

CURRICULUM VITAE ABREVIADO (CVA)

PERSONAL INFORMATION

First name	Asunción		
Family name	Contreras de Vera		

Current position

Position	Catedrática de Universidad		
Initial date	27/10/2009		
Institution	University of Alicante		
Department/Center	Fisiología, Genética y Microbiología	Fac. Ciencias	
Country	Spain		
Key words	Signal transduction, nitrogen, cyanobacteria		

RELEVANT MERITS

Publications

- Forcada-Nadal, A., Bibak, S., Salinas, P., **Contreras, A.**, Rubio, V. and Llácer, J.L. (2025) Structures of the cyanobacterial nitrogen regulators NtcA and PipX complexed to DNA shed light on DNA binding by NtcA and implicate PipX in the recruitment of RNA polymerase. *Nucleic Acids Res*; **53(4)**: gkaf096.
- Salinas, P., Bibak, S., Cantos, R., Tremiño, L., Jerez, C., Mata-Balaguer, T. and **Contreras, A.** (2024) Studies on the PII-PipX-NtcA regulatory axis of cyanobacteria provide novel insights into the advantages and limitations of Two-Hybrid systems for protein interactions. *Int J Mol Sci*. **25(10)**: 5429.
- Jerez, C., Llop, A., Salinas, P., Bibak, S., Forchhammer, K. and **Contreras, A.** (2024) Analysing the cyanobacterial PipX interaction network using NanoBiT complementation in *Synechococcus elongatus* PCC7942. *Int J Mol Sci*; **25** (9): 4702.
- Neira, J.L., López-Redondo, M.L., Cámara-Artigas, A., Marina, A. and **Contreras, A.** (2024) Structure and dynamics of the cyanobacterial regulator SipA. *Arch Biochem Biophys*; **754**: 109943.
- Llop, A., Tremiño, L., Cantos, R. and **Contreras, A.** (2023) The signal transduction protein PII controls the levels of the cyanobacterial protein PipX. *Microorg*, **10(11)**:2379.
- Llop, A., Bibak, S., Cantos, R., Salinas, P. and **Contreras, A.** (2023) The ribosome assembly GTPase EngA is involved in redox signaling in cyanobacteria. *Front Microbiol*, **14**:1242616.
- Llop, A., Labella, J.I., Borisova, M., Forchhammer, K., Selim, K.A. and **Contreras, A.** (2023) Pleiotropic effects of PipX, PipY, or RelQ overexpression on growth, cell size, photosynthesis, and polyphosphate accumulation in the cyanobacterium *Synechococcus elongatus* PCC7942. *Front Microbiol*, **14**:1141775.
- Tremiño, L., Llop, A., Rubio, V. and **Contreras, A.** (2022) The conserved family of the pyridoxal phosphate-binding protein (PLPBP) and its cyanobacterial paradigm PipY. *Life (Basel)*, **12(10)**:1622.
- Jerez, C., Salinas P., Llop, A., Cantos, R., Espinosa, J., Labella, J.I. and **Contreras, A.** (2021) Regulatory connections between the cyanobacterial factor PipX and the ribosome assembly GTPase EngA. *Front Microbiol*, **12**:721760.
- Labella, J.I., Cantos, R., Salinas, P., Espinosa, J. and **Contreras, A.** (2020) Distinctive Features of PipX, a unique signaling protein of cyanobacteria. *Life (Basel)*, **10(6)**:79.
- Labella, J.I., Llop, A. and **Contreras, A.** (2020) The default cyanobacterial linked genome: an interactive platform based on cyanobacterial linkage networks to assist functional genomics. *FEBS Lett*, **594**: 1661-1674.
- Espinosa, J., Labella, J.I., Cantos, R., and **Contreras, A.** (2018) Energy drives the dynamic localization of cyanobacterial nitrogen regulators during diurnal cycles. *Environ Microbiol* **20**: 1240-1252.



