analysis of Transcriptomic data: RNA-Seq*, ii) *Bioprospecting of Soil Microorganisms*, iii) *Applications of Raman – AFM Microscopy*, iv) *Gene Editing in Fungi and Yeasts: CRISPR-Cas9* and v) *Metagenomics: Identifications of OTUs by Illumina Next Generation Sequencing Technology* (Table 1).

Financing and Sponsorship

Most of the budget to carry out ICBi 2018 came from the registration fees of the participants. Support was also received from 17 companies and an NGO, which had the opportunity to show their products and services on stands (Table 2).

Table 1. Specialized Courses offered by ICBi 2018

| Course | Duration (days) | Specialist | Affiliation |
|---|-----------------|--|---|
| Analysis of Transcriptomic data: RNA-Seq | 2 | MSc. Hugo Valdivia | BioScience App (Peru) |
| Bioprospecting of Soil Microorganisms | 3 | Dr. Doris Zuñiga, Dr. Marcia Toro, Dr. Ernesto Ormeño, Dr. Katty Ogata | Laboratory of Microbial Ecology and Biotechnology (LEMYB-UNALM) |
| Applications of Raman – AFM Microscopy | 1 | Dr. Fernando Vargas | Witec (Germany) |
| Gene Editing in Fungi and Yeasts: CRISPR-Cas9 | 2 | Dr. John Wyrick, Dr. Jakob Blæsbjerg | Washington State University, Technical University of Denmark |
| Metagenomics: Identifications of OTUs by Illumina Next Generation Sequencing Technology | 5 | Guillermo Trujillo | GenLab del Perú |

Table 2. Sponsors

| Company/NGO |
|--------------------------------------|
| Ades S.A.C. (Warema S.A.C.) |
| Applikon Biotechnology Inc. |
| Baires S.A.C. |
| Belomed S.R.L. |
| Biosym E.I.R.L. |
| Biotechnology Latina S.R.L. |
| Corporación Vasot S.A.C. |
| Craneando* |
| Ecodes ONGD |
| J&B Lab S.A.C. |
| Kossodo S.A.C. |
| La Ensenada S.R.L. |
| Merck Peruana S.A. |
| Nexo Equipamiento y Servicios S.A.C. |
| Proyectos Pesacon S.A.C. |
| Reactivos para Análisis S.A.C. |
| Sartorius AG |
| WITec Pte. Ltd. |

In addition, ICBI 2018 was supported by academic and scientific sponsors such as Research Vice-Rectorate and Faculty of Sciences of the UNALM, the Peruvian Society of Biochemistry and Molecular Biology, whose members participated in the selections of the works presented, and Revista Peruana de Biología, responsible for preparing a Special Number dedicated to the Congress.

Acknowledgment

Organizing Committee wants to thank to.

La Molina National Agrarian University authorities

Dr. Enrique Flores, Rector

Dr. Carmen Velezmoro, Research Vice-Rector

Dr. Jorge Alarcón Academic Vice-Rector

Dr. Victor Meza, Faculty of Sciences - Dean

Dr. Cesar López, Biology Department, Director

Dr. Ivonne Salazar, Institutional Image Office - Director

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Peruvian Society of Biochemistry and Molecular Biology (SPBBM)

Peruvian National Council for Science (CONCYTEC)

National Innovation Program for Competitiveness and Productivity (INNÓVATE PERÚ)

Sponsoring companies

Scientific Committee and Evaluation Panel

Support Committee

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Luis Enrique Moyano, from i design Perú, for his great work on the web page: www.icbiperu.com

APPENDIX 1



I Congreso Internacional de Biotecnología e innovación (ICBi)

09 al 12 de julio
Lima - Perú

Agricultural Biotechnology
Animal Biotechnology
Industrial Biotechnology
Environmental Biotechnology
Molecular tools
Innovation in Biotechnology

PROGRAMME
ICBi 2018

Informes:
www.icbiperu.com
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PROGRAMME

Main Auditorium of UNALM

Monday, July 9

9:00 - 10:00 Registration
10:00 - 10:30 Welcoming words from the President of Organizing Committee
Dr. Gretty Villena

