

## ***CURRICULUM VITAE***

Carlos Enrique Sanz-Rodríguez, PhD

Born: November 10, 1978, Barinas, Venezuela.

## **CONTACT**

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## **EDUCATION**

**2015.** *PhD in Biological Sciences.* Universidad Simón Bolívar (USB), Caracas, Venezuela.

*Graduated with honors.*

Dissertation: “Metabolic network reconstruction of *Trypanosoma cruzi*”.

Advisor: José Bubis, PhD and Co-Advisor: Juan L. Cabrera, PhD

**2003.** *Licentiate\* in Biology.* Universidad Central de Venezuela (UCV). Caracas, Venezuela.

Dissertation: “Inhibition of the *Trypanosoma cruzi* hexokinase by bisphosphonates: study of intermediary metabolism”.

Advisor: Julio A. Urbina, PhD

*\* This degree provides training equivalent to a BS an MS, including coursework in Biology, Chemistry, Mathematics, Physics as well as work leading to a thesis reporting original research.*

## **CONTACT FOR REFERENCES**

- Julio A. Urbina, IVIC, Venezuela. [jurbina@mac.com](mailto:jurbina@mac.com)
- José Bubis, USB, Venezuela. [jbubis@usb.ve](mailto:jbubis@usb.ve)
- Alvaro Acosta-Serrano, LSTM, UK. [Alvaro.Acosta-Serrano@lstmed.ac.uk](mailto:Alvaro.Acosta-Serrano@lstmed.ac.uk)
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- Kojo A. Mensa-Wilmot, UGA, USA [mensawil@uga.edu](mailto:mensawil@uga.edu)

## RESEARCH EXPERIENCE

**2018 - present.** *Postdoc Research Scholar.* Kojo Mensa-Wilmot lab.

\*Cloning, RNAi, fluorescence microscopy, cell culture, cellular thermo shift assay, parasites transfection.

**2016-2018.** *Postdoc Research Scholar.* Evolutionary and Systems Biology Group, Kannan lab. UGA.

\*Protein purification using FPLC, site-directed mutagenesis, GO enrichment analysis, enzyme assay: radioactive, colorimetric and NMR in real time, sequence alignment.

**2016.** *Research associated.* Molecular Genetic lab. Centre of Microbiology. Instituto Venezolano de Investigaciones Cientificas (IVIC).

\*Statistical analysis of patient's samples, plasmid purification and bacterial transformation.

**2013-2016.** *Research associated.* Dynamic Stochastic lab, Center for Physics. IVIC.

\*Creation of database using Perl, SQL, Network analysis of metabolic networks, community structure algorithm developing, Python and R programming.

**2010-2011.** *Research assistant.* Study of the role of Adenilate Cyclase and signaling process in *Trypanosoma evansi*.

\*Protein and parasites purification, luminescence assay to determine cAMP, Radioactive assay with  $^{32}\text{P}$  and  $^3\text{H}$ , western blot.

**2006.** *Research assistant.* Division of Genetic Polymorphism, Instituto de Estudios Avanzados (IDEA). Caracas, Venezuela

\*Protein extraction, 2-D gel electrophoresis.

**2003-2005.** *Research assistant.* Howard Hughes Medical Institute Project. Laboratory of Biological Chemistry, IVIC, Caracas, Venezuela.

\*Protein purification, enzyme kinetics, parasites cultures.

## SCHOLARSHIPS & AWARDS

**2015.** *Graduated with honors.* PhD in Biological Sciences. Universidad Simón Bolívar.

**2004.** *Award Zigman Brener,* for the best work in the area of biochemistry, at the XXXI Annual Meeting on Basic Research in Chagas Disease, Caxambu, MG. Brazil.

## PUBLICATIONS

**2020.** Shrestha S., Katiyar S, Sanz-Rodríguez C.E., Ross-Kemppinen N, Kim WH, Kadirvelraj R., Panagos C, Keyhaninejad N, Colonna M, Chopra P, Byrne DP, Boons GJ, Knaap EV, Evers PA, Edison AS, Wood Z., Kannan, N. A novel redox-active switch in Fructosamine-3-kinase expands the regulatory repertoire of the protein kinase superfamily. *Sci. Signal.* In press. DOI: <https://doi.org/10.1101/2020.01.13.904870>.

