



XLV ANNUAL MEETING

Chilean Society for Biochemistry and Molecular Biology





XLV ANNUAL MEETING

**CHILEAN SOCIETY FOR BIOCHEMISTRY AND
MOLECULAR BIOLOGY**

November 22nd-25th, 2022



**XLV ANNUAL MEETING CHILEAN SOCIETY FOR BIOCHEMISTRY AND
MOLECULAR BIOLOGY**

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Schedule


XLV ANNUAL MEETING 2022 SBBMCH

	Tuesday 22	Wednesday 23	Thursday 24	Friday 25
09:00-09:30		Oswaldo Cori Lecture Dr. Martin Montecino "Epigenetic control of gene transcription during cell lineage commitment"	Severo Ochoa Lecture Dr. Manuel Collado "Cell senescence in development, regeneration and cancer"	
09:30-10:00				
10:00-10:30		Coffee	Coffee	
10:30-11:00	Registration	Symposium 3 "Plant Defense"	Symposium 4 "DNA viruses and cancer: Signaling pathways involved in cancer progression"	SBBM Members Meeting
11:00-11:30				
11:30-12:00				
12:00-12:30	Poster's set-up			
12:30-13:00		Technical Talk Meristem	Technical Talk TCL	
13:00-13:30	Lunch			
13:30-14:00	Lunch			
14:00-14:30	Lunch			
14:30-15:00	Symposium 1 "Yeast functional genomics"	Symposium 2 "Unveiling the complex world of RNA"	Free time	
15:00-15:30			Symposium 5 "Chaos, panic and (dis)order in protein evolution"	Symposium 6 "New insights in non-coding RNAs in prokaryotic and eukaryotic cells"
15:30-16:00				
16:00-16:30			Oral Session 1 "Biomedicine and cell signalling"	Oral Session 2 "Computational Biology/Bioinformatics/Enzymes/Metabolism"
16:30-17:00	Technical Talk ThermoFisher			
17:00-17:30	Coffee		Coffee	
17:30-18:00	Poster session Even numbers			New members Session
18:00-18:30		Coffee		
18:30-19:00		Poster session Odd numbers		
19:00-19:30				
19:30-20:00	Opening Lecture Dr. Irina Artsimovitch "Running from the law: how to evade the genome sentinel Rho during stress"			
20:00-20:30			SBBMCH Awards Hermann Niemyer Medal Tito Ureta Award	
20:30-22:00	Dinner		Closing Dinner & Gathering	

PROGRAM

Tuesday, November 22nd

 **10:30 – 12:00 Registration at Terraza Las Pircas**

 **13:00 – 14:30 Lunch**

 **14:30 – 16:30 SYMPOSIA 1-2**

SYMPOSIUM 1

“Yeast functional genomics”

Chair: Francisco Salinas

Room: MADRESELVA

The fitness landscape of telomere variation

Gianni Liti, Université Côte d'Azur, CNRS, INSERM, IRCAN Nice, France

Deciphering the molecular bases of wort adaptation in novel lager yeast hybrids

Jennifer Molinet, Laboratorio de Genética Molecular, Departamento de Biología, Facultad de Química y Biología, Universidad de Santiago de Chile, Santiago, Chile

A cohesive panel of 142 telomere-to-telomere genome assemblies unfolds the structural genetic diversity at the species-scale in *Saccharomyces cerevisiae*

Gilles Fischer, Sorbonne Université, Francia

The metabolic and genomic making of yeast biodiversity

Chris Todd Hittinger, Laboratory of Genetics, DOE Great Lakes Bioenergy Research Center, Center for Genomic Science Innovation, J. F. Crow Institute for the Study of Evolution, Wisconsin Energy Institute, University of Wisconsin-Madison, Madison, WI, USA

SYMPOSIUM 2

“Unveiling the complex world of RNA”

Chair: Marcelo López-Lastra

Room: PLENARY ROOM

Evaluation of the impact of m6A methylation on RNA structure

Bruno Sargueil, Université Paris Cité, CNRS, Paris, France

Modified RNAs as Molecular Tools for Structural and Functional Studies of aminoacyl transferases and methyltransferases enzymes

Mélanie Etheve-Quellejeu, Laboratoire de Chimie et Biochimie Pharmacologiques et Toxicologiques, Université Paris Cité, Paris, France

Mechanochemistry of the HIV-1 reverse transcriptase on an RNA substrate, one molecule at a time

Andrés Bustamante, Laboratorio de Virología Molecular y Celular, Instituto de Ciencias Biomédicas, Facultad de Medicina, Universidad de Chile, Santiago, Chile

Regulation of retroviral non-canonical messenger RNA translation by RNA-binding proteins

Marcelo López-Lastra, Laboratorio de Virología Molecular, Departamento de Enfermedades Infecciosas e Inmunología Pediátrica, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

 **16:30 – 17:00 Technical talk**

Chair: Julio Tapia

Room: PLENARY ROOM

ThermoFisher – Biopsia líquida por PCR Digital, investigación en Cáncer. Daniel Acevedo

 **17:30 – 19:30 POSTER SESSION EVEN NUMBERS**

Rooms: HORNO DE BARRO & CUARZO

Posters number: 2-94

 **19:00 Welcome Ceremony**
SBBMCh Directory


 **19:35 – 20:30 OPENING LECTURE**

Chair: César A. Ramírez-Sarmiento

Room: PLENARY ROOM

“Running from the law: how to evade the genome sentinel Rho during stress”

Irina Artsimovitch, Department of Microbiology and The Center for RNA Biology, The Ohio State University, Columbus, Ohio, USA

 **20:30 – 22:00 Dinner**

Wednesday, November 23th



09:00 – 10:00 OSVALDO CORI LECTURE

Chair: Roxana Pincheira

Room: PLENARY ROOM

“Epigenetic control of gene transcription during cell lineage commitment”