Section I: Agricultural and Animal Biotechnology

10:30 - 11:15 Keynote Conference **"Genome editing in crop improvement"**
Dr. Paul Chavarriaga
Centro Internacional de Agricultura Tropical (CIAT), Colombia
11:15 - 11:35 Coffee break
11:35 - 12:05 **"Use of genomics in animal breeding and improvement"**
Dr. Mario Poli
Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina
12:05 - 12:35 **"Evaluation and regulation of genetically modified organisms in Latin America. Considerations"**
Dr. Eduardo Menéndez, Spain
12:35 - 13:30 Lunch
13:30 - 14:00 **"Biotechnological advances in animal reproduction and genetic improvement"**
Dr. William Vivanco
Universidad Nacional Agraria La Molina (UNALM), Peru
14:00 - 14:30 **"Genomics of phytopathogenic viruses"**
Dr. Jan Kreuze
Centro Internacional de la Papa (CIP), Peru
14:30 - 15:00 **"Biotechnological tools for Fusarium wilt study"**
Dr. Mauricio Luna
Universidad Veracruzana (UV), Mexico
15:00 - 15:45 Round Table: **Current situation and perspectives of agricultural and animal biotechnology in Peru**
Dr. Gustavo Gutiérrez, Universidad Nacional Agraria La Molina (UNALM)
Dra. Martha Valdivia, Universidad Nacional Mayor de San Marcos (UNMSM)
Dr. César López, Universidad Nacional Agraria La Molina (UNALM)
Dr. William Roca, Asociación Peruana para el Desarrollo de la Biotecnología (PeruBiotec)
15:45 - 16:05 Coffee break

Section II: Industrial and Environmental Biotechnology

16:05 - 16:35 Keynote Conference **"Biorefineries based on microalgae for bioactive compounds production"**
Dr. Roberto T. Abdala
Universidad de Málaga (UMA), España
16:35 - 17:15 **"Bioethanol: the brazilian experience"**
Dr. Carlos Alberto Labate
Universidade de São Paulo (USP), Brazil



I Congreso Internacional de Biotecnología e innovación (ICBi)

17:15 - 18:00 Homage Round Table **"Marcel Gutiérrez Correa and Biotechnology in Peru"**
Dr. Ernesto Bustamante
Dr. David Campos, Universidad Nacional Agraria La Molina
Dr. José Luis Bauer, Universidad Peruana Cayetano Heredia
Dr. Gianangelo Nava

18:00 Official Ceremony of Inauguration by the authorities of UNALM
Words from the Rector, Dr. Enrique Flores Mariazza
Cultural act and welcoming cocktail

Tuesday, July 10

Section II: Industrial and Environmental Biotechnology

9:30 - 10:15 Keynote Conference **"Challenges in the implementation of agro-industry by-products based bio-refineries"**
Dr. José Teixeira
Universidade do Minho (UMinho), Portugal
10:15 - 10:45 **"Wastewater treatment and value-added compounds production"**
Dr. Mario Kato
Universidade Federal de Pernambuco (UFPE), Brazil
10:45 - 11:20 **"Ureide metabolism as a novel target to improve abiotic stress resistance in plants"**
Dr. Christopher D. Todd
University of Saskatchewan (Usask), Canada
11:20 - 11:40 Coffee break
11:40 - 12:10 **"Use of macroalgae for bioremediation and its biotechnology uses"**
Dr. Loreto Contreras
Universidad Andrés Bello (UNAB), Chile
12:10 - 13:00 Round Table: **Current situation and perspectives of industrial and environmental biotechnology in Peru**
Dr. Patricia Gil, Universidad Nacional Agraria La Molina (UNALM)
Dr. David Campos, Universidad Nacional Agraria La Molina (UNALM)
Dr. Pablo Ramirez, Universidad Nacional Mayor de San Marcos (UNMSM)
Dr. Victor Meza, Universidad Nacional Agraria La Molina (UNALM)
13:00 - 14:00 Lunch
14:00 - 14:45 Keynote Conference of Intellectual Property **"Patents: management and administration in biotechnological products"**
Mg. Stephany Soto
MERTZ, Peru
14:45 - 16:00 **Oral Presentations:**
Agricultural and Animal Biotechnology, Auxiliary Room 1
Industrial and Environmental Biotechnology, Main Auditorium
Molecular Tools Applied to Biotechnology, Auxiliary Room 3



I Congreso Internacional de Biotecnología e Innovación (ICBI)

16:00 - 16:20 Coffee break
16:20 - 18:10 **Oral Presentations:**
Agricultural and Animal Biotechnology, Auxiliary Room 1
Industrial and Environmental Biotechnology, Main Auditorium
Molecular Tools Applied to Biotechnology, Auxiliary Room 3

Wednesday, July 11

Section III: Molecular Tools Applied to Biotechnology

09:30 - 10:15 Keynote Conference **"New tools for multiplexed immunofluorescence: More colors and more dimensions, faster and easier"**
Dr. Stephen Kron
University of Chicago (UCHI), USA

10:15 - 10:45 **"Gene edition & yeasts"**
Dr. John Wyrick
Washington State University (WSU), USA

10:45 - 11:05 Coffee break

11:05 - 11:35 **"Characterization of (Meta)genomes structure and dynamics using high-throughput chromosome conformation capture data"**
Dr. Martial Marbouty
Centre National de la Recherche Scientifique (CNRS), France

