

## **CVU Dr. Edgar Antonio Rodríguez Negrete**

Licenciado por la Universidad de Guanajuato, México. 1995-2000.

Maestro en Ciencias (Biología Experimental) por el Instituto de Investigaciones en Biología Experimental (IIBE) de la Universidad de Guanajuato, México. 2001-2003.

Doctor en Ciencias (Biotecnología de Plantas) por el Centro de investigación y Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN) Unidad Irapuato, México. 2004-2009.

Posdoctorado por el Instituto de Hortifruticultura Subtropical Mediterranea (IHSM)-Universidad de Málaga, España. 2009-2013

Adscripción Actual (2014-): Instituto Politécnico Nacional. CIIDIR-Unidad Sinaloa. Departamento de Biotecnología Agrícola. Profesor titular A.

SNI: Nivel I

Correo electrónico: [erodriguezn@ipn.mx](mailto:erodriguezn@ipn.mx)

El Dr. Rodríguez Negrete en su productividad científica, cuenta con 32 artículos (JCR), 3 capítulos de libro y 4 artículos de divulgación. Ha participado en 19 proyectos de Investigación y 9 proyectos vinculados con el sector productivo. En formación de recursos humanos ha sido director de dos tesis de Licenciatura nueve tesis de Maestría, y dos tesis de doctorado en curso.

### **Líneas de Investigación.**

Estudio del Silenciamiento Génico mediado por RNA (Gene Silencing) como mecanismo de defensa contra virus fitopatógenos.

Estudio de modificaciones epigenéticas inducidas durante la interacción planta-virus.

Desarrollo de vectores virales de silenciamiento génico.

Desarrollo de herramientas para aislamiento y generación de clones infectivos de virus fitopatógenos.

Estudio de interacción virus-planta.

## Artículos y capítulos de libros.

1. Santos-Cervantes, M.E., Palafox-Leal, N.L., Castillo-Batista, J.C., González-Castillo, A., Gómez-Gil, B., Méndez-Lozano, J., Rodríguez-Negrete, E.A., Cervantes Cárdenas, L.A., Leyva-López, N.E. First Report of *Pectobacterium polaris* Causing Aerial Stem Rot of Potato in Mexico (2024) *Plant Disease*, 108 (1), p. 202. DOI: 10.1094/PDIS-07-23-1394-PDN
2. Guevara-Rivera, E.A., Rodríguez-Negrete, E.A., Lozano-Durán, R., Bejarano, E.R., Torres-Calderón, A.M., Arce-Leal, Á.P., Leyva-López, N.E., Méndez-Lozano, J. From Metagenomics to Ecogenomics: NGS-Based Approaches for Discovery of New Circular DNA Single-Stranded Viral Species (2024) *Methods in Molecular Biology*, 2732, pp. 103-117. DOI: 10.1007/978-1-0716-3515-5\_7
3. Rodríguez-Negrete, E.A., Grande-Pérez, A. Quantification of Virion-Sense and Complementary-Sense DNA Strands of Circular Single-Stranded DNA Viruses (2024) *Methods in Molecular Biology*, 2724, pp. 93-109. DOI: 10.1007/978-1-0716-3485-1\_8
4. Palafox-Leal, N.L., Castillo Batista, J.C., Santos-Cervantes, M.E., Méndez-Lozano, J., Rodríguez-Negrete, E.A., Cervantes-Cárdenas, L.A., Leyva-López, N.E. *Pectobacterium punjabense* causing soft rot and blackleg of potato in Sinaloa, Mexico. (2024) *European Journal of Plant Pathology*, 168 (1), pp. 29-37. DOI: 10.1007/s10658-023-02725-9
5. Rodríguez-Negrete, E.A., Guevara-Rivera, E.A., Arce-Leal, Á.P., Leyva-López, N.E., Méndez-Lozano, J. A novel tomato spotted wilt virus isolate encoding a noncanonical NSm C118F substitution associated with Sw-5 tomato gene resistance breaking. (2023) *Molecular Plant Pathology*, 24 (10), pp. 1300-1311. DOI: 10.1111/mpp.13371
6. Bojórquez-Orozco, A.M., Arce-Leal, Á.P., Montes, R.A.C., Santos-Cervantes, M.E., Cruz-Mendivil, A., Méndez-Lozano, J., Castillo, A.G., Rodríguez-Negrete, E.A., Leyva-López, N.E. Differential Expression of miRNAs Involved in Response to *Candidatus Liberibacter asiaticus* Infection in Mexican Lime at Early and Late Stages of Huanglongbing Disease. (2023) *Plants*, 12 (5), art. no. 1039. DOI: 10.3390/plants12051039
7. Guevara-Rivera, E.A., Rodríguez-Negrete, E.A., Aréchiga-Carvajal, E.T., Leyva-López, N.E., Méndez-Lozano, J. From Metagenomics to Discovery of New Viral Species: *Galium Leaf Distortion Virus*, a Monopartite Begomovirus Endemic in Mexico. (2022) *Frontiers in Microbiology*, 13, art. no. 843035. DOI: 10.3389/fmicb.2022.843035
8. López-Márquez, D., Del-Espino, A., López-Pagán, N., Rodríguez-Negrete, E.A., Rubio-Somoza, I., Ruiz-Albert, J., Bejarano, E.R., Beuzón, C.R. MiR825-5p targets the TIR-NBS-LRR gene *MIST1* and down-regulates basal immunity against