Martin Montecino, Institute of Biomedical Sciences and Millennium Institute Center for Genome Regulation CRG, Faculty of Medicine and Faculty of Life Sciences, Universidad Andres Bello, Santiago, Chile



10:30 – 12:30 SYMPOSIA 3-4

SYMPOSIUM 3

“Plant Defense”

Chair: Lorena Pizarro

Room: PLENARY ROOM

Uncovering new roles for cytokinin in plant immunity

Maya Bar, Department of Plant Pathology and Weed Research, Plant Protection Institute, Agricultural Research Organization, Volcani Institute, Rishon LeZion, Israel

Incidence of bacterial canker in sweet cherry orchards of the O'Higgins Region of Chile: Varietal susceptibility and genetic characteristics of the causal agent

Boris Sagredo, Centro Regional Rayentué, Instituto de Investigaciones Agropecuarias (INIA), Rengo, Chile

Identification of defense-responsive genes in sweet cherry against Pss strains with different virulence levels

Alan Zamorano, Laboratorio de Fitovirología, Departamento de Sanidad Vegetal, Facultad de Ciencias Agronómicas, Universidad de Chile, Santiago, Chile

Involvement of the cell wall and its dynamic in plant defense against aphids

María Francisca Blanco-Herrera, Centro de Biotecnología Vegetal, Facultad de Ciencias de la Vida, Universidad Andres Bello, Santiago, Chile

SYMPOSIUM 4

“DNA viruses and cancer: signaling pathways involved in cancer progression”

Chair: Francisco Aguayo

Room: MADRESELVA

Regulation of extracellular matrix components during human papillomaviruses mediated carcinogenesis

Enrique Boccardo Pierulivo, Laboratory of Oncovirology, Department of Microbiology, Instituto de Ciencias Biomédicas, Universidade de São Paulo, São Paulo, Brazil

High-risk human papillomavirus (HR-HPV) and Epstein Barr virus (EBV) co-presence in oral cancer

Julio Cesar Osorio Patiño, Universidad del Valle, Cali, Colombia

Crosstalk between persistent viruses and tobacco smoke in carcinogenesis

Francisco Aguayo González, Laboratory of Oncovirology, Virology Program, Institute of Biomedical Sciences, Faculty of Medicine, Universidad de Chile, Santiago, Chile

Molecular pathways altered by early expressed proteins from Human Papillomavirus


Marcela Lizano Soberón, Unit of Biomedical Research in Cancer, Instituto Nacional de Cancerología and Biomedical Research Institute, Universidad Nacional Autónoma de México

 **12:30 – 13:00 Technical talk**

Chair: Simón Ruiz

Room: PLENARY ROOM

Meristem – *In vivo* editing in Fruit trees: Developing tools for Mandarin and Cherry. Ignacia Fuentes

 **13:00 – 14:30 Lunch**

 **16:00 – 18:00 ORAL SESSION 1 – 2**

ORAL SESSION 1

“Biomedicine and cell signalling”

Chair: Valentina González and Ariel Castro

Room: PLENARY ROOM

 **16:00 – 16:15**

***In silico* and *in vitro* determination of the estrogenic metabolic pathways that controls the hPASC pulmonary hypertensive pathologic phenotype**

Emanuel Guajardo-Correa, Juan Francisco Silva-Agüero, Gerardo García Rivas, Mario Chiong Lay, Mauricio Latorre Mora, Valentina Parra Ortiz



16:15 – 16:30

HDAC6 inhibition decreases STAT3 hyperactivation in colorectal cancer cells

Constanza Mardones, Marisol Armijo, Fernando Rivas, Matias Hepp



16:30 – 16:45

Histatin-1, a pro-angiogenic factor that promotes endothelial cell migration via VEGFR2

Carlos Mateluna, Pedro Torres, Patricio Silva, Marcelo Rodríguez, Douglas Matthies, Floris Bikker, Christian Wilson, Gerald Zapata, **Vicente A. Torres**



16:45 – 17:00

The primary cilium is required for palmitic acid-induced inflammation in hypothalamic neurons

Catalina Kretschmar, María Paz Hernández-Cáceres, Daniel Peña-Oyarzún, Eugenia Morselli, Alfredo Criollo



17:00 – 17:15

Chilean colorectal cancer is characterized by a dysbiosis and the presence of *Fusobacterium nucleatum*

Roxana González-Stegmaier, Troy Ejsmentewicz, Roddy Jorquera, Rodrigo Lagos, María Cristina García, Celia Podestá, Carlos Barrientos, Franz Villarroel-Espíndola



17:15 – 17:30

Effect of Nordihydroguaiaretic acid (NDGA) on lung cancer cell viability

Emanuel Guajardo-Correa, **Mónica Salas**, Carina Chipón, Rodrigo López, Angara Zambrano

 **17:30 – 17:45**

The autophagy process as a modulator of senescence associated secretory phenotype in senescent gastric cancer cells

Claudio Valenzuela, Ángel Cayo, Whitney Venturini, Raúl Segovia, Danitza Rebolledo, Rodrigo Moore-Carrasco, Nelson Brown

 **17:45 – 18:00**

SALL2 expression in colon cancer progression and its association with the WNT/ β -catenin pathway

Aracelly Quiroz, Constanza Mardones, José Miguel Navarrete, Angela Ortíz, Paula Medina, Víctor Fica, Alexis Salas, Carolina Delgado, Ariel Castro, Roxana Pincheira

ORAL SESSION 2

“Computational Biology/Bioinformatics/Enzymes/Metabolism”


Chair: Victoria Guixé and Maximiliano Figueroa

Room: MADRESELVA

 **16:00 – 16:15**

LigRMSD: A web server for analyzing the quality of protein-ligand molecular docking results

Julio Caballero, José Luis Velázquez-Libera, Fabio Durán-Verdugo, Alejandro Valdés-Jiménez, Gabriel Núñez-Vivanco

