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Education

Graduate in Biology. 2010. University of Granada.

Master in Agrarian Biology and Aquaculture. 2012. University of Granada.

PhD in Plant Physiology. 2019. University of Granada.

Supervisor Dr. Miguel López Gómez.

Title: Implication of polyamines in the response to salinity of the rhizobium-legume symbiosis.

Publications

Research articles.

1. **Javier Hidalgo-Castellanos**, Ana Sofia Duque, Álvaro Burgueño, José A. Herrera-Cervera, Pedro Fevereiro, Miguel Lopez-Gomez. (2019). **Overexpression of the arginine decarboxylase gene promotes the symbiotic interaction *Medicago truncatula* - *Sinorhizobium meliloti* and induces the accumulation of proline and spermine in nodules under salt stress conditions.** Journal of Plant Physiology. Elsevier. 241. DOI: [10.1016/j.jplph.2019.153034](https://doi.org/10.1016/j.jplph.2019.153034)
2. Adriana B. Cesari, Natalia S. Paulucci, Miguel Lopez-Gomez, **Javier Hidalgo-Castellanos**, Carmen Lluch Plá, Marta S. Dardanelli. (2019). **Restrictive water condition modifies the root exudates composition during peanut-PGPR interaction and conditions early events, reversing the negative effects on plant growth.** Plant Physiology and Biochemistry. Elsevier. 142, pp.519-527. DOI: [10.1016/j.plaphy.2019.08.015](https://doi.org/10.1016/j.plaphy.2019.08.015)
3. **Javier Hidalgo-Castellanos**, Agustín Marin-Peña, Sara Jimenez-Jimenez, José A. Herrera-Cervera, Miguel Lopez-Gomez. (2019). **Polyamines oxidation is required in the symbiotic interaction *Medicago truncatula*-*Sinorhizobium meliloti* but does not participate in the regulation of polyamines level under salinity.** Plant Growth Regulation. Springer. 88, pp.297-307. DOI: [10.1007/s10725-019-00508-z](https://doi.org/10.1007/s10725-019-00508-z)
4. Adriana B. Cesari, Natalia S. Paulucci, Miguel Lopez-Gomez, **Javier Hidalgo-Castellanos**, Carmen Lluch Plá, Marta S. Dardanelli. (2019). **Performance of *Bradyrhizobium* and *Bradyrhizobium-Azospirillum* in**

alleviating the effects of water restrictive conditions during early stages of *Arachis hypogaea* growth.

Journal of Plant Growth Regulation. Springer. 38, pp.1362-1374. DOI: [10.1007/s00344-019-09939-4](https://doi.org/10.1007/s00344-019-09939-4)

5. Miguel López-Gómez, **Javier Hidalgo-Castellanos**, J. Rubén Muñoz-Sánchez, Agustín J. Marín-Peña, Carmen Lluch, José A. Herrera-Cervera. (2017). **Polyamines contribute to salinity tolerance in the symbiosis *Medicago truncatula*-*Sinorhizobium meliloti* by preventing oxidative damage.** Plant Physiology and Biochemistry. 116, pp.9-17. 2 DOI: [10.1016/j.plaphy.2017.04.024](https://doi.org/10.1016/j.plaphy.2017.04.024)

6. Miguel López-Gómez, **Javier Hidalgo-Castellanos**, Carmen Lluch, José A. Herrera-Cervera. (2016). **24-Epibrassinolide ameliorates salt stress effects in the symbiosis *Medicago truncatula*-*Sinorhizobium meliloti* and regulates the nodulation in cross-talk with polyamines.** Plant Physiology and Biochemistry. 108, pp.212-221. DOI: [10.1016/j.plaphy.2017.04.024](https://doi.org/10.1016/j.plaphy.2017.04.024)

7. Miguel López-Gómez, Libertad Cobos-Porras, **Javier Hidalgo-Castellanos**, Carmen Lluch. (2014). **Occurrence of polyamines in root nodules of *Phaseolus vulgaris* in symbiosis with *Rhizobium tropici* in response to salt stress.** Phytochemistry. 107, pp.32-41. DOI: [10.1016/j.phytochem.2014.08.017](https://doi.org/10.1016/j.phytochem.2014.08.017)

8. Miguel López Gómez, **Javier Hidalgo Castellanos**, Carmen Iribarne, Carmen Lluch. (2014). **Proline accumulation has prevalence over polyamines in nodules of *Medicago sativa* in symbiosis with *Sinorhizobium meliloti* during the initial response to salinity.** Plant and Soil. 374, pp.149-159. DOI: [10.1007/s11104-013-1871-1](https://doi.org/10.1007/s11104-013-1871-1)

Review Articles.

1. José Ortiz, Carolina Sanhueza, Antònia Romero-Munar, **Javier Hidalgo-Castellanos**, Catalina Castro, Luisa Bascuñán-Godoy, Teodoro Coba de la Peña, Miguel López-Gómez, Igor Florez-Sarasa, Néstor Fernández Del-Saz. (2020). **In Vivo Metabolic Regulation of Alternative Oxidase under Nutrient Deficiency-Interaction with Arbuscular Mycorrhizal Fungi and Rhizobium Bacteria.** International Journal of Molecular Sciences. 12;21(12):4201. DOI: [10.3390/ijms21124201](https://doi.org/10.3390/ijms21124201)

2. **Javier Hidalgo-Castellanos**, Agustín J. Marín Peña, José A. Herrera-Cervera, López.Gómez. (2021). **Polyamines: key element in the rhizobia-legume symbiosis?** Phytochemistry Reviews. DOI: <https://doi.org/10.1007/s11101-021-09751-7>

Book Chapters.

1. Miguel López.Gómez; **Javier Hidalgo-Castellanos**; Agustín J. Marín Peña. 2019. **Relationship between polyamines and osmoprotectants in response to salinity in the legume-rhizobia simbiosis Osmoprotectant-Mediated Abiotic Stress Tolerance in Plants.** Springer. 1, pp.269-285. ISBN 978-3-030-27422-1.

Professional experience

Categoria	Period	Institution	Topic
Research initiation grant.	01/Sept/2012 - 01/July/2013	Department of Plant Physiology, University of Granada	Nitrogen Fixation in Symbiosis: Participation of phytohormones in tolerance to salinity in legumes of agricultural interest.
Pre-doctoral research grant	01/March/2015 - 01/August/2015	Department of Plant Physiology, University of Granada	Involvement of polyamines in the response to salinity of the rhizobium-legume symbiosis.
Pre-doctoral research grant	01/April/2016 - 01/June/2018	Department of Plant Physiology, University of Granada	Cross-talk between polyamines and brassinosteroids in the response to salinity of the rhizobium-legume symbiosis.
Post-doctoral research grant	15/Jan/2020 – 15/June/2020	Department of Plant Physiology, University of Granada	Polyamine catabolism in early stages of rhizobium-legume symbiosis. .
Post-doctoral research grant	06/April/2021- 30/Sept/2021	Chemical, Environmental and Bioprocess Engineering Department, University of León	Microbial Biofertilizers for Sustainable Agriculture. Smart Mulch Project
Post-doctoral research grant	08/October/2021-	Department of Plant Sciences, University of California Davis	

Professional skills

Laboratory Molecular biology techniques, enzymatic activity tests, analysis of carbohydrates and antioxidants, determination of polyamines and other nitrogenous compounds, HPLC, determination of nitrogen fixation in vivo.

Others Design and management of pot trials in growth chamber and green house, Plant growth in hidroponic systems and inoculation with microbes. manual pollination techniques, use of databases and statistical analysis.