*Pseudomonas syringae* in *Arabidopsis*.(2021) *Journal of Experimental Botany*, 72 (20), pp. 7316-7334.DOI: 10.1093/jxb/erab354

9. Rodríguez-Negrete, E.A., Jordan-Ramírez, R., Leyva-López, N.E., Méndez-Lozano, J. Cucurbit leaf crumple virus associated to watermelon disease in Campeche State, Mexico.(2021) *Plant Disease*, 105 (4), p. 1235. DOI: 10.1094/PDIS-12-20-2551-PDN

10. Luna, A.P., Romero-Rodríguez, B., Rosas-Díaz, T., Cerero, L., Rodríguez-Negrete, E.A., Castillo, A.G., Bejarano, E.R. Characterization of Curtovirus V2 Protein, a Functional Homolog of Begomovirus V2. (2020) *Frontiers in Plant Science*, DOI: 10.3389/fpls.2020.00835

11. Arce-Leal, Á.P., Bautista, R., Rodríguez-Negrete, E.A., Manzanilla-Ramírez, M.Á., Velázquez-Monreal, J.J., Méndez-Lozano, J., Bejarano, E.R., Castillo, A.G., Claros, M.G., Leyva-López, N.E. De novo assembly and functional annotation of *Citrus aurantifolia* transcriptome from *Candidatus Liberibacter asiaticus* infected and non-infected trees. (2020) *Data in Brief*, 29, art. no. 105198. DOI: 10.1016/j.dib.2020.105198

12. Arce-Leal, A.P., Bautista, R., Rodríguez-Negrete, E.A., Manzanilla-Ramírez, M.A., Velázquez-Monreal, J.J., Santos-Cervantes, M.E., Méndez-Lozano, J., Beuzón, C.R., Bejarano, E.R., Castillo, A.G., Gonzalo Claros, M., Leyva-López, N.E. Gene expression profile of mexican lime (*Citrus aurantifolia*) trees in response to huanglongbing disease caused by *Candidatus liberibacter asiaticus*. (2020) *Microorganisms*, 8 (4), art. no. 528. DOI: 10.3390/microorganisms8040528

13. Rodríguez-Gandarilla, M.G., Rodríguez-Negrete, E.A., Rivera-Bustamante, R.F. Superinfection by PHYVV alters the recovery process in PepGMV-infected pepper plants. (2020) *Viruses*, 12 (3), art. no. 286. DOI: 10.3390/v12030286

14. Morales-Aguilar, J.J., Rodríguez-Negrete, E.A., Camacho-Beltrán, E., López-Luque, C.A., Leyva-López, N.E., Jiménez-Díaz, F., Voloudakis, A., Santos-Cervantes, M.E., Méndez-Lozano, J. Identification of Tomato yellow leaf curl virus, Pepper huasteco yellow vein virus and Pepper golden mosaic virus associated with pepper diseases in northern Mexico. (2019) *Canadian Journal of Plant Pathology*, 41 (4), pp. 544-550. DOI: 10.1080/07060661.2019.1591509

