

CURRICULUM VITAE

Luis Rogelio Cruz Vera

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DEGREES and TRAININGS

B.S. in Chemistry, Autonomous University of Puebla Mexico: 1995.

M.A. in Genetics and Molecular Biology, Center for Research and Advanced Studies (CINVESTAV-IPN), Mexico: 1996.

Ph.D. in Genetics and Molecular Biology, Center for Research and Advanced Studies (CINVESTAV-IPN), Mexico: 2000.

Postdoctoral training. in Gene Expression Regulation, Laboratory of Charles Yanofsky, Stanford University, Stanford USA: 2003-2007.

DISTINCTIONS

Candidate to the National System of Researchers (CONACyT), MEXICO. 2001-2004.

SCHOLARSHIPS

Fellow of the National Science and Technology Council (CONACyT). MEXICO 1993-1999.

Fellow of the National Council of Technology and Sciences (COSNET). MEXICO. 2000-2001.

RESEARCH INTEREST

My research has focused on studying regulation of gene expression, especially those mechanisms involving the function of the ribosome.

ACADEMIC AND RESEARCH APPOINTMENTS

- 1996-2000. Doctoral studies, Center for Research and Advanced Studies, Mexico City, Mexico.
- 2000-2003. Postdoctoral Researcher, Department of Genetics and Molecular Biology, Center for Research and Advanced Studies, Mexico City, Mexico.
- 2003-2006. Postdoctoral Researcher, Department of Biological Sciences, Stanford University.
2007. Research assistant, Department of Biological Sciences, Stanford University.
- 2007-to date Assistant Faculty Professor, Department of Biological Sciences, University of Alabama in Huntsville.

PARTICIPATION IN INTERNATIONAL MEETINGS

Cruz-Vera L. R. and Guarneros G. *Expression analysis of Escherichia coli peptidyl tRNA hydrolase*. Presented at the **Meeting of Molecular Genetics of Bacterial and Phages**, Cold Spring Harbor, New York, August 20-25, 1996.

Cruz-Vera L. R., Hernández J. and Guarneros G. *Role of peptidyl-tRNA hydrolase instability and specific activity on E. coli pth(Ts) thermosensitivity* **Meeting of Molecular Genetics of Bacterial and Phages** University of Wisconsin, Madison. August 3-8, 1999.

Guarneros G., Hernández J. and Cruz-Vera L. R. *The effect of peptidyl-tRNA hydrolase instability on the thermosensitivity of E. coli pth(Ts) mutant*. **Congress of The Ribosome: structure, function antibiotics and cellular interactions**, Helsingør-Denmark, June 13-17, 1999.

Cruz-Vera, L. R., Pérez-Zamorano, B., Hernández-Ramón E. and G. Guarneros. *The minigene codon composition in lethality and peptidyl-tRNA generation*. **RNA 2001. The Sixth Annual Meeting of the RNA Society**. Banff, Alberta, Canada. May 29-June 3, 2001.

PUBLICATIONS

Refereed Journal Articles:

Cruz-Vera, L. R., Toledo I., Hernández-Sánchez, J. and Guarneros, G. (2000). *Molecular Basis for the Temperature Sensitivity of Escherichia coli pth(Ts)*. *J. Bacteriol.* **182**:1523-1528.

Cruz-Vera, L. R., Galindo, J.M. and Guarneros, G. (2002). *Transcriptional analysis of peptidyl-tRNA hydrolase gene in Escherichia coli*. *Microbiol.* **148**: 3457-3466

Rosas-Sandoval, G., Ambrogelly, A., Rinehart, J., Wei, D., **Cruz-Vera, L. R.**, Graham, D. E., Stetter, K. O., Guarneros, G. and Söll, D. (2002). Orthologs of a novel archaeal and of the bacterial peptidyl-tRNA hydrolase are nonessential in yeast. *Proc. Natl. Acad. Sci. U.S.A.* **99**: 16707-16712.

Cruz-Vera, L.R., Hernández-Ramón, E., Pérez-Zamorano., B. and Guarneros, G. (2003). *The rate of peptidyl-tRNA dissociation from the ribosome during minigene expression depends on the nature of the last decoding interaction*. *J. Biol. Chem.* **278**: 26065-26070.

Cruz-Vera, L.R., Magos-Castro MA, Zamora-Romo E, and Guarneros G. (2004) *Ribosome stalling and peptidyl-tRNA drop-off during translational delay at AGA codons*. *Nucleic Acid Res.* **32**: 4462-4468.

Cruz-Vera, L.R., Rajagopal, S., Squires, C., and Yanofsky C. (2005) *Features of ribosome-peptidyl-tRNA interactions essential for tryptophan induction of tna operon expression*. *Mol Cell.* **19**: 333-343. (This publication was reviewed in: Mankin, A. S. [2006] *Nascent peptide in the 'birth canal' of the ribosome*. *Trends Biochem. Sci.* **31**: 11-13.)

Cruz-Vera, L.R., Gong M., and Yanofsky C. (2006). *Changes produced by bound tryptophan in the ribosome peptidyl transferase center in response to TnaC, a nascent leader peptide*. *Proc. Natl. Acad. Sci. U.S.A.* **103**: 3598-3603.

Vivanco-Dominguez, S., **Cruz-Vera, L.R.**, and Guarneros G. (2006). *Excess of charged tRNA^{Lys} maintains low levels of peptidyl-tRNA hydrolase in pth(Ts) mutants at a non-permissive temperature*. *Nucleic Acid Res.* **15**:1564-1570.

Gong, M., **Cruz-Vera, L.R.**, and Yanofsky C. (2007). *RRF and RF3 action promotes TnaC-peptidyl-tRNA drop-off and relieves ribosome stalling during tryptophan induction of tna operon expression in E. coli*. *J. Bacteriol.* **189**: 3147-3155.

Cruz-Vera, L.R., New, A., Squires, C. and Yanofsky C. (2007). *Ribosomal features essential for tna operon induction: tryptophan binding at the peptidyl*

transferase center. J. Bacteriol. **189**: 3140-3146.

Zamora-Romo, E., **Cruz-Vera, L.R.**, Vivanco-Domínguez, S., Magos-Castro, M.A., and Guarneros, G. (2007). *Efficient expression of gene variants that harbour AGA codons next to the initiation codon. Nucleic Acid Res.* **35**:5966-5974.

Chapters in Edited Volumes:

Gabriel Guarneros, Norma Oviedo, José Olivares, Bernardo Pérez-Zamorano and **L. Rogelio Cruz-Vera**. (2000) *Strategies to study distribution and function of minigenes in microorganisms*. Proceedings of the First Workshop on Biological Physics 2000. (Virulh Sa-yakanit, Leif Matsson and Hans Frauenfelder Editors) World Scientific. pp.197-213.