Supplementary Information for

The serum metabolome of COVID-19 patients is distinctive and predictive

Supplementary Table 1 The diagnosis of COVID-19-like patients after discharge

COVID-19-like Patients Number	Gender	Age	Diagnosis
Y01	Female	65	H1N1 infection
Y02	Female	44	Mycoplasma pneumonia
Y03	Female	77	Community-acquired pneumonia.
Y04	Female	25	Mycoplasma pneumonia
Y05	Male	74	H1N1 infection
Y06	Male	66	community-acquired pneumonia.
Y07	Male	85	H1N1 infection
Y08	Male	77	Aspiration pneumonia
Y09	Female	39	Fever of unknown
Y10	Female	31	Fever of unknown
Y11	Female	47	H1N1 infection
Y12	Female	31	H1N1 infection
Y13	Female	55	H1N1 infection
Y14	Female	48	Community-acquired pneumonia.
Y15	Female	27	Fever of unknown
Y16	Female	39	Fever of unknown
Y17	Female	41	H1N1 infection
Y18	Female	73	H1N1 infection
Y19	Female	71	Acute gastroenteritis
Y20	Male	54	Acute cholecystitis

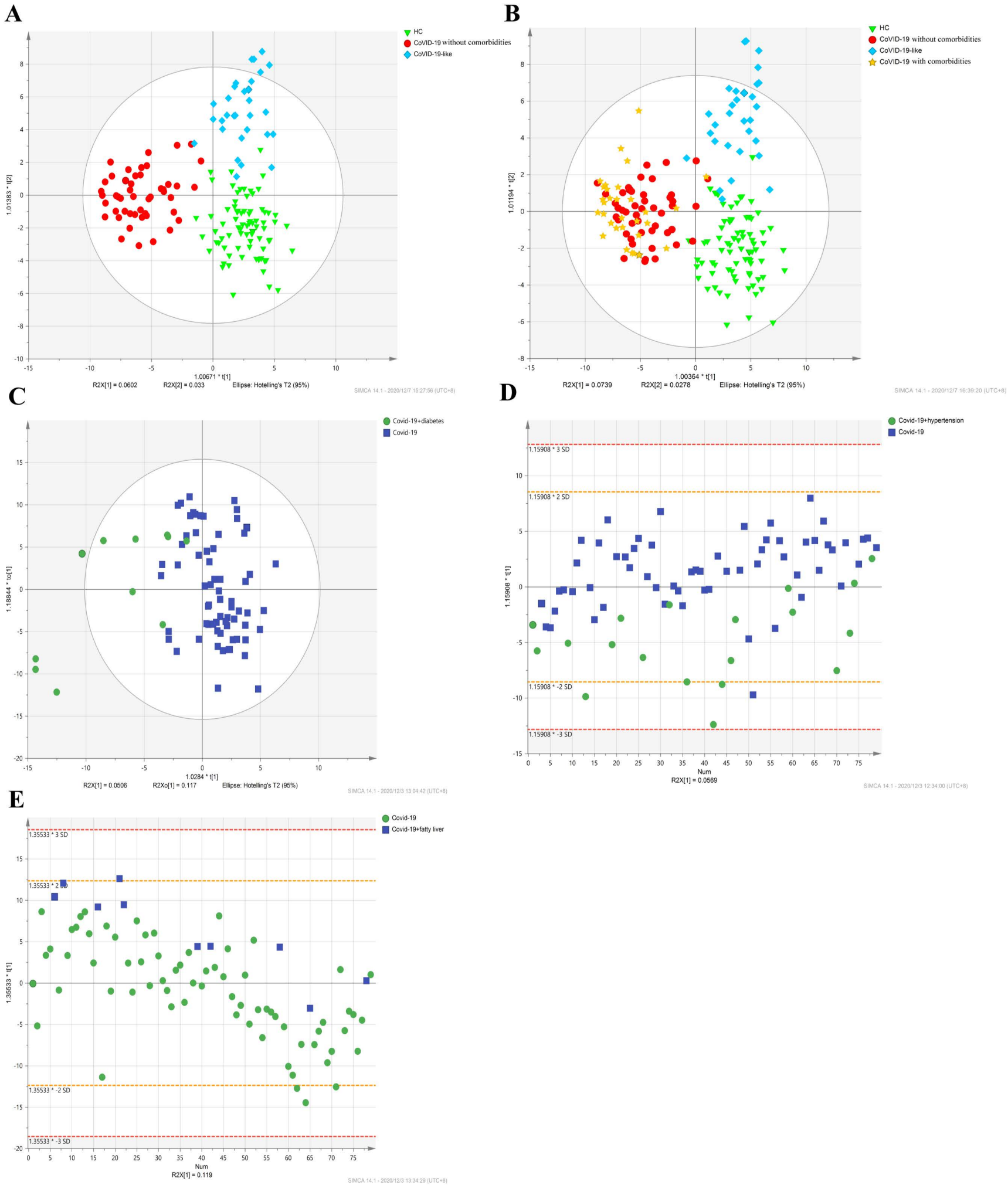
Y21	Male	41	H1N1 infection
Y22	Female	68	Fever of unknown
Y23	Female	65	Community-acquired pneumonia.
Y24	Male	53	H1N1 infection
Y25	Male	63	Mycoplasma pneumonia
Y26	Male	82	Community-acquired pneumonia.
Y27	Male	31	H1N1 infection
Y28	Male	33	Community-acquired pneumonia.
Y29	Male	83	H1N1 infection
Y30	Female	28	H1N1 infection