 **16:15 – 16:30**

Design of inhibitory peptides based on molecular modeling of the interaction TRPM4-KCTD5

Javiera Baeza, Wendy Gonzalez, Oscar Cerda



16:30 – 16:45

Comprehensive re-analysis of hairpin RNAs in fungi shows ancestral links

Nathan R. Johnson, Luis F. Larrondo, José M. Alvarez, Elena A. Vidal



16:45 – 17:00

A workflow to compare ligand binding sites from molecular dynamics simulations

José Carlos Estanislao Márquez Montesinos, Yuliet Mazola Reyes, Wendy González Díaz



17:00 – 17:15

Rational design of peptide-based functional biomaterials to enhance molecular recognition

Horacio Poblete, Ariela Vergara-Jaque, Cristian Vilos



17:15 – 17:30

Analysis of the allosteric regulation by AMP in enzymes from methanogenic archaea

Felipe Gonzalez-Ordenes, Nicolas Herrera, Víctor Castro-Fernández, Victoria Guixé



17:30 – 17:45

Structural, functional characterization and engineering of PET hydrolases from polar marine environments

Aransa Griñen, Jerónimo Cifuentes-Anticevic, Paula Blázquez-Sánchez, Jhon A. Vargas, Adriano A. Furtado, Felipe Engelberger, Felipe Gatica, Humberto M. Pereira, Richard C. Garratt, Beatriz Díez, César A. Ramírez-Sarmiento

 **17:45 – 18:00**


Bioinformatic characterization of exoglycosidase lysosomal alpha-mannosidase involved in fruit ripening of *Fragaria x ananassa*

Angela Méndez-Yáñez, Luis Morales-Quintana

 **18:30 – 20:30 POSTER SESSION ODD NUMBERS**

Rooms: HORNO DE BARRO & CUARZO

Posters number: 1 – 95

 **20:30 – 22:00 Dinner**

Thursday, November 24th

 **09:00 – 10:00 SEVERO OCHOA LECTURE**

Chair: Clara Quiroga

Room: PLENARY ROOM

“Cell senescence in development, regeneration and cancer”
Manuel Collado, Laboratory of Cell Senescence, Cancer and Aging,
Health Research Institute of Santiago de Compostela, IDIS, Santiago de
Compostela, Spain

 **10:30 – 12:30 ORAL SESSION 3 – 4**

ORAL SESSION 3

“Gene Expression/Molecular Cell Biology”

Chair: Francisco Salinas and José Leonardo Gutiérrez

Room: MADRESELVA

 **10:30 – 10:45**

Implementing an optogenetic intercellular communication system in yeast

Vicente Rojas, Luis F. Larrondo

 **10:45 – 11:00**

Histone H3 demethylase KDM5A regulates key genes in early lineage commitment from human pluripotent stem cells to neural progenitors

Estefania Cardona, Christopher Fierro, Alejandro Blanco, Victor Pola, Brigitte van Zundert, Martin Montecino



11:00 – 11:15

Epigenetics effects of obesity in the neurons that regulate feeding behavior

Valentina Opazo, José Medina, Daniel Candia, Patricio Ordenes, Paula Llanos, María de los Ángeles García and **Estefanía Tarifeño-Saldivia**



11:15 – 11:30

BCL6: A novel transcription factor involved in cardiac hypertrophy revealed through human transcriptional regulatory networks

Juan Francisco Silva-Agüero, Victor Aliaga-Tobar, Ximena Calle, Jafet Ortiz-Quintero, Mauricio Latorre, Valentina Parra



11:30 – 11:45

The underlying regulatory circuit behind the diauxic lag-phase duration in *Saccharomyces eubayanus*

Felipe Muñoz-Guzmán, Pablo Quintrel, Tomas A. Peña, Francisco A. Cubillos



11:45 – 12:00

dTrmO is required for efficient ACT codon decoding and tissue-specific development in *D. melanogaster*


Deborah Cuper, Jorge Zúñiga-Hernández, Valentina Muñoz-Madrid, Francisca Brown, Álvaro Glavic



12:00 – 12:15

SUMO proteome during macrophage polarization

Alexei Cuevas, Michael Tatham, Ronald T. Hay, Alejandro Rojas-Fernandez

 **12:15 – 12:30**

Phytochrome A (DcPHYA) codes for a functional photoreceptor required for carotenoid synthesis in the carrot taproot grown underground

Rocío Quian, Fabiana Munizaga, Claudia Stange

ORAL SESSION 4

“Protein Structure/Function/Evolution/Molecular Cell Biology”

Chair: Mónica Salas and Nicole Tishler

Room: PLENARY ROOM

 **10:30 – 10:45**

Exploring the extent of casein kinase C-terminal tail as an autoregulatory domain in circadian mechanisms

José Costa, Felipe Guzmán, Luis Larrondo

 **10:45 – 11:00**


Determination of the hemocyanin structure from *Concholepas concholepas* using X-ray crystallography and Cryo-EM combined approach

Sebastián M. Muñoz, Michelle L. Salazar, Gabriel Vallejos, Augusto Manubens, Mathias N. Ellena, José Edwin N. Quesñay, Andre LB. Ambrosio, María Inés Becker, Víctor Castro-Fernández, Victoria Guixé

 **11:00 – 11:15**

Catalytic thermoadaptation in the ADP-dependent sugar kinase family is not driven by changes in the heat capacity of activation

Ignacio Aravena-Valenzuela, Pablo Maturana, Felipe González-Ordenes, Gabriel Vallejos-Baccheliere, Víctor Castro-Fernández, Victoria Guixé

 **11:15 – 11:30**

Lost in Translation: Interfering with the Folding of Nascent Pili Proteins

J Andrés Rivas Pardo, Tomás Herмосilla, Vicente Colarte, Ivana Orellana, Marcelo Jorquera