15. Rodríguez-Negrete, E.A., Morales-Aguilar, J.J., Domínguez-Duran, G., Torres-Devora, G., Camacho-Beltrán, E., Leyva-López, N.E., Voloudakis, A.E., Bejarano, E.R., Méndez-Lozano, J. High-throughput sequencing reveals differential begomovirus species diversity in non-cultivated plants in northern-pacific Mexico (2019) *Viruses*, 11 (7), art. no. 594. DOI: 10.3390/v11070594

16. Camacho-Beltrán, E., Pérez-Villarreal, A., Leyva-López, N.E., Rodríguez-Negrete, E.A., Cenicerros-Ojeda, E.A., Méndez-Lozano, J.

Occurrence of tomato brown rugose fruit virusinfecting tomato crops in Mexico. (2019) *Plant Disease*, 103 (6).DOI: 10.1094/PDIS-11-18-1974-PDN

17. Arce-Leal, Á.P., Leyva-López, N.E., Santos-Cervantes, M.E., Rodríguez-Negrete, E.A., Méndez-Lozano, J., Manzanilla-Ramírez, M.Á., Perea-Flores, M.J. Changes in carbohydrate metabolism associated to *Candidatus Liberibacter asiaticus* infection in Mexican lime (*Citrus aurantifolia*) [Cambios en el metabolismo de carbohidratos asociados a la infección por *Candidatus Liberibacter asiaticus* en limón Mexicano (*Citrus aurantifolia*)]. (2019) *Agrociencia*, 53 (4), pp. 593-604.

18. Mendoza-Figueroa, J.S., Badillo-Ramírez, I., Kvarnheden, A., Rosas-Ramírez, D.G., Rodríguez-Negrete, E.A., Méndez-Lozano, J., Saniger, J.M., Soriano-García, M. The Peptide AmPep1 Derived from Amaranth Recognizes the Replication Hairpin of TYLCV Disturbing Its Replication Process in Host Plants. (2019) *Journal of Agricultural and Food Chemistry*, 67 (33), pp. 9241-9253.. DOI: 10.1021/acs.jafc.9b02526

19. Moreno-Félix, M.L., Rodríguez-Negrete, E.A., Meléndrez-Bojórquez, N., Camacho-Beltrán, E., Leyva-López, N.E., Méndez-Lozano, J. A new isolate of Pepper huasteco yellow vein virus (PHYVV) breaks geminivirus tolerance in tomato (*Solanum lycopersicum*) commercial lines. (2018) *Acta Horticulturae*, 1207, pp. 35- DOI: 10.17660/ActaHortic.2018.1207.4

20. Mendoza-Figueroa, J.S., Kvarnheden, A., Méndez-Lozano, J., Rodríguez-Negrete, E.-A., Arreguín-Espinosa de los Monteros, R., Soriano-García, M. A peptide derived from enzymatic digestion of globulins from amaranth shows strong affinity binding to the replication origin of Tomato yellow leaf curl virus reducing viral replication in *Nicotiana benthamiana*. (2018) *Pesticide Biochemistry and Physiology*, 145, pp. 56-65. DOI: 10.1016/j.pestbp.2018.01.005

21. Domínguez-Durán, G., Rodríguez-Negrete, E.A., Morales-Aguilar, J.J., Camacho-Beltrán, E., Romero-Romero, J.L., Rivera-Acosta, M.A., Leyva-López, N.E., Arroyo-Becerra, A., Méndez-Lozano, J. Molecular and biological characterization of Watermelon chlorotic stunt virus (WmCSV): An Eastern Hemisphere begomovirus introduced in the Western Hemisphere. (2018) *Crop Protection*, 103, pp. 51-55. DOI: 10.1016/j.cropro.2017.09.006