11:35 - 12:05 **"Utilization of CRISPR-Cas9 for elucidating secondary metabolism in filamentous fungi"**
Dr. Jakob Blaesbjerg
Technical University of Denmark (DTU), Denmark

12:05 - 12:35 Keynote Conference **"Whole genome sequencing in genetic medicine"**
Dr. Elizabeth McNally
Northwestern University (NU), USA

12:35 - 13:40 Lunch

13:40 - 14:10 **"Correlative microscopy AFM-RAMAN in biological applications"**
Dr. Fernando Vargas
WITec, Germany

14:10 - 14:40 **"Enzymatic degradation of pesticides, Degradación enzimática de pesticidas: from microbiology to nanotechnology"**
Dr. Rafael Vázquez-Duhalt
Universidad Nacional Autónoma de México (UNAM), Mexico

14:40 - 15:40 Round Table: **Current situation and perspectives of the use of molecular tools applied to Biotechnology in Peru**
Dr. Mirko Zimic, Universidad Peruana Cayetano Heredia (UPCH)
Dra. Fanny Casado, Pontificia Universidad Católica del Perú (PUCP)
Dr. Alfredo Ibáñez, Pontificia Universidad Católica del Perú (PUCP)



I Congreso Internacional de Biotecnología e Innovación (ICBI)

15:40 - 16:10 **"Single nucleic molecule real-time sequencing (SMRT) to characterize specific transcripts and alleles of alternative mRNA splicing"**
Dr. Abel Ponce de León
University of Minnesota (UMN), USA

16:10 - 16:25 Coffee break

Section IV: Innovation in Biotechnology

16:25 - 17:05 Keynote Conference **"The interface research and commercial production of entomopathogenic fungi for the biological control of pests"**
Dr. Marcelo da Costa
Universidade Tiradentes (UNIT), Brazil

17:05 - 17:35 **"Development of molecular tools by in vitro evolution technologies"**
Dr. Pohl Milón
Biodynamols, Peru

17:35 - 18:35 **Official posters exhibition***
External environment
Agricultural and Animal Biotechnology (BAA)
Industrial and Environmental Biotechnology (BIA)
Molecular Tools Applied to Biotechnology (HMB)
* Posters can be displayed from the first day of the Congress

Thursday, July 12

Section IV: Innovation in Biotechnology

09:00 - 09:45 Keynote Conference **"Platforms for biosimilars production"**
Dr. Irina Mathov
Sartorius, Argentina

09:45 - 10:15 **"Strategies for the diagnosis and prevention of avian diseases through biotechnological tools"**
Dr. Manolo Fernández
Farvet, Peru

10:15 - 10:45 **"Scale up and optimization of bio-processes"**
Dr. Edgar Javier Arias Ramirez
Eppendorf, USA

10:45 - 11:15 **"Use of NGS and genomic indicators to certify aquaculture origin of fan shells"**
Dr. Mónica Santa María
BioAl, Peru

11:15 - 11:30 Coffee break



I Congreso Internacional de Biotecnología e Innovación (ICBI)

11:30 - 12:00 **"Application of enzymatic processes for the use of by-products of the fishing industry"**
Mg. Fernando Miranda del Solar
Austral Group S.A., Peru

12:00 - 12:30 **"Current applications of molecular markers: an opportunity for the development of knowledge and technologies in local genetic resources"**
Dr. Luis Eduardo Morillo
Instituto Nacional de Investigaciones Agropecuarias (INIAP), Ecuador

12:30 - 13:15 **"Advancing with confidence steps within protein separation processes"**
Dr. Carlos Bravo
BioRad

13:15 - 14:15 Lunch

14:15 - 15:00 **"A purification strategy for clinical grade monoclonal antibodies using hydrophobic cation exchange chromatography"**
Dr. Erik Victor Verona
BioRad

15:00 - 15:30 **"Obtaining chitin biopolymers from enzymatic microbial hydrolysis of shrimp residues"**
Dra. Susana Sirvas
Instituto Tecnológico de la Producción (ITP), Peru

15:30 - 16:00 **"Viruses in banana crops in Peru and use of IC-PCR in a participatory strategy for the production of quality seeds"**
Mg. Jorge Tenorio
Universidad Privada Telesup, Peru

16:00 - 16:30 **"Omics technologies for the study of plant-associated microbiome"**
Biol. Carlos Enrique Condemarin
Biotecoop, Peru

16:30 - 17:00 **"Industrial cultivation of spirulina: the I + D role"**
Biol. Biotech. Gregory Guerra
Alimenta Algae, Peru

17:00 - 17:30 Round Table: **Current situation and perspectives of biotechnological innovation in Peru**
Dr. Pohl Milón, Biodynamols
Mg. Gonzalo Villarín Córdova, Instituto Tecnológico del Perú (ITP)
Mg. Erich Inguil, Innóvate Perú

