

Jorge Soria-Bustos, Ph. D.

Age: 35 years.

Email: jsoria-bustos@tgen.org

Education:

4 years

Biotechnology.

01/31/2017-01/31-2021

México City. México

Diploma. PhD. in Biomedicine and Molecular

National Polytechnic Institute.

Studied the role of type VI secretion system in the opportunistic pathogen *Enterobacter cloacae*

Mentor: Dr. Miguel ángel De la Cruz Villegas.

2 years (2012-2014)

Health.

08/2012-07/30-2014

Pachuca, Hgo. México

Diploma. MSc. in Biomedical Sciences and

Autonomous University of Hidalgo State.

Studied the antibacterial activity of organic extracts of pomegranate components (*Punica granatum L.*).

Mentor: Dr. Gabriel Betanzos Cabrera.

5 years (2004-2008)

01/31/2004-11/30-2008

Pachuca, Hgo. México

Diploma. Bachelor of Science, Nutrition.

Autonomous University of Hidalgo State.

Work experience

2011-2021

Autonomous University of Hidalgo State.

Supervisor: Dr. Raul Cortes Cervantes

Position title: professor of Human anatomy

Missions or tasks realized: Teach Health Sciences classes to undergraduate students.

2015-2021

University of Durango.

Supervisor: Liliana Licona Arteaga.

Position title: professor of Nutrition Program

Missions or tasks realized: Teach laboratory practices and classes of subjects as Biochemistry, Microbiology, Genetics, and Food Technology to undergraduate students.

Research

- Laboratory Research Technician II at the Department of Pediatrics, University of Virginia (12/15/2019-06/08/2020), under the direction of Dr James Nataro and Dr. Jorge A. Girón. Activities: development of projects related with virulence factors of different pathotypes of *E. coli*, *Shigella flexneri* and *Campylobacter jejuni* *in vitro* and *in vivo* (in collaboration with The Melinda & Bill Gates Foundation).
- Research fellow/assistant at the Medical Research Unit in Infectious and Parasitic Diseases, Pediatrics Hospital, IMSS Century XXI National Medical Center (01/31/201-12/14/2019). Developing projects of cellular biology and molecular biology of Enterobacteriaceae (*Salmonella*, *E. coli*, *Enterobacter* and *Klebsiella*).
- Emerging Pathogens Institute, University of Florida. (03/15/2014-06/20/2014). Under the direction of Dr. Jorge A. Girón. Activities: training in techniques of cellular biology and molecular biology of Enterobacteriaceae.

Skills and abilities

- Experience of 6 years in microbiology, molecular biology and genetics.
- Experience performing experiments related with handling of laboratory animals and bacteria.
- Mutagenesis and cloning of bacterial genes.
- Purification of His-tagged proteins.
- Cell culture, adherence to epithelial cells assays.
- Bacterial biofilm formation assays. Phagocytosis assays.
- Primer design.
- PCR, qRT-PCR. DNA and RNA extraction. Western Blot, Protein, DNA and RNA electrophoresis.
- EMSA assays. Experience performing experiments related with secretion of bacterial proteins.

Publications

- **Soria-Bustos, J.**, Ares, M.A., Gómez-Aldapa, C. A., González-y-Merchand, J. A., Girón, J. A. and De la Cruz, M. A. 2020. Two Type VI secretion systems of *Enterobacter cloacae* are required for bacterial competition, cell adherence, and intestinal colonization. *Front. Microbiol.* 11: 560488.
- Belmont-Monroy, L., Saitz-Rojas, W., **Soria-Bustos, J.**, Mickey, A. S., Sherman, N. E. Orsburn, B. C., Ruiz-Perez, F. and Santiago, A. E. 2020. AraC/XylS-regulated family of N-acyltransferases in pathogens of the order Enterobacterales. *PLoS Pathog.* 16(8): e1008776.

- Chimal-Cázares, F Hernández-Martínez, G., Pacheco, S., Ares, M. A., **Soria-Bustos, J.**, Sánchez-Gutiérrez, M., Izquierdo-Vega, J. A., Ibarra, J. A., González-y-Merchand, J. A., Gorvel, J. P., Méresse, S. and De la Cruz, M. A. Molecular Characterization of SehB, a Type II Antitoxin of *Salmonella enterica* Serotype Typhimurium: Amino Acid Residues Involved in DNA-Binding, Homodimerization, Toxin Interaction, and Virulence. 2020. *Front. Microbiol.* 11:614.
- **Jorge Soria-Bustos**, Waleska Saitz, Abraham Medrano, Cristina Lara-Ochoa, Zineb Bennis, Valerio Monteiro-Neto, Camilla Itapary dos Santos, Josias Rodrigues, Rodrigo T. Hernandez, Jorge A. Yáñez, Javier Torres, Fernando Navarro-García, Ygnacio Martínez Laguna, Roxane M. Fontes Piazza, María L. Cedillo, Miguel A. De la Cruz, James P. Nataro, and Jorge A. Girón. 2021. Role of the YehD fimbriae in the virulence-associated properties of enteroaggregative *Escherichia coli*. *Environ Microbiol.* DOI: [10.1111/1462-2920.15737](https://doi.org/10.1111/1462-2920.15737).
- Rodríguez-Valverde D, León-Montes N, **Soria-Bustos J**, Martínez-Cruz J, González-Ugalde R, Rivera-Gutiérrez S, González-y-Merchand JA, Rosales-Reyes R, García-Morales L, Hirakawa H, Fox JG, Girón JA, De la Cruz MA and Ares MA. 2021. cAMP Receptor Protein Positively Regulates the Expression of Genes Involved in the Biosynthesis of Klebsiella oxytoca Tilivalline Cytotoxin. *Front. Microbiol.* 12:743594. DOI: 10.3389/fmicb.2021.743594.