- Labella, J.I., Cantos, R., Espinosa, J., Forcada-Nadal, A., Rubio, V., and **Contreras, A.** (2017) PipY, a member of the conserved COG0325 family of PLP-binding proteins, expands the cyanobacterial nitrogen regulatory network. *Frontiers in microbiology* **8**: 1244.
- Espinosa, J., Rodriguez-Mateos, F., Salinas, P., Lanza, V.F., Dixon, R., de la Cruz, F. & **Contreras, A.** (2014) PipX, the coactivator of NtcA, is a global regulator in cyanobacteria. *Proc Natl Acad Sci U S A* **111**: E2423-2430.

Congress

- Contreras, A.**; Bibak, S.; Llop, A.; Cantos, R.; Fuertes, L.; Mata, T.; Salinas, P. Involvement of the ribosome-assembly GTPase EngA in the PipX interaction network and redox signalling. 12th European Workshop on the Biology of Cyanobacteria. (03-06/09/2024). Sevilla, España. Oral presentation.
- Tremiño, L.; Llop, A.; Mata, T.; **Contreras, A.** Regulatory connections of PipY, a cyanobacterial paradigm for pyridoxal-phosphate binding proteins. 12th European Workshop on the Biology of Cyanobacteria. (03-06/09/2024). Sevilla, España. Poster.
- Cantos, R.; Llop, A.; **Contreras, A.** Genetic insight into the cyanobacterial transmembrane component EcfTC. 12th European Workshop on the Biology of Cyanobacteria. (03-06/09/2024). Sevilla, España. Poster.
- Llop, A.; Salinas, P.; Bibak, S.; Jerez, C.; Mateo, E.; Mata, T.; **Contreras, A.** Environmental regulation of PipX complexes in *Synechococcus elongatus* PCC7942. 12th European Workshop on the Biology of Cyanobacteria. (03-06/09/2024). Sevilla, España. Poster.
- Salinas, P.; Bibak, S.; Llop, A.; **Contreras, A.** Suppressors analysis of *glnB* null mutants to gain insights into PipX toxicity. 12th European Workshop on the Biology of Cyanobacteria. (03-06/09/2024). Sevilla, España. Poster.
- Llop, A.; Tremiño, L.; Cantos, R.; **Contreras, A.** Overexpression of the Pyridoxal phosphate-binding protein PipY induces accumulation of giant polyphosphates granules in the cyanobacterium *Synechococcus elongatus* PCC7942. *Polyphosphate: the actual biology of an ancient polymer*. (09-12/05/2023). Cadiz, España). Oral presentation.
- Contreras, A.**; Bibak, S.; Cantos, R.; Espinosa J.; Jerez, C.; Labella, J.I.; Llop, A.; Salinas, P.: Association of the multitask regulator PipX with the ribosome-assembly GTPase EngA. *17th International Symposium on Phototrophic Prokaryotes* (21-25/08/2022). Liverpool, Reino Unido. Oral presentation
- Jerez, C.; Salinas, P.; Cantos, R.; Labella, J.I.; **Contreras, A.** Regulatory connections between the ribosome-assembly GTPase EngA and the multitask regulator PipX. *11th European Workshop on the Biologoy of Cyanobacteria*. (14-18/09/2020) Oporto (online), Portugal. Poster
- Llop, A.; Jerez-Garcia, C.; Labella, J.I.; Cantos, R.; Espinosa J.; **Contreras, A.** EcfTC, a transmembrane component of a yet enigmatic cyanobacterial transporter. *11th European Workshop on the Biologoy of Cyanobacteria*. (07-09/09/2020). Oporto (online), Portugal. Poster.
- Cantos, R.; Labella, J.I.; Espinosa J.; Llop, A.; Hincapie, L.A.; **Contreras, A.** The cyanobacterial nitrogen regulator PipX is a multitasking protein. *23rd European Nitrogen Cycle Meeting*. (19-21/09/2018). España. Poster.
- Labella, J.I.; Cantos, R.; Salinas, P.; Espinosa J.; **Contreras, A.** From synteny analysis to functional genomics in cyanobacteria. *ISPP16th*. (05-09/08/2018). Vancouver, Canadá. Poster.
- Cantos, R.; Labella, J.I.; Espinosa J.; **Contreras, A.** Expanding the functions of the cyanobacterial moonlight protein PipX. *ISPP16th*. (05-09/08/2018). Vancouver, Canadá. Poster.
- Contreras, A.**; Labella, J.I.; Espinosa J.; Cantos, R. Characterization of *pipY*, a link between nitrogen regulation and division in cyanobacteria. *Bacterial cell division: Orchestrating the ring cycle*. (14-17/09/2016). Prague, República Checa. Oral presentation.
- Contreras, A.**; Labella, J.I.; Espinosa J.; Cantos, R.; Salinas, P. Roles of the unique regulatory factor PipX in response to intracellular stress in cyanobacteria. *XXXVIII Congreso de la Sociedad Española de Bioquímica y Biología Molecular* (07-10/09/2015). Valencia, España. Invited presentation/ Keynote.