 **11:30 – 11:45**

How does one enzyme activity emerge and another disappear during the evolution of an enzyme family? Biochemical and evolutionary analysis of the ATP-dependent vitamin kinase family

Nicolás Fuentes-Ugarte, Myriam Pérez, Isaac Cortes, Gabriel Vallejos, Victoria Guixé, Víctor Castro-Fernández

 **11:45 – 12:00**


Coevolution-derived non-native contacts are key to correctly fold RfaH

Pablo Galaz-Davison, Diego U. Ferreiro, César A. Ramírez-Sarmiento

 **12:00 – 12:15**

Evolutionary trajectory of the AMP activation in ADP-dependent sugar kinases from methanogenic archaea

Sixto M. Herrera, Gabriel Vallejos, Víctor Castro-Fernández, Victoria Guixé

 **12:15 – 12:30**

A membrane fusion trigger for Halorubrum pleomorphic virus-6 in haloarchaeal cells


Eduardo A Bignon, Kevin R Chou, Elina Roine, Nicole D Tischler


 **16:30 – 17:00 Technical talk**

Chair: Rodrigo Maldonado

Room: PLENARY ROOM

TCL – MGI, una poderosa tecnología de secuenciación en Chile. Dra. Alejandra Serrano C.

 **13:00 – 14:30 Lunch**

 **14:30 – 17:00 SYMPOSIA 5-6**

SYMPOSIUM 5

“Chaos, panic and (dis)order in protein evolution”

Chair: César A. Ramírez-Sarmiento & Pablo Galaz-Davison

Room: PLENARY ROOM

Computational approaches to study protein-protein interactions regulating the expression and function of membrane proteins

Ariela Vergara, Center for Bioinformatics, Simulation and Modeling, Faculty of Engineering, Universidad de Talca, Talca, Chile

Alpaca-derived nanobody against viral infections

Naphak Modhiran, School of Chemistry and Molecular Biosciences, University of Queensland; Australian Institute for Bioengineering and Nanotechnology; Brisbane, Australia

Metamorphic proteins don't just wiggle wiggle, they (re)fold

César A. Ramírez-Sarmiento, Institute for Biological and Medical Engineering (IIBM), Pontificia Universidad Católica de Chile, Santiago, Chile

Conformational sampling with AlphaFold2 by phylogenetic amnesia

Matías R. Machado, Protein Engineering Unit, Institut Pasteur de Montevideo, Montevideo, Uruguay

FrustraEvo: Assessing protein families divergence in the light of sequence and energetic constraints

María Inés Freiburger, Protein Physiology Lab, Departamento de Química Biológica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires-CONICET-IQUIBICEN, Buenos Aires, Argentina

SYMPOSIUM 6

“New insights in non-coding RNAs in prokaryotic and eukaryotic cells”

Chair: Valentina Parra & Mauricio Latorre

Room: MADRESELVA

Computational tools for identifying and characterizing non-coding RNAs in prokaryotic and eukaryotic organisms

Raúl Arias-Carrasco, Programa Institucional de Fomento a la Investigación, Desarrollo e Innovación (PIDi), Universidad Tecnológica Metropolitana, Santiago, Chile

Non-coding RNA global transcriptional regulatory network activated by iron in *Enterococcus faecalis*

Victor Aliaga-Tobar, Bioengineering Laboratory, Institute of Engineering Sciences, Universidad de O'Higgins, Rancagua, Chile

Studying the non-coding transcriptome of endocrine pancreatic cells from zebrafish

Estefanía Tarifeño-Saldivia, Gene Expression and Regulation laboratory (GEaRLab), Departamento de Bioquímica y Biología Molecular, Facultad de Ciencias Biológicas, Universidad de Concepción, Chile

RNA at the Epicenter of Genetic Information: from epigenetic to epitranscriptomic regulation in development and cancer

Paulo P. Amaral, Insper Institute of Education and Research, Brazil

 **17:30 – 19:30 NEW MEMBERS SESSION**

Chair: Lorena Norambuena and Luis Morales-Quintana

Room: PLENARY ROOM

Mitochondrial Ca²⁺ overload in the neurodegeneration associated with early-onset familial Alzheimer's disease

Marioly Müller, Departamento de Tecnología Médica, Facultad de Medicina, Universidad de Chile, Santiago, Chile

Epigenetics effects of obesity in the neurons that regulate feeding behavior

Estefanía Tarifeño-Saldivia, Departamento de Bioquímica y Biología Molecular, Facultad de Ciencias Biológicas, Universidad de Concepción, Concepción, Chile

SYSTEMIX: Systems biology center for the study of extremophile communities from mining tailings

Mauricio Latorre, Universidad de O'Higgins, Rancagua, Chile

Evolution of enzyme regulation and the mechanistic drift hypothesis: The case of the activation by AMP in archaeal ADP-dependent Sugar Kinases

Gabriel Vallejos-Bacelliere, Laboratorio de Bioquímica y Biología Molecular, Departamento de Biología, Facultad de Ciencias, Universidad de Chile, Santiago, Chile

 **19:30 – 20:30 SBBMCH AWARDS**

Hermann Niemeyer Medal

Tito Ureta Award

Scientific Communication Awards: Oral and Poster

 **20:30 – 22:00 Closing dinner & Gathering**

POSTER EVEN NUMBERS SESSION
Tuesday, November 22nd

2) Sonic hedgehog (Shh) and Trefoil factor 3 (Tff3) are useful biomarkers to study precancerous lesions related to the gastric carcinogenesis

Francisca Vidal, Roxana González-Stegmaier, Karina Cereceda, Constanza Cárcamo, Celia Podestá, Carlos Barrientos, Franz Villarroel-Espíndola

4) Effect of palmitate and L-NAME on vascular smooth muscle cell viability and senescence