17:30 - 18:00 Closing Ceremony
Awards to the best works
Closing toast
Closing Dinner

APPENDIX 2


 I Congreso Internacional
de Biología e
innovación (ICBI)

 PROGRAMA DE PRESENTACIONES ORALES
Martes 10 de Julio 14:45-19:30 hrs

Sección I: Biotecnología Agrícola y Animal

Lugar: Sala Auxiliar 1– Auditorio Principal de la UNALM

| Horario | Expositor | Código | Título |
|---------------|---------------------------------|--------|--|
| 14:45 – 15:00 | Fredy Fabian Domínguez | OBAA02 | Metagenomic characterization of the intestinal microbiome and feces of the piglet (<i>Sus scrofa</i>) and probiotic evaluation of lactic acid strains identified molecularly |
| 15:00 – 15:15 | German De La Cruz | OBAA03 | Potato Genes Candidates for Resistance to <i>Globodera pallida</i> , identified with ARNseq in the radicular transcriptome |
| 15:15 – 15:30 | Joao Adhemir De Souza Pacheco | OBAA04 | Viruses detection in arracacha (<i>Arracacia xanthorrhiza</i>) using Next Generation Sequencing |
| 15:30 – 15:45 | Karina Zapata Vidaurre | OBAA05 | Molecular identification of the microbiota associated with blood and gonads of the brown shell <i>Anadara tuberculosa</i> |
| 15:45 – 16:00 | Oscar Gómez Quispe | OBAA06 | Time of conservation under refrigeration of gelified semen of alpaca (<i>Vicugna pacos</i>) |
| 16:00 – 16:45 | Ana Luz Nolberto Sucahuamani | OBAA07 | GC-MS analysis of Sanky (<i>Corryocactus brevistylus</i> BRITTON & ROSE), a endemic cactus from Peru. |
| 16:15 – 16:30 | Victor Carhuapoma De la Cruz | OBAA08 | Antibiotic resistance of <i>Salmonella</i> sp, <i>Escherichia coli</i> in babies of alpacas (<i>Vicugna pacos</i>) with and without enteropathies diarrheal |
| 16:30 – 16:45 | Joselyn Marilyn Zavala Arellano | OBAA09 | Isolation and molecular characterization of sulphate-oxidant bacteria present in the blood of the bivalve mollusk <i>Anadara tuberculosa</i> (Sowerby 1833) "black shell" |
| 16:45 – 17:00 | Yoel Zegarra Bermúdez | OBAA14 | Preliminary results on implementation of CRISPR/Cas9 system for WSSV receptor-directed mutagenesis in <i>Litopenaeus vannamei</i> shrimp spermatids |
| 17:00 – 17:15 | Juan Pauro Roque | OBAA48 | Effect of the inoculation of quinoa-promoting bacteria in controlled conditions isolated from Peruvian highland soils |


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| Horario | Expositor | Código | Título |
|---------------|-------------------------------|--------|--|
| 17:15 – 17:30 | Lourdes Vásquez Rojas | OBAA54 | Genomic and proteomic identification of lactic acid bacteria isolated from the feces of the sajino (<i>Pecari tajacu</i>) and metagenomic characterization |
| 17:30 – 17:45 | Félix Terán Hilares | OBAA63 | Metabolic Profile of avocado (<i>Persea americana</i>) cv. Hass at physiological maturity from two harvest seasons |
| 17:45 – 18:00 | Karla Lucía Álvarez Fernández | OBAA66 | Evaluation of the Newcastle Disease Virus–Specific T Cell Proliferation in Vaccinated Chickens |
| 18:00 – 18:15 | Nataly Taco | OBAA98 | Response to the inoculation of Andean Tarwi with strains of <i>Bradyrhizobium</i> isolated from a wild lupine |

Sección II: Biotecnología Industrial y Ambiental

Lugar: Auditorio Principal de la UNALM

| Horario | Expositor | Código | Título |
|---------------|---------------------------------|--------|---|
| 14:45 – 15:00 | Rosita Castillo Rogel | OBIA15 | Culture-dependent and independent analysis of bacterial community of an area contaminated and no contaminated with petroleum in Nieva, Amazonas |
| 15:00 – 15:15 | Augusto Castillo Calderón | OBIA16 | Optimization of the environmental parameters of the fermentation of <i>Kluyveromyces marxianus</i> NRRL-Y-7571 for the production of inulinase |
| 15:15 – 15:30 | Emilio Fredy Yábar Villanueva | OBIA17 | Evaluation of physicochemical and microbiological characteristics of tocosh during fermentation |
| 15:30 – 15:45 | Matías Araya | OBIA18 | Physicochemical characterization and application of biochar as copper bioadsorbent generated from the kelp <i>Macrocystis pyrifera</i> |
| 15:45 – 16:00 | Santiago Justo Arévalo | OBIA19 | Studies on the Microbial Degradation of Cyanide. A Functional, Structural, and Bioinformatic approach. |
| 16:00 – 16:45 | Verónica Edith Liza Trujillo | OBIA20 | 16S rRNA Next Generation Sequencing analysis shows microbial community associated with the generation of acid mine drainage in a gold mine, Peru. |
| 16:15 – 16:30 | Victor Hugo Sarmiento Casavilca | OBIA21 | Evaluation of a bioremediation system for heavy metals based in fungal biomass from Santuario Nacional del Ampay |