Research projects.

Redes de interacción de proteínas y determinantes moleculares en un sistema modelo cianobacteriano (CIANOPIN). (**PID2023-149456NB-I00**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Ciencia, Innovación y Universidades. (01/09/2024 - 31/12/2027). Total budget: 125,000 €. Granted.

Genómica funcional en cianobacterias a partir de redes de sintenia e interacción. (**PID2020-118816GB-I00**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Ciencia e Innovación. (01/09/2021 – 31/08/2024). Total budget: 78,650 €. Granted.

Genómica funcional en cianobacterias a partir de redes de sintenia e interacción. (**GRE20-04-C**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Vicerrector de Investigación y Transferencia de Conocimiento (University of Alicante). 01/12/2020 – 31/12/2021. Total budget: 16,000 €. Granted.

Detección y caracterización de nuevos sistemas CRISPR-Cas (**PROMETEO/2017/129**). Principal Investigator: Francisco JM Mojica (University of Alicante). Funding source: Conselleria de Educación, Investigación, Cultura y Deporte. (01/11/2017 – 31/10/2021). Total budget: 399,930 €. Granted. Role in project: Researcher.

Transducción de señales y mecanismos de regulación relacionados con la disponibilidad de nitrógeno y adaptación fotosintética en la cianobacteria *Synechococcus elongatus* sp. (**BFU2015-66360-P**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Economía y Competitividad. (01/01/2016 – 31/12/2018). Total budget: 130,438 €. Granted

Transducción de señales y mecanismos de regulación relacionados con la disponibilidad de nitrógeno y adaptación fotosintética en la cianobacteria *Synechococcus elongatus* sp. (**BFU2012-33364**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Economía y Competitividad. (01/01/2013 – 31/12/2015). Total budget: 114,660 €. Granted.

Transducción de señales y estrés en la cianobacteria *Synechococcus elongatus* sp. PCC 7942. (**BFU2009-07371**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Ciencia e Innovación. (01/01/2010 – 31/12/2012). Total budget: 169,400 €. Granted.

Contracts, technological or transfer merits.

Innovation agent to potentiate the transfer of technology generated at the University of Alicante in the Microbiology field to the business environment in the Valencian Region. (**INNTA1/2020/25**). Principal Investigator: Francisco JM Mojica. (University of Alicante). Funding source: IVIA-Government of the Valencian Region, Spain. (2020-2021). Total budget: 110,450 €. Granted.

Promoción de Empleo Joven e Implantación de la Garantía Juvenil en I+D+i del Ministerio de Economía y Competitividad. (**PEJ-2014-A-85665/PEJ-2014-P-00298**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Economía y Competitividad. (01/12/2015 – 30/11/2017). Total budget: 39,200 €. Granted.

Promoción de Empleo Joven e Implantación de la Garantía Juvenil en I+D+i del Ministerio de Economía y Competitividad. (**PEJ-2014-A-85665/PEJ-2014-P-00297**). Principal Investigator: **Asunción Contreras de Vera** (University of Alicante). Funding source: Ministerio de Economía y Competitividad. (01/12/2015 – 30/11/2017). Total budget: 39,200 €. Granted.