

Isis Trujillo-Gonzalez, PhD

500 Laureate Way, Kannapolis, North Carolina, 28081, USA
Nutrition Research Institute
University of North Carolina at Chapel Hill
(704)-250-5020 ♦ isis_trujillo@unc.edu

EDUCATION

PhD in Biomedical Sciences, *Magna Cum Laude*

National Autonomous University of Mexico

2009-2014

- Concentration: Transcriptional Regulation in Cancer and Metabolic Diseases
- Mentor: Alfonso Leon del Rio, PhD
- Dissertation: Holocarboxylase synthetase: from biotin utilization to transcriptional Regulation.

B. Sc. Biology, *Magna Cum Laude*

National Autonomous University of Mexico

2004-2009

- Concentration: Molecular Biology
- Mentor: Gloria Luz Paniagua, PhD

PROFESSIONAL EXPERIENCE

- **Research Assistant Professor,
Nutrition Research Institute,
Department of Nutrition.
University of North Carolina at Chapel Hill**

2021-current

- **Postdoctoral Research Associate,
Nutrition Research Institute,
University of North Carolina at Chapel Hill
Laboratory of Steven H. Zeisel, MD, PhD**

2015-2020

Research Experience

- Determined choline pathway perturbations resulting in mitochondrial dysfunction.
- Identification of choline-sensitive microRNAs in brain and retinal development.
- Identified factors that regulate adipose browning in Betaine homocysteine methyltransferase (*Bhmt*) knock out mouse model and its contribution to energy wasting.
- Studied liver dysfunction in *Bhmt* knockout mice and progression to hepatocellular carcinoma.

Other related experience

- Trained undergraduate and graduate students
- Human Pilot Study coordinator (IRB writing, study design, trial registration)

- **Research Trainee, Biomedical Research Institute,
National Autonomous University of Mexico
Laboratory of Alfonso Leon Del Rio, PhD** **2009-2014**

Research Experience

- Studied Holocarboxylase synthetase, a novel transcriptional co regulator.
- Gained expertise in the fields of transcriptional regulation, epigenetics and molecular biology.

OTHER PROFESSIONAL EXPERIENCE

Symposium chair: Summary and closing Remarks. **2019**
*“12th International Conference on One Carbon Metabolism,
B Vitamins and Homocysteine”* Catalonia, Spain.

TEACHING EXPERIENCE

Coordinator and Teaching assistant. (Design and Teach the course)
“Transcription, Chromatin and Human Disease”

Program: Doctorate in Biomedical Science **2013-2014**
National Autonomous University of Mexico

- Training of undergraduate and graduate students
in molecular biology and neuroscience. **2016-2019**

ACADEMIC AND PROFESSIONAL HONORS

- NHI Workshop in Precision Nutrition, Poster Presentation Award **2021**
- Balchem Corp. Postdoctoral Fellowship **2016-2019**
- Winner of the Best Postdoctoral Researcher Poster Presentation
*“12th International Conference on One Carbon Metabolism,
B Vitamins and Homocysteine”*, Catalonia, Spain **2019**
- Pre-Doctoral Research Fellowship,
Mexico’s National Council of Science and Technology
Mexico **2009-2014**

- Student Travel Award for the 62nd American Society of Human Genetics

- Fellowship "PAEA, UNAM" for high proficiency undergraduate students 2005-2008

PUBLICATIONS

1. **Trujillo-Gonzalez I**, Friday WB, Munson CA, Bachleda A, Weiss ER, Alam NM, et al. Low availability of choline in utero disrupts development and function of the retina. *The FASEB Journal*. 2019;33(8):9194-209.
2. **Trujillo-Gonzalez I**, Wang Y, Friday WB, Vickers KC, Toth CL, Molina-Torres L, et al. MicroRNA-129-5p is regulated by choline availability and controls EGF receptor synthesis and neurogenesis in the cerebral cortex. *The FASEB Journal*. 2018;33(3):3601-12.
3. Meneses-Morales I, Tecalco-Cruz AC, Barrios-Garcia T, Gomez-Romero V, **Trujillo-Gonzalez I**, Reyes-Carmona S, et al. SIP1/NHERF2 enhances estrogen receptor alpha transactivation in breast cancer cells. *Nucleic acids research*. 2014;42(11):6885-900.
4. **Trujillo-Gonzalez I**, Cervantes-Roldan R, Gonzalez-Noriega A, Michalak C, Reyes-Carmona S, Barrios-Garcia T, et al. Holocarboxylase synthetase acts as a biotin-independent transcriptional repressor interacting with HDAC1, HDAC2 and HDAC7. *Molecular genetics and metabolism*. 2014;111(3):321-30.
5. Vázquez-Cruz B, Vázquez-Muñoz M, Navarrete-Bastida R, **Trujillo-Gonzalez I**, De Haro R, Segura-Cobos D, Muñoz Lopez J. Antihypertensive and vasorelaxant effects of the aqueous extract of *Casimiroa edulis*. *Pharmacology Online*. 2009; 3:73-83.