Javiera Martínez, Fernanda Sanhueza, Mario Chiong

6) Quantitative Proteomic analysis of SUMO modification rearrangements upon starvation: An unknown role for SUMO

Yorka Cheuquemilla, Hector Mancilla, Michael Tatham, Triim Tammsalu, Ronald T. Hay, Alejandro Rojas-Fernandez

8) Standardization of a female murine model of heart failure with preserved ejection fraction with different L-NAME doses

Anita Tapia, Claudia Muñoz, María Paz Ocaranza, Clara Quiroga, Sergio Lavandero, Hugo Verdejo, Pablo F. Castro

10) Construction of bacterial display Nanobody Libraries using the uLoop system

Bárbara Kunstmann, Niklas Schomisch, Fernán Federicci, Guillermo Valenzuela-Nieto, Alejandro Rojas

12) An alpaca-derived nanobody protects from lethal Beta and Omicron SARS-CoV-2 infection

Guillermo Valenzuela Nieto, Naphak Modhiran, Simon Malte Lauer, Alberto A Amarilla, Peter Hewins, Sara Irene Lopes van den Broek, Yu Shang Low, Nazia Thakur, Benjamin Liang, James Jng, Devina Paramitha, Ariel Isaacs, Julian de Sng, David Song, Jesper Tranekjær Jørgensen, Yorka Cheuquemilla, Jörg Bürger, Ida Vang Andersen, Johanna Himelreichs, Christian Spahn, Ronald Jara, Thorsten Mielke, Ronan Macloughlin, Zaray Miranda-Chacon, Pedro Chana-Cuevas, Vasko Kramer, Alexander Khromykh, Martina Jones, Keith Chappell, Dalan Bailey, Andreas Kjaer, Matthias Manfred Herth, Jurado Ann Kellie, David Schwefel, Daniel Watterson, Alejandro Rojas-Fernandez

14) Search of new sex-related biomarkers to study cardiac hypertrophy: A bioinformatic approach

Jose Miguel Ulloa, Matias Guerra, Ingrid Oyarzún, Georthan Mancilla, Pablo Castro, Hugo Verdejo, Clara Quiroga

16) Glutamate receptor-like proteins involvement in stimulus-specific electrical signaling in the moss *Physcomitrella patens*

Oscar Arrey-Salas, Alex San Martín-Davison, Mónica Yáñez, Claudio C Ramírez, Erwan Michard

18) Assessment of the methylation index in *Arabidopsis thaliana*

Álvaro Miquel, Hernán, Salinas, Ricardo Yusta, Ariel Orellana

20) Natural Compounds with an agonist and antagonist role in potassium channels

Marcelo Ibañez, Javiera Baeza, David Ramírez, Wendy González

22) Identification of common structural patterns of PLpro from SARS-CoV and SARS-CoV2 relevant for binding inhibitors by using molecular dynamics simulations

Claudio Illanes, Julio Caballero, José Luis Velázquez-Libera, Luis Castillo

24) New protocols to model protein flexibility and identify correct ligand binding poses in in silico docking experiments

Sergio Alfaro, Francisco Adasme, Jose Luis Velazquez, Fabian Gonzalez y Julio Caballero

26) Binding site comparison from $K_v1.5$ and $Na_v1.5$ cardiac ion channels: a computational study with flecainide and AVE0118 antiarrhythmic drugs

Yuliet Mazola Reyes, José C.E. Márquez Montesinos, Wendy González Díaz

28) Docking and Molecular Dynamics Simulations studies of the most abundant toxin of the Blue Scorpion on Nav1.5 ion channel

Erbio Díaz, Wendy González, Vladimir Yarov-Yarovoy

30) Application of bacterial and fungal MAMPs induces Pattern Triggered Immunity in *Prunus persica*

Uri Aceituno-Valenzuela, Daniela Muñoz, Meirav Leibman-Markus, Maya Bar, Adi Avni and Lorena Pizarro

32) Co-occurrence Interaction Networks of Bacterial Species Between Two Different Sectors of a Copper Tailings Mine

Gabriel Gálvez, Jaime Ortega, Mauricio Latorre

34) Response of antioxidant metabolism on oxidative damage in three phenological stages of potato (*Solanum tuberosum* L.) under different irrigation regimes.

Rodrigo Mora, Paz Cárcamo, Ricardo Tighe, Rafael López & Claudio Inostroza.

36) Biochemical characterization of an ancestral Phytase from *Enterobacteriales* order

Claudia Mella-Hernández, Carlos Montiel, Victoria Guixé, Victor Castro-Fernandez

38) Identification and characterization of YAB transcription factors and anthocyanin accumulation under abiotic stress conditions in cultivated tomato (*Solanum lycopersicum* 'Indigo Rose')

Karla Jara-Cornejo, Paz E. Zúñiga, Claudia Rivera-Mora, Carlos R. Figueroa & Simón Ruiz-Lara.

40) Effect of antinucleosomal DNA sequences on nucleosome remodeling activity of ISW1a and RSC complexes

Fernanda Raiqueo, Roberto Amigo, José Gutiérrez

42) ELECTROSTATIC AMINO ACID OPTIMIZATION FOR DOMAIN DIMERIZATION: MAGNET CONCEPT APPLIED *IN VIVO* AND *IN SILICO* TO AN OPTOGENETIC SWITCH.

Leonardo Guzmán-Zamora, Sebastián Dehnhardt, Vicente Rojas, Luis Larrondo.

44) Small non-coding RNA composition of chromatin differs from the nuclear composition in pancreatic adenocarcinoma PANC1 cells

Zaida Martin, Rodrigo Maldonado

46) Identification of non-coding RNAs related to iron homeostasis in *Enterococcus faecalis*

Sebastián Gómez, Jorge Torres, Victor Aliaga-Tobar, Mauricio Latorre.

