VOL. 37
SUPPLEMENT, 2013

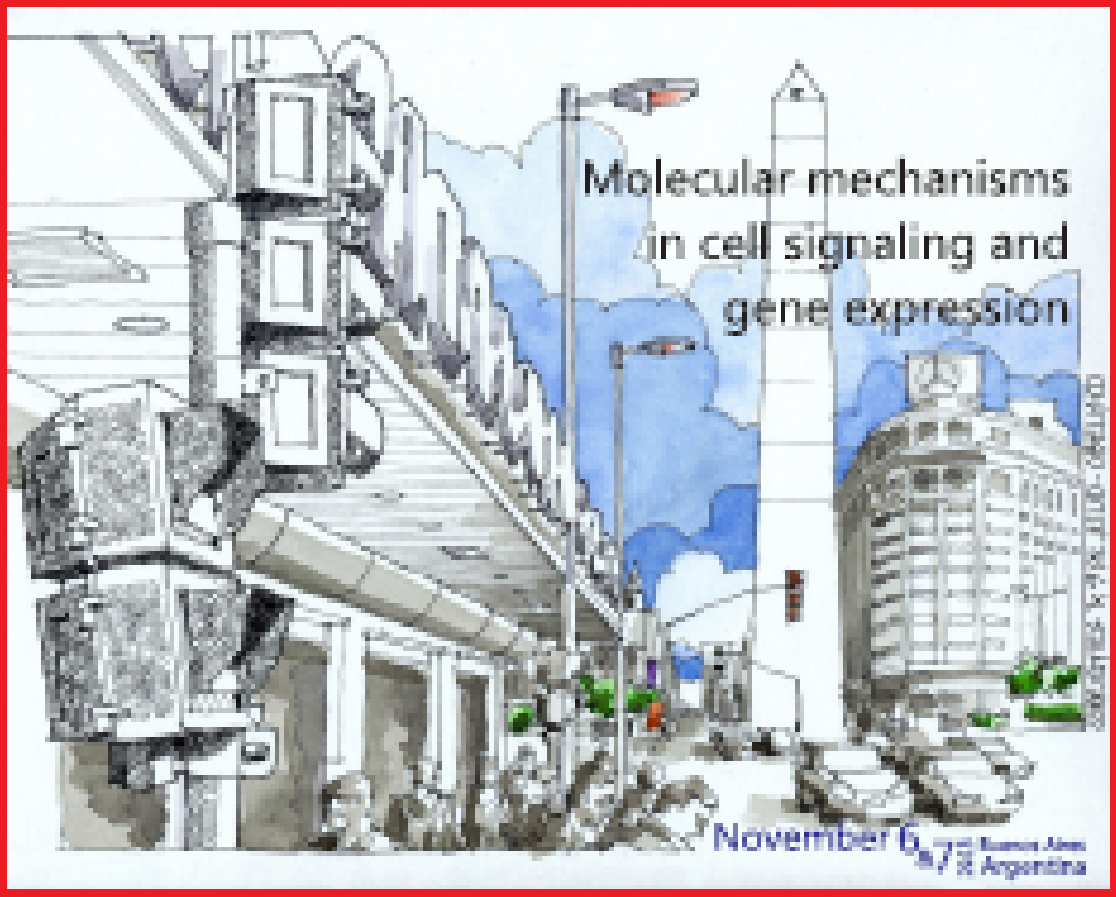
ISSN 0327 - 9545 (Print)
ISSN 1667 - 5746 (Electronic)
Printed in Argentina

# SUPPLEMENT BIOCELL

# SAIB

Argentine Society for Biochemistry and Molecular Biology Research

Sociedad Argentina de Investigaciones en Bioquímica y Biología Molecular



# B I O C E L L

An international journal of Biology

BIOCELL - Volume 37 - Supplement - November 2013 - Mendoza, Argentina.

ISSN 0327 - 9545 (print) - ISSN 1667 - 5746 (electronic)

This journal is included in the Life Sciences Edition Contents, the Science Citation Index, Electronic Library Project of the Institute for Scientific Information (ISI), Scisearch and Research Alert databases of Current Content; ISI/BIOMED, Index Medicus and MEDLINE available on the NLM's on line MED'LARS systems; EMBASE/Excerpta Medica; Chemical Abstracts, Biological Abstracts (BIOSIS), Index Medicus for Latin America and LATINDEX, SciELO Argentina.

