

Accepted Manuscript

Title: Native American gene continuity to the modern admixed population from the Colombian Andes: implication for biomedical, population and forensic studies

Authors: Angel A. Criollo-Rayó, Mabel Bohórquez, Rodrigo Prieto, Kimberley Howarth, Cesar Culma, Angel Carracedo, on behalf of the CHIBCHA Consortium, Ian Tomlinson, Maria M. Echeverry de Polanco, Luis G. Carvajal Carmona



PII: S1872-4973(18)30076-0
DOI: <https://doi.org/10.1016/j.fsigen.2018.06.006>
Reference: FSIGEN 1904

To appear in: *Forensic Science International: Genetics*

Received date: 20-2-2018
Revised date: 5-6-2018
Accepted date: 5-6-2018

Please cite this article as: Criollo-Rayó AA, Bohórquez M, Prieto R, Howarth K, Culma C, Carracedo A, , Tomlinson I, de Polanco MME, Carvajal Carmona LG, Native American gene continuity to the modern admixed population from the Colombian Andes: implication for biomedical, population and forensic studies, *Forensic Science International: Genetics* (2018), <https://doi.org/10.1016/j.fsigen.2018.06.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Native American gene continuity to the modern admixed population from the Colombian Andes: implication for biomedical, population and forensic studies

Angel A. Criollo-Rayó¹, Mabel Bohórquez¹, Rodrigo Prieto^{1,†}, Kimberley Howarth², Cesar Culma³, Angel Carracedo^{4,5}, on behalf of the CHIBCHA Consortium⁶, Ian Tomlinson², Maria M. Echeverry de Polanco^{1,*}, Luis G. Carvajal Carmona^{1,7,8, 9, 10*}

¹ Grupo de Citogenética, Filogenia y Evolución de Poblaciones, Facultad de Ciencias y Facultad de Ciencias de la Salud, Universidad del Tolima. Ibagué, Colombia.

² Institute of Cancer and Genomics Sciences, University of Birmingham, U.K.

³ Comité Regional Indígena del Tolima, Ibagué, Tolima, Colombia.

⁴ Fundación Pública Galega de Medicina Xenómica (SERGAS)-CIBERER, Universidad de Santiago de Compostela, Santiago de Compostela, Spain.

⁵ Center of Excellence in Genomic Medicine Research, King Abdulaziz University, Jeddah, KSA.

⁶ Members of CHIBCHA Consortium are listed in the Acknowledgements section.

⁷ Fundación de Genética y Genómica, Medellín, Colombia.

⁸ Corporación Universitaria Remington, Medellín, Colombia.

⁹ Genome Center and Department of Biochemistry and Molecular Medicine, School of Medicine, University of California, Davis. GBSF, 451 Health Science Drive Davis, California. 95616-8816.

†[‡]*In memoriam* * MMEdP and LGCC are senior authors in the study.

Corresponding Author

Luis G. Carvajal-Carmona, PhD

Genome Center and Department of Biochemistry and Molecular Medicine

School of Medicine, University of California, Davis

UC Davis Genome Center, 451 Health Sciences Drive

Davis, California 95616, USA

Phone: +1 530-752-9654, Fax: +1 530-754-9658

Email: lgcarvajal@ucdavis.edu

Highlights

- MtDNA suggest a pre/post Columbian genetic continuity in the Colombian Andes.
- Y-chromosome diversity follows a clinal gradient in the studied region.
- Sex-biased/male-driven admixture process, involving Pijao women with European men.
- Admixed closer to Indigenous *resguardos* have a higher Native American ancestry.

ABSTRACT

Andean populations have variable degrees of Native American and European ancestry, representing an opportunity to study admixture dynamics in the populations from Latin America (also known as Hispanics). We characterized the genetic structure of two indigenous (Nasa and Pijao) and three admixed (Ibagué, Ortega and Planadas) groups from Tolima, in the Colombian Andes. DNA samples from 348 individuals were genotyped for six mitochondrial DNA (mtDNA), seven non-recombining Y-chromosome (NRY) region and 100 autosomal ancestry informative markers. Nasa and Pijao had a predominant Native American ancestry at the autosomal (92%), maternal (97%) and

Download English Version:

<https://daneshyari.com/en/article/11000163>

Download Persian Version:

<https://daneshyari.com/article/11000163>

[Daneshyari.com](https://daneshyari.com)