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| Horario | Expositor | Código | Título |
|---------------|--------------------------------|--------|---|
| 16:30 – 16:45 | Carlos Enrique Cubas Zúñiga | OBIA23 | Proteomic analysis of the cyanotrophic strain <i>Alcaligenes faecalis</i> after its exposure to cyanide by MALDI TOF / TOF |
| 16:45 – 17:00 | Francis More Calero | OBIA24 | Genomic and proteomic characterization of native coastal bacteria degrading petroleum hydrocarbons |
| 17:00 – 17:15 | Susan Sofia Flores Calla | OBIA51 | Evaluation of <i>Chenopodium album</i> L. (Lichea) phytoremediation capacity in contaminated water with lead and cadmium |
| 17:15 – 17:30 | Ariadna Zatoryi Zúñiga Llanos | OBIA57 | Biotechnological treatment for the de-inking of printed office paper with thermostable enzymes from <i>Geobacillus thermoparaffinivorans</i> CB-13 |
| 17:30 – 17:45 | Roberto Castellanos Cabrera | OBIA58 | Bioprospecting of thermophilic bacteria for the biotechnological production of thermostable enzymes |
| 17:45 – 18:00 | Maribel Marleny Ángeles Llanos | OBIA68 | Bioremediation of organic effluents from the food industry, through a mixed system composed of a uasb bioreactor packed with anaerobic bacteria and an airlift bioreactor packed with filamentous fungi |
| 18:00 – 18:15 | Mirko David Lino Navarro | OBIA69 | Biodegradation of petroleum hydrocarbons using undefined microbial ecosystems in submerged systems, evaluation by means of a Factorial design |
| 18:15 – 18:30 | Carmen Tamariz Ángeles | OBIA70 | Identification of cellulolytic and xylanolytic thermotolerant bacteria from Chancos hot spring and their ability to degrade agriculture waste |
| 18:30 – 18:45 | Jimmy Capia López | OBIA80 | Evaluation of the Hydraulic Residence Time in a MBBR bioreactor for the treatment of effluents from the tanning industry |
| 18:45 – 19:00 | Hugo Jiménez | OBIA83 | Evaluation of mine tailings as a source of sustainable energy through Microbial Fuel Cells |
| 19:00 – 19:15 | Leslie Velarde Apaza | OBIA88 | Tolerance of lignolytic basidiomycetes to chlorpyrifos and metamidophos in conditions in vitro |
| 19:15 – 19:30 | Norma Gamarra | OBIA97 | Identification and characterization of cellulases from <i>Aspergillus niger</i> ATCC-1064 obtained in three fermentation systems |


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| Horario | Expositor | Código | Título |
|--------------|---------------|--------|---|
| 19:30- 19:45 | Norma Gamarra | OBIA99 | Effect of cellulolytic action in the extraction of red drop chilli carotenoids (<i>Capsicum baccatum</i>), Oxapampa province – Peru |