Editorial office: biocell.journal@gmail.com Production office: biocell@fcm.uncu.edu.ar http://www.cricyt.edu.ar/biocell
Posmaster: BIOCELL - Instituto de Histología y Embriología "Dr. Mario H. Burgos" (IHEM-CONICET), Facultad de Ciencias Médicas, U.N.Cuyo. Casilla de Correo 56, (5500) Mendoza, Argentina, Fax: (+54-261) 449 4117.

SUBSCRIPTIONS: Check or pay order to BIOCELL should be sent to Secretaría Editorial at the Journal's address. Year subscription including mailing: Individual U$S 90. Institutions U$S 110.
BIOCELL has administrative support from the Fundación Universidad Nacional de Cuyo (FUNC).

BIOCELL
2013, Vol. 37 (Suppl.): 1-67

ISSN 0327 - 9545
PRINTED IN ARGENTINA

# - SAIB -

# «Molecular mechanisms in cell signaling and gene expression»

*Argentine Society for Biochemistry and Molecular Biology*

*Sociedad Argentina de Investigación en Bioquímica y Biología Molecular*

*November 6 - 7, 2013*
*Buenos Aires*
*República Argentina*

## MEMBERS OF THE SAIB BOARD

**-President-**
**Luis Mayorga**
IHEM-CONICET - Facultad de Ciencias Médicas
Universidad Nacional de Cuyo

**-Vice President-**
**Carlos Andreo**
CEFOBI-CONICET - Facultad de Ciencias Bioquímicas y Farmacéuticas
Universidad Nacional de Rosario

**-Past President-**
**Alberto R. Kornblihtt**
IFIBYNE-CONICET - Facultad de Ciencias Exactas y Naturales
Universidad de Buenos Aires

**-Secretary-**
**María Teresa Damiani**
IHEM-CONICET - Facultad de Ciencias Médicas
Universidad Nacional de Cuyo

**-Treasurer-**
**Silvia Moreno**
CEQUIBIEM-CONICET - Facultad de Ciencias Exactas y Naturales
Universidad de Buenos Aires

**-Pro Secretary-**
**Fabiana Drincovich**
CEFOBI-CONICET - Facultad de Ciencias Bioquímicas y Farmacéuticas
Universidad Nacional de Rosario

**-Pro Treasurer-**
**Daniel González**
LIBM-CONICET - Facultad de Bioquímica y Ciencias Biológicas
Universidad Nacional del Litoral

**-Auditor-**
**Natalia Furland**
INIBIBB-CONICET - Universidad Nacional del Sur

**-Auditor-**
**Paula Vincent**
INSIBIO-CONICET - Universidad Nacional de Tucumán

## SECTION REPRESENTATIVES

**-Cell Biology-**
**Hugo D. Lujan**
Laboratorio de Bioquímica y Biología Molecular, Facultad de Medicina,
Universidad Católica de Córdoba

**-Lipids-**
**Gabriela A. Salvador**
INIBIBB- CONICET, Universidad Nacional del Sur
Bahía Blanca

**-Microbiology-**
**Andrea Smania**
CIQUIBIC-CONICET, Facultad de Ciencias Químicas,
Universidad Nacional de Córdoba

**-Plant biochemistry and molecular biology-**
**Norberto Daniel Iusem**
IFIBYNE – CONICET, Facultad de Ciencias Exactas y Naturales,
Universidad de Buenos Aires

**-Signal Transduction-**
**Claudia Tomes**
IHEM- CONICET - Facultad de Ciencias Médicas,
Universidad Nacional de Cuyo

## ABSTRACT EVALUATION COMMITTEE

The abstracts were evaluated by the members of the SAIB Board

## LOCAL ORGANIZING COMMITTEE

**Cecilia D´Alessio**
Fundación Instituto Leloir, IIBBA-CONICET

**Luis Ielpi**
Fundación Instituto Leloir, IIBBA-CONICET

**Norberto Iusem**
IFIBYNE-CONICET, Facultad de Ciencias Exactas y Naturales, UBA

**Laura Morelli**
Fundación Instituto Leloir, IIBBA-CONICET

**Silvia Moreno de Colonna**
CEQUIBIEM-CONICET, Facultad de Ciencias Exactas y Naturales, UBA

**Luis Quesada**
Fundación Instituto Leloir, IIBBA-CONICET

## ACKNOWLEDGMENTS

Fundación Instituto Leloir, Buenos Aires, Argentina

Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina

Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT), Argentina

Biochemical Journal, UK

**PL-P13.**

**DILUCIDATING THE ROLE OF ATUK80 IN *Arabidopsis thaliana***

*Zanor MI, Armas A, Bondino H, Valle EM.*
*Instituto de Biología Molecular y Celular de Rosario (IBR). E-mail: zanor@ibr.gov.ar*