PUBLISHED ABSTRACTS

1. **Trujillo I**, Surzenko N, Wang Y, Zeisel SH. DNA Methylation and microRNA Expression are Altered by Choline Deficiency During Mouse Brain Development. *The FASEB Journal*. 2016;30(1_supplement):912.7-.7.
2. Surzenko N, **Trujillo-González I**, Zeisel SH. Low Intake of Choline During Pregnancy Leads to Aberrant Retinal Architecture and Poor Visual Function in the Offspring. *The FASEB Journal*. 2016;30(1_supplement):679.9-.9

BOOK CHAPTERS

Isis Trujillo-Gonzalez and Steven H Zeisel. Choline. *Present Knowledge in Nutrition*. 2020. *Present Knowledge in Nutrition*, 11th Edition, volume 1. Eds. Marriott, Bernadette P., Diane F. Birt, Virginia A. Stallings, and Allison A. Yates. Elsevier: Amsterdam, Netherlands, 2020

MANUSCRIPTS IN PROGRESS

Isis Trujillo-Gonzalez, Jennifer Owen, Frances Bramlett, Steven H Zeisel and Manya Warriier. Deletion of *Bhmt* gene in mice activates adipose browning and promotes adipose wasting.

RELEVANT RESEARCH PRESENTATIONS AS FIRST AUTHOR

- Invited Talk, Lifecourse Perspectives in Aging, NIH. **Nov-2020**
- Invited Talk, FASEB Summer Research Conference on Folic Acid, Vitamin B12 and One-Carbon Metabolism. Bend, OR **2020**
- **Poster**, 12th International Conference on One Carbon Metabolism, B Vitamins and Homocysteine, Southern Catalonia, Spain. **2019**
"Perturbations in Choline Metabolism Lead to Mitochondrial Dysfunction."
- **Poster**, Annual Meeting of the American Society of Nutrition. Boston. MA **2018**
"Loss of Betaine Homocysteine Methyl Transferase (*Bhmt*) gene in CWSV1 cells by CRISPR-dCas9 Exhibit Hepatocellular Carcinoma Phenotype."
- **Poster**, Annual Meeting of Experimental Biology, San Diego, CA **2016**
"DNA Methylation and microRNA expression are altered by choline deficiency during mouse brain development."
- **Poster**, Annual Meeting of the American Society of Human Genetics. San Francisco, CA. **2012**
"The enzyme holocarboxylase synthetase mediated biotin-independent silencing through the recruitment of histone deacetylases."
- **Oral presentation**, XII International Meeting of Hypertension. Mexico City, Mex. **2008**
"*Casimiroa edulis* exhibit a vasodilator effect mediated by nitric oxide in two models of hypertension."

SUMMARY OF RESEARCH SKILLS

- Cell culture: mammalian cells, primary neural progenitor cells and cortical neurons preparation and culture. Primary hepatocytes culture. Cancer cell lines.
- Molecular/Cell biology techniques: DNA/RNA/Protein preparations, Real Time/Semi-quantitative RT-PCR, Cloning and sub cloning , Site-Directed Mutagenesis, Western Blots and co Immunoprecipitation, Transient and Stable transfections, Reporter gene assays (Single and Dual luciferase), Mitochondrial function in cells (Using Seahorse instrument), Cell sorting (FACS), chromatin immunoprecipitation (ChIP), ELISA, Bisulfite conversion and pyrosequencing, sectioning, immunohistochemistry and confocal microscopy.
- Mouse colony management: maintained (breeding, genotyping and record keeping) several knockout and transgenic mice colonies. *In vivo* skills, in utero mouse embryo manipulation/survival surgery, injections.