

Edwin Alexander Rodríguez López

Teaching fellow

Chemical analysis, Biochemistry,
Biotechnology.

Chemistry, Universidad Distrital, 2008.
PhD student in Biological Sciences,
Pontificia Universidad Javeriana.

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*“The mind is like a parachute ... It doesn't work
unless it's open”
Albert Einstein*

Major Research Interests

Production of recombinant enzymes and purification of native and heterologous proteins. Molecular biotechnology for biomedical research. Evaluation of enzyme-substrate interactions by using of molecular docking and evaluation of alterations produced in several inborn errors of metabolism by using of systems biology.

Area of Interest: Biotechnology; Molecular Biology; genetic engineering, systems biology and bioinformatics; bioprocesses, medicinal chemistry, biochemistry.

Project

1. Production of fermentable sugars from chrysanthemum residue by using of recombinant enzymes produced in *Saccharomyces cerevisiae*. Researchers: Balkys Quevedo, Carlos Javier Alméciga, Raúl Poutou, Alexander Rodríguez

Selected Publications

2. Olarte-Avellaneda S, **Rodríguez-López A**, Alméciga-Díaz CJ, Barrera LA. Computational analysis of human N-acetylgalactosamine-6-sulfate sulfatase enzyme: an update in genotype-phenotype correlation for Morquio A. 2014. Molecular Biology Reports. In press. DOI 10.1007/s11033-014-3383-3.
3. Amortegui J, **Rodríguez-López A**, Rodríguez D, Carrascal AK, Alméciga-Díaz CJ, Melendez Adel P, Sánchez OF. Characterization of a new bacteriocin from *Lactobacillus plantarum*

- LE5 and LE27 isolated from ensiled corn. 2014. *Appl Biochem Biotechnol.* Apr; 172(7):3374-89. doi: 10.1007/s12010-014-0757-x.
- Gonzalez JC, Medina SC, **Rodríguez A**, Osma JF, Alméciga-Díaz CJ, Sánchez OF. Production of *Trametes pubescens* laccase under submerged and semi-solid culture conditions on agro-industrial wastes. 2013. *PLoS One.* Sep 3;8(9):e73721. doi: 10.1371/journal.pone.0073721.
 - Alejandra Hernandez, Olga Velasquez, Felice Leonardi, Carlos Soto, **Alexander Rodríguez**, Lina Lizaraso, Angela Mosquera, Jorge Bohorquez, Alejandra Coronado, Angela J. Espejo, Rocio Sierra, Oscar Sanchez, Carlos J. Almeciga-Diaz, Luis A. Barrera, Effect of Culture Conditions and Signal Peptide on Production of Human Recombinant N-Acetylgalactosamine-6-Sulfate Sulfatase in *Escherichia coli* BL21. 2013. *Journal of Microbiology and Biotechnology.* vol. 23 (5). pp. 689-698
 - Angela Mosquera; **Alexander Rodríguez**; Carlos Soto; Felice Leonardi; Angela Espejo; Oscar F. Sánchez; Carlos J. Alméciga-Díaz; Luis A. Barrera. Characterization of a recombinant N-acetylgalactosamine-6-sulfate sulfatase produced in *E. coli* for enzyme replacement therapy of Morquio A disease. 2012. *Process Biochemistry.* Article in press. doi.org/10.1016/j.procbio.2012.07.028
 - Carlos Javier Almeciga; Angela Gutierrez; Isabella Bahamon; **Alexander Rodríguez**; Mauro Rodríguez; Oscar Sanchez. Computational analysis of the fructosyltransferase enzymes in plants, fungi and bacteria. 2011. *Gene.* Article in press. doi:10.1016/j.gene.2011.05.024
 - Angela Catalina Sosa, Angela Johana Espejo, **Edwin Alexander Rodríguez**, Lina Maria Lizaraso, Andrea Rojas, Johana Guevara, Olga Yaneth Echeverri and Luis Alejandro Barrera. Development of a sandwich enzyme linked immunosorbent assay (ELISA) for the quantification of iduronate-2-sulfate sulfatase. 2011. *Journal of Immunological Methods.* Volume 368 (1-2). p. 64 - 70. doi:10.1016/j.jim.2011.03.004.
 - Ingrid Johanna Gaitan, Sandra C. Medina, Juan C. Gonzalez, **Alexander Rodríguez**, Angela Espejo, Johann F. Osma, Victor Sarria, Almeciga Diaz C. J., Oscar Fernando Sanchez Medina. Evaluation of Toxicity and Degradation of a Chlorophenol mixture by the Laccase produced by *Trametes pubescens*. 2011. *Bioresource Technology.* Volume 102 p. 3623 – 3625.
 - Alexander Rodríguez**, Ángela J. Espejo, Alejandra Hernández, Olga L. Velásquez, Lina M. Lizaraso, Henry A. Cordoba, Oscar F. Sánchez, Carlos J. Alméciga-Díaz, Luis A. Barrera. Enzyme replacement therapy for Morquio A: an active recombinant N-acetylgalactosamine-6-sulfate sulfatase produced in *Escherichia coli* BL 21. June 27th, 2010. *Journal of Industrial Microbiology and Biotechnology.* Volume 37. p. 1193 – 1201. DOI: 10.1007/s10295-010-0766-x.
 - Ángela J. Espejo, Luis F. Malaver, **Alexander Rodríguez**, Rocío del P. Cuaspa, Carlos J. Alméciga-Díaz, Luis A. Barrera. Recent patents in diagnosis and treatment for inborn errors of metabolism Manuscript Reference: BSP-EMI-2. December 3th, 2009. *Recent Patents on Endocrine, Metabolic & Immune Drug Discovery.* Volume 4, (2). p. 111-130.

