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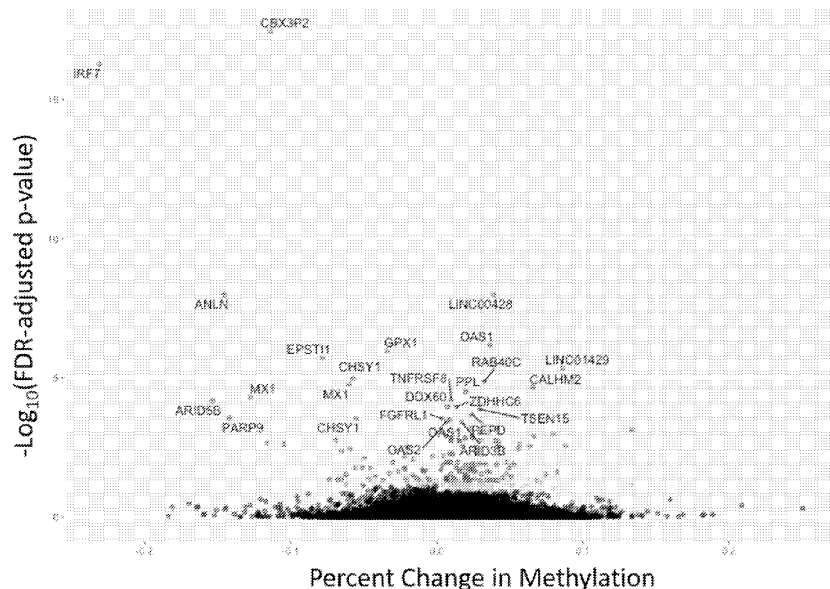


FIG. 2

(57) Abstract: Provided by the inventive concept is a DNA methylation-based platform, and machine learning algorithms, for diagnosing respiratory pathogens including SARS-CoV-2 and predicting COVID-19 related outcomes, and methods of using the same, such as in identifying the presence of a viral infection, such as a SARS-CoV-2 infection, determining whether a subject has COVID-19, and/or whether a subject with COVID-19 is likely to develop acute respiratory distress syndrome or multisystem inflammatory syndrome in children.

[Continued on next page]

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