Sección III: Herramientas Moleculares Aplicadas a la Biotecnología

Lugar: Sala Auxiliar 2– Auditorio Principal de la UNALM

| Horario | Expositor | Código | Título |
|---------------|---------------------------------|--------|---|
| 14:45 – 15:00 | María Fenanda Dávila Pulido | OHMB28 | Genetic diversity and population structure of <i>Persea Americana</i> Mill. at northwestern Mexico |
| 15:00 – 15:15 | Jesús Mireya Higuera Rubio | OHMB29 | Bioinformatic analysis of polyphenoloxidase coding genes in avocado (<i>Persea americana</i> Mill). |
| 15:15 – 15:30 | Rosalva Carolina Valdez Agramón | OHMB30 | Bioinformatic analysis of orthologs sequences to HMGR, VTE1 and VTE5 in avocado (<i>Persea americana</i>) genes |
| 15:30 – 15:45 | Juan Pablo Valenzuela Apodaca | OHMB31 | Identification of SNP molecular markers associated to grain yield, oil and protein content for the development of corn hybrids in México. |
| 15:45 – 16:00 | Elizabeth Paitán Anticona | OHMB40 | Influence of vaginal birth on the content of lactic acid bacteria with probiotic potential in meconium of human neonates |
| 16:00 – 16:45 | Mónica Criollo Joaquín | OHMB43 | Design and evaluation of DNA vaccines against the Tilapia Lake Virus (TiLV) in <i>Oreochromis niloticus</i> from Peru |
| 16:15 – 16:30 | Benoit Diringer | OHMB44 | OMICs; applications in pathogen diagnostic of aquatic species cultivated in Peru. |
| 16:30 – 16:45 | Wilfredo Evangelista Falcón | OHMB56 | Difference in Long Range Communication of the Second PDZ domain of Protein Tyrosine Phosphatase |
| 16:45 – 17:00 | Diana Paola López Velandia | OHMB60 | Metagenomic analysis of genes that code for the phenotype of resistance to beta-lactam antibiotics in a Colombian natural park |
| 17:00 – 17:15 | José Miguel Carpio Carpio | OHMB71 | Specific allele PCR and RFLP as molecular techniques for the diagnosis of anticonvulsant resistance in epileptic patients |
| 17:15 – 17:30 | Gladys Ccahuantico | OHMB93 | Grupos bacterianos asociados a la descomposición microbiana de anchoveta peruana (<i>Engraulis ringens</i>) identificados por metagenómica dirigida al gen 16S rRNA |

Sección I: Biotecnología Agrícola y Animal

| Expositor | Código | Título |
|-----------------------------------|---------|---|
| Gean Ciprian Salcedo | PBAA010 | Quantitative variation of characters associated to ploidy level in androgenic plants of aguaymanto (<i>Physalis peruviana</i> L.) |
| Damaris Esquén Bayona | PBAA011 | Analysis of genetic variability of Suri populations (<i>Pteronemina pennata</i>) in three rescue centers from Puno and Lambayeque using microsatellite markers |
| Susan Linares Huapaya | PBAA012 | Identification of reference genes from RNA-seq data in <i>Lupinus mutabilis</i> Sweet |
| Natalí Ríos Castro | PBAA013 | Molecular characterization of bacteria associated with the microalgae <i>Isochrysis galbana</i> and <i>Chaetoceros gracilis</i> , used in the culture of the mollusk <i>Argopecten purpuratus</i> |
| Rosalinda Arévalo Pinedo | PBAA049 | Fertilization of Pijuayo with Esgoto Sludge and Potentially Toxic elements in the edible part |
| Jean Piere Quilche Duran | PBAA050 | Mutagenesis at the N-terminal end of the Cry1Ab toxin of <i>Bacillus thuringiensis</i> var. Kurstaki |
| Carlos Eduardo Villanueva Aguilar | PBAA062 | "In vitro" culture of meristems of four varieties of <i>Dianthus caryophyllus</i> L. "standard carnation" |
| Jesús Martín Guerra López | PBAA064 | Optimization of culture medium for the production of biomass of <i>Avibacterium paragallinarum</i> |
| Jhakelin Gloria Reyes Vasquez | PBAA067 | Post-thawing quality of spermatogonial stem cells (SSC) of alpaca (<i>Vicugna pacos</i>) proliferated <i>in vitro</i> |
| Ricardo Montesinos | PBAA072 | Development of downstream purification processes of recombinant glycoprotein G obtained from insect cells: a proof of concept |
| Silvia Agüero Aguilar | PBAA094 | <i>Bradyrhizobium</i> sp. with high potential for phosphorus solubilization in <i>Lupinus ass ballianus</i> c.p Smith "jera" |