Book Chapters

Sergio Olarte Avellaneda, **Edwin Alexander Rodríguez López**, Carlos Javier Alméciga Díaz, “In-silico Analysis of the Active Cavity of N-Acetylgalactosamine-6-Sulfate Sulfatase in Eight Species” in Advances In Computational Biology Proceedings Of The 2nd Colombian Congress On Computational Biology And Bioinformatics (Ccbcol). In Suiza ISBN: 978-3-319-01568-2 ed: Springer. p. 141 – 146, 2013

Edwin Alexander Rodríguez López, Eugenia Espinosa García, Johana María Guevara Morales, Luis Alejandro Barrera A., Olga Yaneth Echeverri Peña, Yeny M. Cuellar, “Academia Metilmalónica” in Errores Innatos del Metabolismo. In: Colombia. ISBN: 978-958-716-465-7. Ed: Editorial Pontificia Universidad Javeriana. p. 123 – 130, 2014

Edwin Alexander Rodríguez López, Fidias Carreño, Diana García, “Academia Propiónica” in Errores Innatos del Metabolismo. In: Colombia. ISBN: 978-958-716-465-7. Ed: Editorial Pontificia Universidad Javeriana. p. 131 – 137, 2014

Johana María Guevara Morales, **Edwin Alexander Rodríguez López**, Olga Yaneth Echeverri Peña, Eugenia Espinosa García, Luis Alejandro Barrera A., Yeny M. Cuellar Fernández, “Academia Glutámica Tipo II o Deficiencia Múltiple de Acil CoA Deshidrogenasas” in Errores Innatos del Metabolismo. En: Colombia. ISBN: 978-958-716-465-7. Ed: Editorial Pontificia Universidad Javeriana. p. 157 – 160, 2014

Edwin Alexander Rodríguez López, Eugenia Espinosa García, Johana María Guevara Morales, Luis Alejandro Barrera A., Olga Yaneth Echeverri Peña, “Academia Láctica” in Errores Innatos del Metabolismo. In: Colombia. ISBN: 978-958-716-465-7. Ed: Editorial Pontificia Universidad Javeriana. p. 161 – 168, 2014.

Awards and Recognition

2013: PhD Scholarship PUJ.

2012: Advances in bioinformatics tools for the analysis of high-throughput omics data. Center for Mathematical Modeling & Center for Genome Regulation. Santiago, Chile. (Fellowship programme of International Center for Genetic Engineering and Biotechnology).

2009: V course of the Latin American school of human and medical genetics. Caxias do sul. Brasil. (Fellowship of Escola latino americana de genética humana e médica).