



**Dr. Carlos Eduardo Rodríguez López**  
Researcher at the Integrative Biology Unit  
National System of Researchers Level I

**Contact:**



<https://www.linkedin.com/in/carlos-rodr%C3%ADguez-l%C3%B3pez-318895156/>



[c.e.rodriquez@tec.mx](mailto:c.e.rodriquez@tec.mx)



<https://tec.mx/en/research/institute-obesity-research/integrative-biology-unit>

**Working Experience:**

- Researcher – Institute for Obesity Research, Tecnológico de Monterrey, México (2024 to date)
- Researcher/Lecturer – School of Engineering and Science, Tecnológico de Monterrey, México (2022 - 2024)
- Lecturer – School of Engineering and Science, Tecnológico de Monterrey, México (2022)
- Wissenschaftlicher Mitarbeiter (Researcher) – Max-Planck-Institut für chemische Ökologie, Germany (2019-2022)
- Postdoctoral Scientist – John Innes Centre, England (2017-2019)
- Research Assistant – School of Medicine, Tecnológico de Monterrey, México (2016-2017)

**Degrees:**

- PhD in Biotechnology – Tecnológico de Monterrey (2016)
- BSc in Biotechnology – Tecnológico de Monterrey (2009)

**Research areas:**

- Mass Spectrometry based metabolomics
- RNA-Seq based transcriptomics
- Comparative biochemistry
- Plant Natural Products
- Enzyme discovery
- Cheminformatics
- Chemical diversity of traditional and fallback food from the north-east of México

**Selected publications:**

1. Rodríguez-Lopez C.E.\*, Urrea-López R., García-Valencia L.E., Valiente-Banuet J.I., Trevino V., Díaz de la Garza R.I.\* 2023. Untargeted Metabolomics Unveils the Edaphic Stress Impact on Habanero Pepper Ripening Fruit. ACS Agric. Sci. Technol. <https://doi.org/10.1021/acsagascitech.2c00132> \*Co-corresponding author
2. Rodríguez-Lopez C.E.\*, Jiang Y., Kamileen M.O., Lichman B.R., Hong B., Vaillancourt B., Buell C.R., O'Connor S.E.\* 2022. Phylogeny-aware chemoinformatic analysis of chemical diversity in the Lamiaceae enables iridoid pathway assembly and discovery of aucubin synthase. Molecular Biology and Evolution. <https://doi.org/10.1093/molbev/msac057> \*Co-corresponding author
3. Rodríguez-Lopez C.E., Hong B., Paetz C, Nakamura Y, Koudounas K, Passeri V, Baldoni L, Alagna F\*, Calderini O\*, O'Connor S.E.\* 2021. Two bi-functional cytochrome P450 CYP72 enzymes from olive (*Olea europaea*) catalyze the oxidative C-C bond cleavage in the biosynthesis of secoxy-iridoids - flavor and quality determinants in olive oil. New Phytologist. <https://doi.org/10.1111/nph.16975>

**Awards and recognitions:**

- Head of the Partner Group of the Max Planck Institute for Chemical Ecology at the Tecnológico de Monterrey (2024 – to date)
- National Researcher, Level 1 (2023 – to date)
- First place (team), National Award of Food Science and Technology (México; 2019)

**Current projects:**

- Developing AI-assisted, expression independent methods for enzyme discovery
- Evolution of pigment biosynthesis in the Caryophyllales
- Elucidating the biosynthetic pathway of tricyclic diterpenes in the medicinal plant *Jatropha dioica*
- Characterizing the effect of urbanization in the chemical diversity of endemic plants through ecometabolomics