The functional characterization of proteins with unknown function is one of the main challenges in modern biology. AtUK80 was identified in an activation tagging experiment performed in order to find novel oxidative stress related genes. Homologues of this gene are present in other members of the plant kingdom and in a photosynthetic member of the protist kingdom. Analysis of silenced and over expressing Arabidopsis lines revealed that this protein might be involved in the regulation of vesicular trafficking in Arabidopsis. Additionally, AtUK80 co-immunoprecipitate with the multifaceted glycolitic enzyme glyceraldhyde 3P dehydrogenase. Taking into account that this enzyme is a key component of $H_2O_2$ signaling cascades in plants through activation of Phospholipase Dδ we postulate that AtUK80 might be involved in the $H_2O_2$ signaling pathway by modulating vesicular trafficking events.

**PL-P14.**

**CLONING OF TWO NEW CDPK ISOFORMS FROM *Solanum tuberosum***

*Fantino EI, Santin F, Ulloa RM.*
*INGEBI-CONICET, Vuelta de Obligado 2490 2° piso, C1428ADN Buenos Aires, Argentina.*

Calcium-dependent protein kinases (CDPKs) comprise a multigene family of calcium sensors that play important roles regulating plant growth and development and plant responses to environmental stresses. To the moment six isoforms have been characterized in potato plants. *In silico* analysis of *Solanum phureja* genome allowed us to identify other 20 candidate genes encoding potential CDPK isoforms that cluster into four subgroups. Expression of 13 of these isoforms was detected in leaves and stolons from *Solanum tuberosum* cv Desirée plants. Using primers directed against their 5´and 3´utr sequences we amplified isoforms StCDPK25 and StCDPK17 belonging to subgroup 1 and 3 respectively. These fragments were cloned and sequenced. Isoform StCDPK25 shares 99% identity with the *S. phureja* coding sequence and presented all the characteristics of a CDPK. Cloning of StCDPK25 coding sequence in pDEST expression vector in order to obtain the recombinant enzyme tagged to 6xHis is currently in progress. Analysis of its sequence indicated that it could be targeted to chloroplasts; the N-terminal sequence will be fused to GFP and transient expression assays will be performed in *Nicotiana benthamiana.* On the contrary, only a 1 kb fragment containing exons 1, 2 and 7 was amplified for StCDPK17 suggesting that alternative splicing has occurred.

*This work was financed by CONICET and UBACYT.*

**PL-P15.**

**mRNA OF StCDPK1 IS EXPRESSED IN ROOTS AND VASCULAR SYSTEM AND TARGETED BY micro RNAs**

*Santin F[1], Fantino EI[1], Bhogale S[2], Banerjee AK[2], Ulloa RM[1]*
*[1]INGEBI-CONICET, Vuelta de Obligado 2490 2° piso, C1428ADN Buenos Aires, Argentina. [2]IISER, Pune, India. E-mail: santin@dna.uba.ar*

Plant calcium-dependent protein kinases (CDPKs) are calcium sensors that play important roles regulating plant growth and development and responses to biotic and abiotic stresses. These enzymes are subjected to complex regulation at both transcriptional and post-transcriptional levels. StCDPK1 is expressed during stolon to tuber transition in potato plants. *In silico* analysis of StCDPK1 promoter sequence predicted a wide variety of cis-acting regulatory elements among which a number of defense and stress responsive elements are evident. Here, we show the expression profile of StCDPK1 revealed by potato transgenic lines harboring β-glucuronidase (GUS) driven by StCDPK1 promoter. GUS expression was detected by both histochemical staining and fluorometry. Promoter activity was significant in roots, but also in stems, leaf veins and branching points. We have further confirmed high promoter activity in roots in stable transgenic lines harboring green fluorescent protein (GFP) under control of StCDPK1 promoter. In addition, our preliminary *in silico* analysis revealed two miRNAs (miRNA390 and mRNA414a) that could potentially target StCDPK1. RT-PCR assays validated the presence of these miRNAs in whole plant and stolons. Isolation of precursors and cloning of these miRNAs are in progress.

*This work was financed by CONICET, UBACYT and MINCYT (Argentina)-DST (India).*