48) In silico characterization of the FaYAB1.1 protein and the relative expression pattern of the FaYAB1.1 gene in different tissues of *Fragaria × ananassa*

Eliana Bustos, Karla Jara-Cornejo, Paz E. Zúñiga, Carlos R. Figueroa

50) Differential expression of Innexins in insecticide insensitive clones of *Myzus persicae*

María Eugenia Rubio-Meléndez, Claudio Valenzuela, Angélica González, Ingo Dreyer.

52) Evaluation of ALMT and MATE genes in genotypes of highbush blueberry (*Vaccinium corymbosum* L.) under different doses of Al-toxic and acid conditions

Paz Cárcamo-Fincheira, Ricardo Tighe-Neira, Adriano Nunes-Nesi, Marjorie Reyes-Díaz, Claudio Inostroza-Blancheteau

54) NUA1 regulates lysosome biogenesis through TFEB subcellular localization in cancer cells

Viviana Coliboro, Mario Palma, Roxana Pincheira, Ariel Castro

56) Characterization of SHATTERPROOF (SHP), a transcription factor probably involved in softening of *Fragaria chiloensis* fruit

Macarena Z. Curaqueo, Raúl Herrera, M. Alejandra Moya-León

58) HDAC6 regulates the transcriptional activation of STAT3 pathway by altering the STAT3-PP2A association in colorectal cancer cell lines

M. Estrella Armijo, Christian Zevallos, Alejandro Villagra, Matías I. Hepp

60) NUA1 as a potential regulator of HnRNP

Alejandro Farías, Viviana Coliboro, Sebastián Azocar, Mario Palma, Maximiliano Figueroa, Roxana Pincheira, Ariel Castro

62) Polycystin-2 and Beclin-1 (PKD2/BECN1): A protein complex in the primary cilium of POMC neurons

Camila García-Navarrete, Catalina Kretschmar, Daniel Peña-Oyarzún, Eugenia Morselli, Valentina Parra, Alfredo Criollo.

64) Generation of specific Nanobodies against SARS-CoV-2 Nucleoprotein in alpacas in Chile

Angélica Bravo, Constanza Salinas-Vara, Guillermo Valenzuela-Nieto, Ronald Jara, Yorka Cheuquemilla, Anne Berking, Romina Russo, María Teresa Damiani, Alejandro Rojas-Fernandez

66) Transcriptional networks of AtbZIP25 regulates endocytic trafficking in *Arabidopsis thaliana*

Galleguillos Carolina, Osorio-Navarro Claudio, Cifuentes Damián, Pizarro Lorena, Norambuena Lorena

68) The relationship of RNA m6A machinery with hypertrophy in neonatal ventricular rat myocytes induced by norepinephrine

Sebastián Urquiza, Paulo Amaral, Sergio Lavandero, Vinicius Maracaja

70) Assessing adaptive advantages and evolutive implications behind acquisition and loss of DNA regions by horizontal gene transfer events in yeast.

Andrés Romero, Pablo Villarreal, Francisco Cubillos, Francisco Salinas

72) Production and characterization of extremophile bacterial pigments to produce Dye Sensitized Solar Cells (DSSC)

José Martínez-Oyanedel, Isabel Alarcón, Catalina Espinoza, Helia Bello, Miguel Martínez, Paulraj Manidurai

74) The glutamate receptor-like channels (GLRs) at Antarctic moss, *Sanionia uncinata*, and its contribution to ROS balance during abiotic stress

Alex San Martin-Davison, Oscar Arrey-Salas, Monica Yañez, Erwan Michard

76) Specific proteolysis mediated by a p97-directed proteolysis-targeting chimera (p97-PROTAC)

Constanza Salinas-Rebolledo, Javier Blesa, Guillermo Valenzuela-Nieto, David Schwefel, Natalia López González del Rey, Maxs Méndez-Ruette, Janine Burkhalter, Luis Federico Bátiz, Yorka Cheuquemilla, Ronald Jara, José A. Obeso, Pedro Chana-Cuevas, Gopal P. Sapkota, Alejandro Rojas-Fernandez

78) Influence of the LZ domain on the structural and functional properties of the FKH domain in the human transcription factor FoxP1

Isabel Asela, Perla Cruz, Yerko Castillo, Arturo Lamilla, Jorge Babul, Exequiel Medina

80) Biophysical characterization of the acetylation mimetic mutants K359Q and K372Q in the leucine zipper domain of the human transcription factor FoxP1

Dayanna Nuñez, Yerko Castillo, Jorge Babul, Exequiel Medina

82) Characterization of the acid-sensitivity of the Andes orthohantavirus Gn/Gc glycoproteins in the Golgi apparatus and endoplasmic reticulum

Fabián Figueroa, Nicole Tischler

84) Rebirth after the pandemic situation: structural biology applied to new and old problems

Catalina González, Florencia Quiroz, Dory Toledo, José Martínez-Oyanedel, Maximiliano Figueroa

86) Structural and functional characterization of ancestral arsenic-binding proteins

Consuelo Badilla, Victor Castro, Pablo Cea, Victoria Guixé

88) Mechanical pulling of artificial deeply knotted proteins

Rodrigo Rivera, Andrés Bustamante, Oscar Aránguiz, Mauricio Baez

90) Characterization of the spikes from different bunyaviruses

Esteban Rodríguez, Gianina Arata, Eduardo A. Bignon, Nicole D. Tischler

92) Molecular redesign of an optogenetic switch in yeast

Diego Ruiz, David Figueroa, Camila Baeza, Andrés Romero, Francisco Salinas.

