



Metabolomic analyses reveal new stage-specific features of COVID-19

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This cross-sectional metabolomics study proved that serum metabolite profiles are significantly different in different COVID-19 stages. The TCA and urea pathways may participate in pathological processes associated with COVID-19 progression. <https://bit.ly/3hyB9RK>

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Abstract

The current pandemic of coronavirus disease 2019 (COVID-19) has affected >160 million individuals to date, and has caused millions of deaths worldwide, at least in part due to the unclarified pathophysiology of this disease. Identifying the underlying molecular mechanisms of COVID-19 is critical to overcome this pandemic. Metabolites mirror the disease progression of an individual and can provide extensive insights into their pathophysiological significance at each stage of disease. We provide a comprehensive view of metabolic characterisation of sera from COVID-19 patients at all stages using untargeted and targeted metabolomic analysis. As compared with the healthy controls, we observed different alteration patterns of circulating metabolites from the mild, severe and recovery stages, in both the discovery cohort and the validation cohort, which suggests that metabolic reprogramming of glucose metabolism and the urea cycle are potential pathological mechanisms for COVID-19 progression. Our findings suggest that targeting glucose metabolism and the urea cycle may be a viable approach to fight COVID-19 at various stages along the disease course.

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