**2017.** Bubis, J., Martínez, J.C., Calabokis, Ferreira, J., Sanz-Rodríguez C.E., Navas, V., Escalona, J.L., Guo, Y., Taylor, S. S. The gene product of a *Trypanosoma equiperdum* ortholog of the cAMP-dependent protein kinase regulatory subunit is a monomeric protein that is not capable of binding cyclic nucleotides. *Biochimie.* 146:166-180. DOI: 10.1016/j.biochi.2017.12.010.

**2016.** Calabokis, M., González, Y., Merchán, A., Escalona, J. L., Araujo, N. A., Sanz-Rodríguez, C. E., Cywiak, C., Spencer, L., Martínez, J. C., Bubis. J. Immunological Identification of a cAMP-dependent Protein Kinase Regulatory Subunit-like Protein from The *Trypanosoma equiperdum* TeAp-N/D1 Isolate. *J Immunoassay Immunochem.* 37(5): 485-514. DOI:10.1080/15321819.2016.1162799.

- 2015.** Alvarez, A. J., Sanz-Rodríguez, C., Cabrera, J.L. Weighting dissimilarities to detect communities in networks. *Philos Trans A Math Phys Eng Sci.* 2015; 373(2056). DOI: 10.1098/rsta.2015.0108.
- 2014.** Araujo, N, Sanz-Rodríguez, C. E., Bubis, J. Binding of rhodopsin and rhodopsin analogues to transducing, rhodopsin kinase and arrestin-1. *World J Biol Chem.* 26 (2): 254-268. DOI: 10.4331/wjbc v5.i2.254.
- 2007.** Sanz-Rodríguez, C. E., J. L. Concepción, S. Pekerar, E. Oldfield, J. A. Urbina. Bisphosphonates as inhibitors of *Trypanosoma cruzi* hexokinase. Kinetic and metabolic studies. *J Biol Chem.* 282 (17), 12377-12387. DOI: 10.1074/jbc.M607286200.
- 2006.** Hudock M. P., Sanz-Rodríguez C. E., J. Chan, Y. Song, Y. Zhang, S. Odeh, T. Kosztowski, A. Leon-Rossell, J. L. Concepción, V. Yardley, S. L. Croft, J. A. Urbina and E. Oldfield. Inhibition of *Trypanosoma cruzi* Hexokinase by Bisphosphonates. *J Med Chem.* 49: 215-223. DOI: 10.1021/jm0582625.

### Books Chapters

- 2016.** José Bubis, Rafael Medina, Carolina Möller, Deisy Perdomo, Sheerly Rodríguez, Nelson Araujo, Carlos E. Sanz-Rodríguez, Iván Bello. “Aproximaciones químicas para el estudio de la estructura de la rodopsina”. In book: Colloquium Biochemie: Bioquímica y sus aplicaciones, Edition: 1st Edition - Göttingen: Cuvillier. eISBN: 978-3-7369-4975-1.
- 2012.** Sanz-Rodríguez, C. “Inhibición de la Hexoquinasa de *Trypanosoma cruzi* por la acción de bifosfonatos: Estudio sbre el metabolism intermediario”. Editorial académica española & LAP LAMBERT Academic Publishing GmbH & Co. KG. Saarbrücken, Germany. ISBN: 978-3-8473-6110-7.

## Proceedings

- 2014.** Sanz-Rodríguez, C.E. , Alvarez, A. J., Cabrera, J.L. “Communities detection in different protein-protein interaction networks using Louvain method”. XII Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas (CIMENICS). BSB. 67-72.
- 2012.** Alvarez, A. J., Sanz-Rodríguez, C., Cabrera, J.L. Metabolic network reconstruction of *Trypanosoma cruzi*, XI Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas (CIMENICS). BSB. 25-29.