22. Luna, A.P., Rodríguez-Negrete, E.A., Morilla, G., Wang, L., Lozano-Durán, R., Castillo, A.G., Bejarano, E.R. V2 from a curtovirus is a suppressor of post-transcriptional gene silencing. (2017) *Journal of General Virology*, 98 (10), art. no. 000933, pp. 2607-2614. DOI: 10.1099/jgv.0.000933

23. Arratia-Castro, A.A., Santos-Cervantes, M.E., Arce-Leal, Á.P., Espinoza-Mancillas, M.G., Rodríguez Negrete, E.A., Méndez-Lozano, J., Arocha-Rosete, Y., Leyva-López, N.E. Detection and quantification of 'Candidatus *Phytoplasma asteris*' and 'Candidatus *Liberibacter asiaticus*' at early and late stages of Huanglongbing

disease development. (2016) *Canadian Journal of Plant Pathology*, 38 (4), pp. 411-421. DOI: 10.1080/07060661.2016.1243586

24. Sánchez-Campos, S., Rodríguez-Negrete, E.A., Cruzado, L., Grande-Pérez, A., Bejarano, E.R., Navas-Castillo, J., Moriones, E. Tomato yellow leaf curl virus: No evidence for replication in the insect vector *Bemisia tabaci*. (2016) *Scientific Reports*, 6, art. no. 30942. DOI: 10.1038/srep30942

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26. Melendrez-Bojorquez, N., Magallanes-Tapia, M.A., Armenta-Anaya, C., Camacho-Beltrán, E., Rodríguez-Negrete, E.A., Leyva-López, N.E., Méndez-Lozano, J. Pepper huasteco yellow vein virus associated to sweet pepper disease in Sinaloa, Mexico. (2016) *Plant Disease*, 100 (11). DOI: 10.1094/PDIS-02-16-0226-

27. Cañizares, M.C., Rosas-Díaz, T., Rodríguez-Negrete, E., Hogenhout, S.A., Bedford, I.D., Bejarano, E.R., Navas-Castillo, J., Moriones, E. *Arabidopsis thaliana*, an experimental host for tomato yellow leaf curl disease-associated begomoviruses by agroinoculation and whitefly transmission. (2015) *Plant Pathology*, 64 (2), pp. 265-271. DOI: 10.1111/ppa.12270

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29. Trejo-Saavedra, D.L., Rodríguez-Negrete, E.A., Vielle-Calzada, J.P., Rivera-Bustamante, R.F. Gene traps as a tool for identification of plant genes involved in viral infection response [Trampas génicas como herramienta para identificar genes en plantas que responden a la infección por virus]. (2015) *Agrociencia*, 49 (6), pp. 593-612.

30. Rodríguez-Negrete, E., Bejarano, E.R., Castillo, A.G. Using the yeast two-hybrid system to identify protein-protein interactions. (2014) *Methods in Molecular Biology*, 1072, pp. 241-258. DOI: 10.1007/978-1-62703-631-3\_18

31. Rodríguez-Negrete, E.A., Sánchez-Campos, S., Cañizares, M.C., Navas-Castillo, J., Moriones, E., Bejarano, E.R., Grande-Pérez, A. A sensitive method for the quantification of virion-sense and complementary-sense DNA strands of circular single-stranded DNA viruses. (2014) *Scientific Reports*, 4, art. no. 6438. DOI: 10.1038/srep06438

32. Rodríguez-Negrete, E., Lozano-Durán, R., Piedra-Aguilera, A., Cruzado, L., Bejarano, E.R., Castillo, A.G. Geminivirus Rep protein interferes with the plant DNA

methylation machinery and suppresses transcriptional gene silencing. (2013) *New Phytologist*, 199 (2), pp. 464-475. DOI: 10.1111/nph.12286

33. Caracuel, Z., Lozano-Durán, R., Huguet, S., Arroyo-Mateos, M., Rodríguez-Negrete, E.A., Bejarano, E.R. C2 from Beet curly top virus promotes a cell environment suitable for efficient replication of geminiviruses, providing a novel mechanism of viral synergism. (2012) *New Phytologist*, 194 (3), pp. 846-858. DOI: 10.1111/j.1469-8137.2012.04080.x

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