94) Developing a light-regulated genetic circuit for transcriptional activation in yeast

David Figueroa, Javiera Barría, Diego Ruiz, Claudia Inzunza, Camila Baeza, Andrés Romero, Vicente Rojas, Luis F. Larrondo, Francisco Salinas

POSTER ODD NUMBERS SESSION
Wednesday, November, 23th

1) A microbial signature is specifically related to solid tumors in Chilean population

Troy Ejsmentewicz, Roxana González-Stegmaier, Roddy Jorquera, Rodrigo Lagos, María Cristina García, Celia Podesta, Carlos Barrientos, Franz Villarroel-Espíndola

3) Mitochondrial Ca²⁺ overload in the neurodegeneration associated with early-onset familial Alzheimer's disease

Marioly Müller, Riley Payne, J. César and J. Kevin Foskett

5) Pepsin as an enzyme involved in the degradation of synthetic and ALS astrocytes-derived inorganic polyphosphate

Armando Amaro, Cristian Arredondo, Polett Garces, Martin Montecino, Brigitte van Zundert.

7) In vitro study of boldine derivatives in viability of colorectal cancer cells

Karla Villalobos-Nova, Cristián Suárez-Rozas, Edwin Pérez, Bruce K. Cassels, Julio C. Tapia

9) Effect of miR-15b on anthracycline-induced cardiomyocyte damage and Bcl2 protection

Georthan Mancilla, Cristian Godoy, Ingrid Oyarzún, Pablo Castro, Hugo Verdejo, Clara Quiroga

11) Generation of KLK4 and KLK6 specific nanobodies for breast cancer diagnosis

Catalina Irribarra, Yorka Cheuquemilla, Johanna Himelreichs, Guillermo Valenzuela-Nieto, Ronald Jara, Pamela Ehrenfeld, Alejandro Rojas

13) Insulin regulates MUL1 expression in skeletal muscle cells

Erik Lopez-Gallardo, Ignacio Norambuena-Soto, Marioly Müller-Sobarzo & Sergio Lavandero

15) Stress-induced cell senescence increases mitochondrial calcium uptake and induces mitochondrial dysfunction in HepG2 cells

Lautaro Magaña, Xavier Vielma, Jose Bustamante, Roberto Bravo-Sagua

17) The role of METTL3 inhibitor STM2457 in cardiac fibroblasts

Danica Jiménez-Gallegos, Sebastián Urquiza-Zurich, Sergio Lavandero-González, Vinicius Maracaja-Coutinho

19) Study of TPC1-like channels in Physcomitrella patens: interaction between EF hands and Ca²⁺

Franko Mérida, Fernando Vergara, Carlos Navarro, Ingo Dreyer

21) SYSTEMIX: Systems Biology Center for the study of extremophile communities from mining tailings

Mauricio Latorre, Lorena Pizarro, Angélica Reyes, Alex Di Genova, Vinicius Maracaja-Coutinho, Valentina Parra, Emilio Vilches

23) Structural study of the inhibitory role of naphthalene derivatives against the PLpro enzyme from the zoonotic coronavirus SARS-CoV

Luis Castillo, Julio Caballero, José Luis Velázquez-Libera

25) Gene regulatory network of the Sulfate deficiency response in *Solanum lycopersicum*

José D. Fernández, Jonathan Canan, Nathan R. Johnson, Diego Landaeta-Sepúlveda, Javier Canales, José M. Álvarez, Elena A. Vidal

27) Identification of sulfate deficiency-responsive microRNAs in *Solanum lycopersicum*

Diego Landaeta-Sepúlveda, Nathan R. Johnson, José D. Fernández, Evelyn Sánchez, Gabriela M. Saavedra, Javier Canales, Elena A. Vidal

29) Bioinformatic identification of genes differentially expressed and sex-related in cardiac fibrosis

Matias Guerra, Anita Tapia, Jose Miguel Ulloa, Ingrid Oyarzún, Georthan Mancilla, Pablo Castro, Hugo Verdejo, Clara Quiroga

31) Endocytic trafficking is reprogramed in *Arabidopsis* root during oomycete biotrophic interaction

Claudio Osorio-Navarro, Ysadora Fernandez, José Luis Henriquez, Lorena Norambuena

33) Boron (B) and aluminum (Al) interaction enhances physiologic parameters and antioxidant mechanism in two genotypes Al-contrasting of highbush blueberry (*Vaccinium corymbosum* L.) cultivated under acid conditions

Katherine Salazar-Molina, Paz Cárcamo-Fincheira², Ricardo Tighe-Neira, Adriano Nunes-Nesi, Marjorie Reyes-Díaz, Claudio Inostroza-Blancheteau

35) Characterization of glycogen phosphorylase activity in the absence of the pyridoxal-5'-phosphate cofactor

Nicolás Herrera-Soto, Felipe González-Órdenes, Ernesto Uribe-Oporto, Víctor Castro-Fernández, Victoria Guixé

37) The long non-coding RNA MALAT1 modulates a novel downstream regulatory element of NR4A1 gene in specific cancer-type cells

Sara Wernig-Zorc, Uwe Schwartz, Josefa Inalef, Francisca Pavicic, Pamela Ehrenfeld, Gernot Längst, Rodrigo Maldonado

39) The long non-coding RNAs CRNDE and MIAT are potentially involved in the altered cardiac differentiation of iPSCs from Down Syndrome patients

Francisco Sigcho, Wladimir Corrales, Leslye Venegas, Sebastián Leiva-Navarrete, Vinicius Maracaja-Coutinho, Valentina Parra

41) Comparative analysis of the effect of General Regulatory Factors on ISW1a Nucleosome Remodeling Activity

Andrea Oyarzún, Roberto Amigo, Cristián Gidi, José Gutiérrez

43) Effect of poly (dA:dT) tracts on nucleosome remodeling activity of ISW1a and RSC complexes

Roberto Amigo, José Gutiérrez

45) FUNCTIONAL EVALUATION OF N- VERSUS C-TERMINAL ORIENTATION OF OPTOGENETIC SWITCH COMPONENTS

Sebastián Dehnhardt-Amengual, Leonardo Guzmán-Zamora, Vicente Rojas, Luis F. Larrondo

