

6<sup>th</sup> International Conference on

# Genomics & Pharmacogenomics

September 12-14, 2016 Berlin, Germany

## Analysis of DNA methylation of psoriasis patients treated with anti-TNF drugs using bioinformatics tools

**Maria C Ovejero-Benito**

Instituto de Investigación Sanitaria la Princesa, Spain

Psoriasis is a chronic, autoimmune and inflammatory skin disorder related to a combination of genetic, environmental and immune factors that affects to 1.3-2.2% of the world population. This strongly disabling disease interferes with patients' daily life and presents a wide range of comorbidities such as cardiovascular diseases, cancer and depression that can decrease the life expectancy of psoriasis patients. Anti-TNF drugs have been the main biologic drug to treat moderate-to-severe psoriasis so far and its effectiveness can reach 80%. However, the clinical response to the administration of these drugs varies depending on the genetic and the environment of the patient. To understand this phenomenon, analyses of DNA methylation of patients treated with anti-TNF drugs were performed. Blood samples were collected from 72 patients who suffered from moderate to severe psoriasis. DNA extracted from these samples was treated with sodium bisulfite, amplified, labeled, hybridized to methylated and unmethylated probes and microarray scanning platform in HiScanSQ Illumina Inc. HumanMethylation450 BeadChips technology was used as it allows the simultaneous analysis of 485,000 individual CpGs sites. After analyzing the results with bioinformatic tools such as Genome Studio, Circos and R version 3.1.2, significative differences in the degree of methylation of several CpG islands were found. These islands regulate the expression of genes that have not been involved so far in the pathology of psoriasis. These results are very promising because they help to shed light to the mechanisms involved in this disease and path the way to find new drugs to treat psoriasis.

### Biography

Maria C Ovejero-Benito has completed her PhD in 2013 from the Universidad Autonoma de Madrid. Since 2004, she is collaborating in cutting edge projects in areas of cancer, chemistry, neurodegeneration, neurogenesis and epigenetics. She has performed research in institutions such as Cajal Institute, NYU, Universidad de Valencia, LGC, UK and the Spanish Research Council. Her scientific results have been recognized by 6 publications in high-impact factor journals and through 3 presentations and 6 posters in scientific meetings. Currently she carries out projects in Pharmacogenetics in Dr. Abad Lab in Instituto de Investigación Sanitaria la Princesa.

[covejero@salud.madrid.org](mailto:covejero@salud.madrid.org)

### Notes: