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## CORRELATION BETWEEN POLYMORPHISMS RELATED TO THE HYPOXIA PATHWAY AND TYPE 2 DIABETES MELLITUS

**Jimenez Jimenez C<sup>a</sup>, Rangel Zuniga OA<sup>a</sup>, Lara Chica M<sup>a</sup>, Morrugares R<sup>a</sup>, Munoz E<sup>a</sup>, Lopez Miranda J<sup>a,b</sup> and Calzado M<sup>a</sup>**<sup>a</sup>University of Cordoba, Spain<sup>b</sup>Reina Sofia University Hospital, Cordoba, Spain

Multicellular organisms require a good oxygen homeostasis for survival. Within the hypoxia pathway, the major regulator is the transcription factor (HIF-1 $\alpha$ ), which regulates homeostasis and plays a very important role in various diseases. Previous studies have reported the importance of this transcription factor (HIF-1 $\alpha$ ) in controlling the most important stages of development of Type 2 Diabetes mellitus (T2DM) and metabolic syndrome (MetS), such as insulin resistance,  $\beta$ -cell dysfunction and finally, adipocyte dysfunction and inflammation. These results could be interesting in analyzing the hypoxia response pathway to find out new predictive biomarkers for these diseases. Prolyl-hydroxylases proteins (PHDs) and one of the ubiquitin-ligases responsible for its regulation, SIAH2 protein, stand out for their importance. In this report, we analyzed the presence of SNPs (Single Nucleotide Polymorphism) in proteins related to the hypoxia pathway associated with the risk of development of diabetes. We studied different SNPs that directly affect functional sites of the proteins related to this pathway. Therefore, we analyzed the impact of these in CORDIOPREV cohort, 989 patients who have suffered a cardiovascular event. Within this cohort, we analyzed a new group of patients who had developed diabetes in the last 5 years after suffering from a cardiovascular event. This cohort was compared to 160 healthy patients and a genotyping was done where their allelic frequency was studied. Four SNPs related to the hypoxia pathway associated with the risk of development of diabetes were identified. Two additional SNPs have been found to be related to metabolic syndrome. Another two could be involved in cardiovascular disease risk augmentation.

### Biography

Carla Jiménez was graduated in Chemistry and Biochemistry by the University of Cordoba in 2012. After a period as a student at the University of Cordoba, I decided to take a Master's degree in Biomedicine from which my first Article came out. Later, I began my research career at the Institute Maimonides for Biomedical Research of Cordoba (IMIBIC) where I am currently completing my doctoral thesis. During these 3 years, I have been actively involved (researcher) in competitive projects of preclinical development, the most important being the project coordinated by the Institute of Health Carlos III (Spain) within the program of Integrated Projects of Excellence where I perform the function of Person in charge of Project.

jcarla.jimenez@gmail.com

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