47) Characterization of non-coding RNAs in response to copper in *Enterococcus faecalis*

Jorge Torres, Sebastián Gómez, Víctor Aliaga-Tobar & Mauricio Latorre

49) Identification of non-coding RNAs in response to copper and antibiotics in *Enterococcus faecalis*

Javiera Pino, Victor Aliaga-Tobar, Fernanda Fredericksen, Mauricio Latorre

51) Genomic characterization of the gene encoding for the APX1 enzyme in octoploid strawberry (*Fragaria x ananassa*) and its tissue-associated expression pattern

Vanessa Gonzalez-Garrido, Paz E. Zuñiga, Karla Jara-Cornejo, Claudia Rivera-Mora, Carlos R. Figueroa

53) Expression of Calmodulin-binding Transcription Activator (CAMTA) genes during strawberry (*Fragaria x ananassa*) fruit development

Claudia Rivera-Mora, Paz E. Zúñiga, Karla jara-Cornejo, Mario Moya, Lida Fuentes-Viveros, Carlos R. Figueroa

55) SALL2 expression in colon cancer progression and its association with the WNT/ β -catenin pathway

Aracelly Quiroz, Constanza Mardones, José Miguel Navarrete, Ángela Ortiz, Paula Medina, Víctor Fica, Alexis Salas, Carolina Delgado, Ariel Castro, Roxana Pincheira

57) Modulation of pre-vacuolar traffic mediated by the MON1/CCZ1 complex in roots increases vacuolar sodium accumulation capacity and tolerance to salt stress in *Arabidopsis thaliana*

José Madrid-Espinoza, Josselyn Salinas-Cornejo, Ricardo Pérez-Díaz, Simón Ruiz-Lara

59) Differential Expression of Arabinogalactan Proteins (AGPs) In Response to Inclination in Stem of *Pinus radiata* Seedlings

Tamara Méndez, Yazmina Stappung, Rodrigo Retamal, María A. Moya-León, Raúl Herrera

61) NUAKE1 positively regulates nuclear PFKFB3 levels in breast cancer cells

Luis Espinoza, Pablo Parra, Mario Palma, Roxana Pincheira, Ariel Castro

63) Understanding MYC function through its interaction with NSD3

Valentina Gonzalez-Pecchi, Mario Palma Alarcón

65) A novel treatment combined with a chemokine receptor inhibitor sensitize the cisplatin-resistant gastric cancer cells

María Reyes, Bárbara Mora, Carmen Ili, Yuselin Mora, Kurt Buchegger, Ismael Riquelme, Louise Zanella, Priscilla Brebi

67) A simple method for the identification of nanobodies by density gradient separation

Johanna Himmelreichs, Guillermo Valenzuela-Nieto, Ronald Jara, Alejandro Rojas

69) Differences in calcium handling in Down Syndrome iPSC-derived cardiomyocytes and its influence on cell death after ischemia/reperfusion injury

Leslye Venegas Zamora, Wladimir Corrales, Sebastian Leiva Navarrete, Francisco Sigcho, Zully Pedrozo, Valentina Parra

71) Comparative analysis of the bacterial community found in soils near and far from the rhizosphere of plant growth in a copper mine tailing

Jaime Ortega, Gabriel Gálvez, Mauricio Latorre

73) Facultative endosymbionts modulate the aphid reproductive performance on wheat cultivars differing in the contents of benzoxazinoids

Angélica González-González, Nuri Cabrera, María Eugenia Rubio-Meléndez, Daniela Sepúlveda, Ricardo Ceballos, Natali Fernández, Christian C. Figueroa and Claudio C. Ramírez

75) Antarctic endophytic fungi improve the physiological and biochemical performance of strawberry plants (*fragaria x ananassa*) against drought and high temperatures

María Yáñez, Mario Moya, Sebastián Flores, Patricio Ramos

77) Developing a Magnetic-Tweezers for the Study of Elastic Proteins

Tomás Herмосilla, J Andrés Rivas Pardo

79) Biophysical characterization leucine zipper domain of the human transcription factor FoxP1

Nicolás Paredes, Jorge Babul, Exequiel Medina

81) Role of common catalytic residues of the vitamin kinase family in the phosphorylation of a methyl-phosphate group

Pérez Myriam, Cortes Isaac, Fuentes-Ugarte Nicolás, Vallejos-Baccelliere Gabriel, Guixé Victoria, Castro-Fernández Víctor.

83) Dimer dissociation is the rate-limiting step of KaiB fold switching

Ignacio Retamal-Farfán, Maira Rivera, Pablo Galaz-Davison, Elizabeth A. Komives, César A. Ramírez-Sarmiento

87) The hantavirus Gn/Gc spike stability and membrane fusion activation is modulated by multiple ionizable residues

Eduardo A. Bignon, Esteban Rodríguez, Gianina Arata, Pablo Guardado-Calvo, Félix A. Rey, Nicole D. Tischler

89) Kinetic and thermodynamic characterization of a protein cold-induced intermediate by using single-molecule force spectroscopy

Camila Neira, Rodrigo Rivera, Andrés Bustamante, Oscar Aranguiz, María Luisa Cordero, Christian A.M. Wilson, Mauricio Baez

91) Recombinant expression and functional characterization of the VP5 fusion protein from Halorubrum pleomorphic virus-6 in halophilic archaea

Kevin Chou, Eduardo Bignon, Nicole Tischler

93) Combining optogenetics and CRISPR-Cas technologies for GPD1 gene repression in yeast

Camila Baeza, David Figueroa, Diego Ruiz, Vicente Rojas, Luis F. Larrondo, Francisco Salinas

95) Unleashing the full power of homebrew reagents for low-cost RT-LAMP

Javiera Avilés, Tamara Matute, Isaac Nuñez, Maira Rivera, Javiera Reyes, César A. Ramírez-Sarmiento, Fernán Federici

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