

DNA Methylation Pipeline

Analysis of DNA methylation in blood monocytes of severe COVID-19 patients

By: Group 3

Research | [Open access](#) | [Published: 29 November 2022](#)

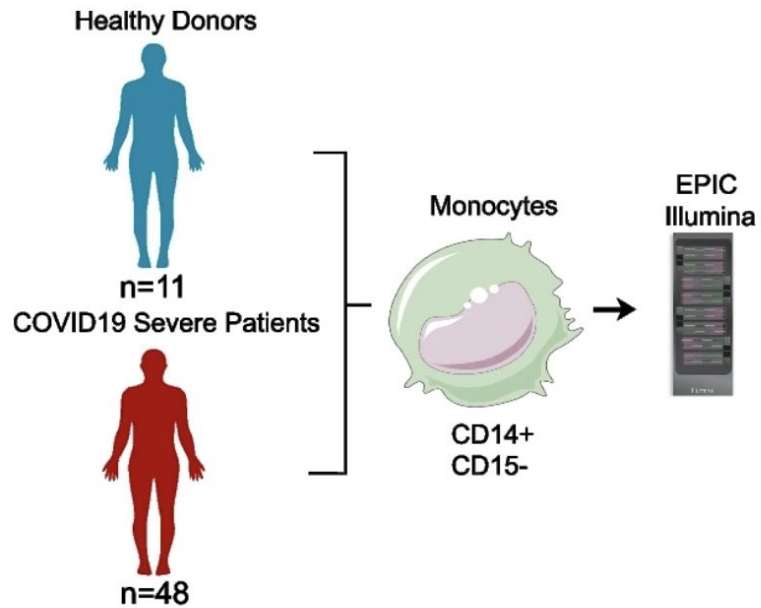
Epigenetic and transcriptomic reprogramming in monocytes of severe COVID-19 patients reflects alterations in myeloid differentiation and the influence of inflammatory cytokines

[Gerard Godoy-Tena](#), [Anis Barmada](#), [Octavio Morante-Palacios](#), [Carlos de la Calle-Fabregat](#), [Ricardo Martins-Ferreira](#), [Anna G. Ferreté-Bonastre](#), [Laura Ciudad](#), [Adolfo Ruiz-Sanmartín](#), [Mónica Martínez-Gallo](#), [Ricard Ferrer](#), [Juan Carlos Ruiz-Rodríguez](#), [Javier Rodríguez-Ubreva](#), [Roser Vento-Tormo](#) & [Esteban Ballestar](#) 

[Genome Medicine](#) **14**, Article number: 134 (2022) | [Cite this article](#)

4226 Accesses | **7** Citations | **11** Altmetric | [Metrics](#)

Experimental Design



DNA Methylation Pipeline

shinyEPICo

Noob

limma

iEVORA

1. QC

Goal: Test the quality of the bisulfite conversion

Quality threshold > 2:

- Red/green ratio calculation

2. Filtering

Goal: Removing features, which introduce some bias

1. CpH and SNPs loci

3. Normalization

Goal: Correcting

Quantile Normalization

- + remove sex chr
- + batch correction

4. DMP

Goal: Identify sites differentially methylated between healthy and COVID

eBayes moderated t-test

- FDR < 0.05
- $\Delta\beta$ of > 0.15

5. DVPs

Goal: Identify differentially variable positions

Bartlett's test
(FDR < 0.001) \rightarrow t-test ($p < 0.05$)

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