Sección II: Biotecnología Industrial y Ambiental

| Expositor | Código | Título |
|----------------------------------|---------|--|
| Corina Berrocal | PBIA022 | Potential application of commercial enzyme preparations for the production of isomaltooligosaccharides from maltose |
| Mayara Almeida Lustosa | PBIA026 | Isolation and Identification of Mangrove Bacteria Sediment with Potential Biodegradation of Petroleum |
| Francisco Castañeda | PBIA027 | Bioactive compounds from <i>Porphyra</i> CHF and <i>Pyropia orbicularis</i> during natural desiccation cycle |
| Joyce Mamani Hilasaca | PBIA041 | Chemical study of the seaweed <i>Caulerpa filiformis</i> (<i>chlorophyta</i>) as a potential source of bioactive principles |
| Diego Batista | PBIA042 | Synthesis of cellulose nanofibers from lignocellulosic materials from industrial waste |
| Andrea Cuba Portocarrero | PBIA045 | A fast and cost-effective methodology for Purification of cyanide-degrading enzyme from <i>Bacillus pumilus</i> |
| Miguel Montero Orozco | PBIA046 | A Cyanide Bacterial Biosensor based on Genomic editing of Cyn operon from <i>Bacillus pumilus</i> |
| Daladier Miguel Castillo Cotrina | PBIA047 | Bioelectricity from cellulolytic microbes in cell of microbial fuel |
| Luis David Pabón Rodríguez | PBIA052 | Phylogenetic and Sequence-based Analysis of Prokaryotic Cyanide Dihydratases (CynD) |
| Jorge A. López | PBIA053 | Prospecting of Mangrove Bacteria with Organochlorine Compound Remediation Potential |
| Judith Soledad Yangali Vicente | PBIA061 | Efficiency of biodegradation of ammonia by an isolated microbial consortium in a bioreactor type: Runoff filter |
| Daniela Thaís Zapata Sifuentes | PBIA065 | A low molecular weight protein induced as a function of cyanide concentration in a <i>Bacillus licheniformis</i> strain |
| Jessi Claudio Fonseca | PBIA074 | Design of a production medium with waste agroindustrials optimizing the capacity of mineralization of calcium by <i>Bacillus pseudofirmus</i> |
| David Tarazona Jurado | PBIA075 | Design of an artificial bioproduction microfluidic system for protein synthesis |
| Francesca Crevani | PBIA077 | Mixed culture of <i>Aspergillus niger</i> and <i>Trichoderma reesei</i> for the production of cellulases by Surface Adhesion Fermentation with Bolaina Blanca residues |

| Expositor | Código | Título |
|----------------------------|---------|---|
| María Zadhith Casuso Wong | PBIA079 | Influence of CO ₂ on the biomass production and total lipids accumulation in four Amazonian microalgae species |
| Raquel Álvarez | PBIA081 | Assesment of microbial diversity of the Rainbow Mountain in Pitumarca Peru: a preliminary report |
| Alonso Reyes | PBIA082 | Assesment of biomass in mixed fungal biofilm cultures of <i>Aspergillus niger</i> and <i>Trichoderma reesei</i> through quantification of genomic DNA content |
| Damaris Rebaza | PBIA084 | Identification of candidate genes neutral-alkaline cellulases from <i>Aspergillus fumigatus</i> LMB-35Aa |
| Brandon Gárate | PBIA085 | Screening of components for a cellulase production media for <i>Aspergillus fumigatus</i> in a deep-well plates as a submerged fermentation system |
| Paola Finetti | PBIA086 | Evaluation of different variables in the production of lignolytic enzymes from <i>Guazuma</i> sp. residues with <i>Trametes polyzona</i> LMB-TM5 |
| Liliana Rengifo | PBIA087 | Comparison of the production of coloured pigments by filamentous fungi in submerged fermentation and surface adhesion fermentation |
| Ana Belén Amaya | PBIA089 | Sodium Alginate from the kelps <i>Macrocystis pyrifera</i> , <i>Macrocystis integrifolia</i> and <i>Sargassum</i> sp. (<i>Phaeophyceae</i>) |
| Fernando Guerrero | PBIA090 | Cellulases production by <i>Trametes polyzona</i> on orange waste as substrate |
| Katherine García Luquillas | PBIA091 | Gene expression analysis of cellulases in mixed fungal biofilms of <i>Trichoderma reesei</i> and <i>Aspergillus niger</i> |
| Lorena Mendiuiña | PBIA092 | Production of fermentable sugars from lignocellulosic residues with <i>Aspergillus niger</i> |
| Meriyim Carrasco | PBIA095 | Obtaining bioethanol by enzymatic digestion of <i>Aspergillus niger</i> and <i>Bacillus subtilis</i> in sugarcane bagasse, malt bagasse and mixture of these, in fermentation systems with <i>Saccharomyces cerevisiae</i> and <i>Zymomonas mobilis</i> |
| Iliana Chang | PBIA096 | Cosmeceutical Potential and Biactive Compounds of Commercial Algal Extracts of PSW SA |

Sección III: Herramientas Moleculares Aplicadas a la Biotecnología

| Expositor | Código | Título |
|--------------------------------------|---------|--|
| Joshelin Huanca Juarez | PHMB032 | Plasmid library construction through <i>in vivo</i> cloning in the yeast <i>Saccharomyces cerevisiae</i> |
| Katherin Peñaranda | PHMB033 | Aptamer-based biosensors for the direct detection of infectious microorganisms |
| Luis Gutiérrez Mesias | PHMB034 | Genetic screening for proteins that confer resistance to UV radiation or oxidants in <i>Saccharomyces cerevisiae</i> |
| Omar Melo Calero | PHMB035 | Characterization of <i>Aedes aegypti</i> cultivable microbiota by tandem mass spectrometry proteotyping |
| Raquel Merino | PHMB036 | An <i>in vitro</i> assay to identify NAD ⁺ , FAD or CoA as components of the capping structures of RNA |
| Sandy Mansilla | PHMB037 | Comparison of the photoprotective effects of commercial sunscreens using yeast cells survivability to UV irradiation |
| Victor Zegarra | PHMB038 | Identification of small peptides targeting pknG from <i>Mycobacterium tuberculosis</i> by structural and combinatorial biology approaches |
| Ana Elena Sánchez | PHMB039 | Aptamers as inhibitors of bacterial protein synthesis |
| Cristian Bustamante | PHMB055 | Genetic diversity and structure of creole goat <i>Capra hircus</i> from Lima and Piura using microsatellites |
| Michella Alessandra Brescia Reátegui | PHMB073 | <i>In silico</i> analysis of P344R mutation in SLC17A5 explain defects in lysosomal transport of sialic acid |
| Segundo Levi Estela Moreno | PHMB076 | Influence of nitrate in the expression levels of the Acetyl CoA Carboxylase gene and total lipids production in oleaginous microalgae from the Peruvian Amazon |
| Joel Flores | PHMB078 | Advances in the selection of Frost Tolerant Genotypes in Peruvian potato landraces (<i>Solanum</i> sp.) |

APPENDIX 3

Welcome to the First International Congress of Biotechnology and Innovation, July 9 - 12, 2018

by Gretty K. Villena, President of ICBi

Dear colleagues, young researchers and students

It is an honor for us to welcome you to the I International Congress of Biotechnology and Innovation, ICBi 2018, organized by the National Agrarian University La Molina (UNALM) and the Laboratory of Mycology and Biotechnology "Marcel Gutiérrez-Correa" (LMB).

As a country, in recent years Peru has experienced positive economic changes, further development and the first efforts to boost scientific research and innovation begin to be noticed. Certainly, the investment in Science and Technology is not yet comparable with that of other Latin American countries. However, we are aware that as researchers we also have a social and moral commitment to the scientific and economic development of the country. Many young scientists have returned to the country and many others have been trained here, and the expectations for contributing effectively to the country are enormous. The research carried out in recent years in the country is translating into innovations and ventures. We must not stop this initial advance.

As a University, we have managed to prioritize research efforts and improve installed capacity and infrastructure in Biotechnology. Nowadays, UNALM has modern Biotechnology Laboratories and this gives us a unique opportunity to join efforts in developing basic and applied Biotechnology research as development instruments and effective contribution to the productive sector.

In this context, following the example and joining the efforts of our professors and mentors, we have decided to organize the First edition of the International Congress of Biotechnology and Innovation, ICBi 2018. It is time to promote Biotechnology and Innovation in Peru, it is time to promote more strongly the interaction between researchers and innovators in Latin America and other countries of the world.

It is time to encourage new generations of researchers and students to be actively involved in the different areas of biotechnology.

Also, it is a very special occasion to, through this event, pay tribute to who was a tireless researcher and promoter of Biotechnology in Peru, Dr. Marcel Gutiérrez Correa, professor at UNALM. We are motivated by the next inauguration of the new building of the Laboratory of Mycology and Biotechnology that he founded, and that he could not see concluded. The LMB will be named after him and will be our best legacy.

The scientific program of ICBi 2018 is organized in conferences in the sections of Agricultural and Animal Biotechnology, Industrial and Environmental Biotechnology as well as the section of Molecular Tools used in Biotechnology. We have also included the innovation section to publicize the experiences of technological development in biotechnology in the region.

The organization of this event could not be possible without the support of committed people and institutions. We appreciate the academic sponsorship of UNALM, the Vice-Rectorate for Research and the Faculty of Science of UNALM. CONCYTEC and Innovate who help us with networking the ICBi 2018.

To the Peruvian Society of Biochemistry and Molecular Biology for their support in the Scientific Committee.

To the Revista Peruana de Biología, for the academic support and endorsement in the edition and publication of the Book of abstracts of the Congress.



Welcoming words from the President of Organizing Committee Dr. Gretty Villena

To the companies that have supported us to make this effort viable.

I personally thank the Organizing Committee, the Vice President and the Secretary of the Organizing Committee of the ICBi 2018 and the Support Committee for their commitment and unwavering effort in organizing this event.

To our Latin American and foreign guests, we will have the pleasure of receiving you in our historic capital, surrounded by archeological sites, with its colonial architecture declared a World Heritage Site by UNESCO, and its very well recognized gastronomy.

Thank you very much to all of you for the effort in preparing your lectures, posters and oral presentations and for making this event a reality.

Finally, we hope that this initiative will be replicated in our country or abroad and that ICBi 2021 is a reality. We will work hard on that goal.

Thank you

Gretty K. Villena, Ph.D

President, ICBi 2018

Lima, Peru

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