Supplemental figure legends

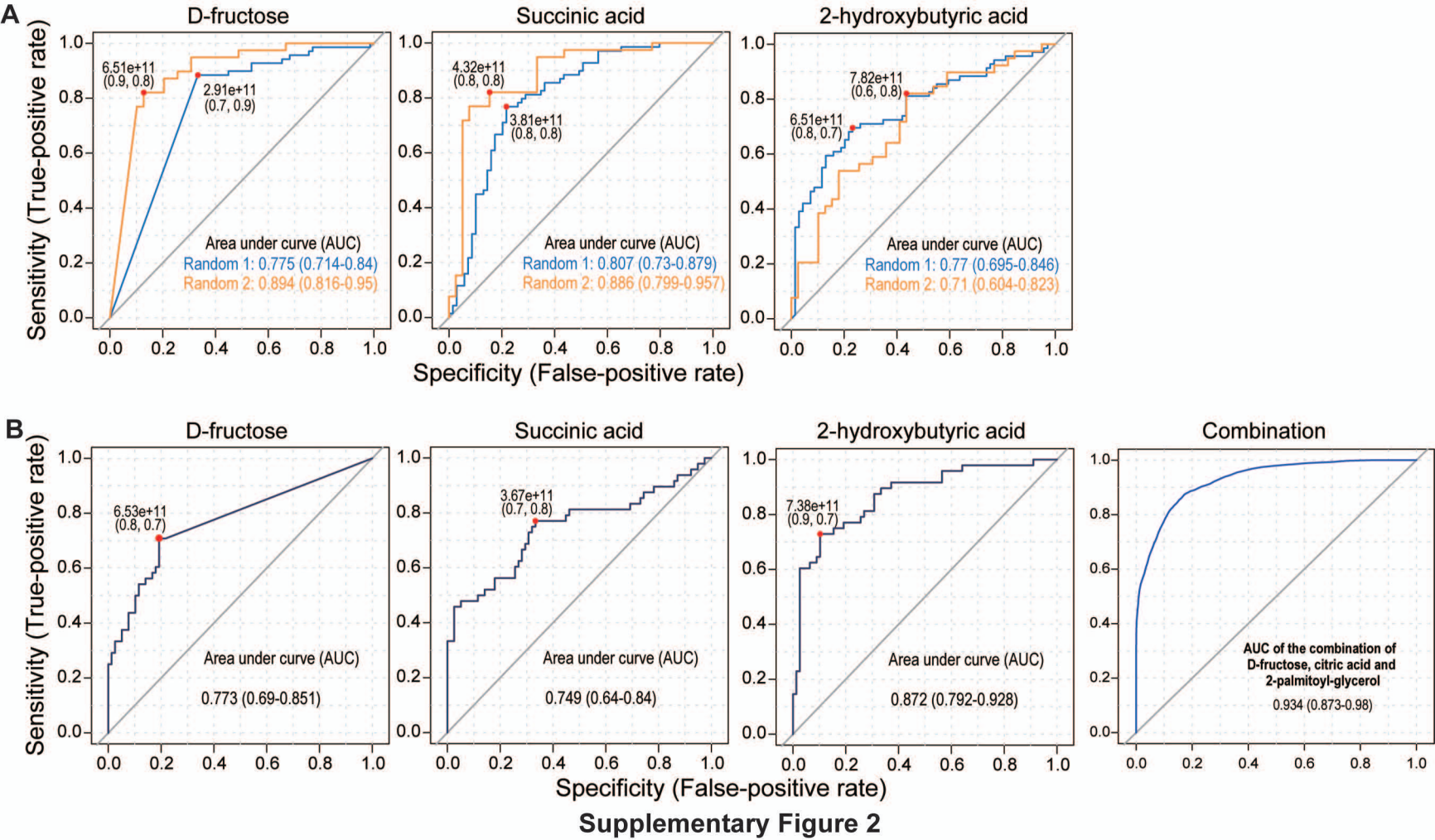
Supplementary Figure 1. (A) OPLS-DA of the metabolome profiles in COVID-19 patients without comorbidities (n = 48), COVID-19-like patients (n = 30) and HCs (n = 78) (B) OPLS-DA of the metabolome profiles in COVID-19 patients with comorbidities (n=31) and without comorbidities (n = 48), COVID-19-like patients (n = 30) and HCs (n = 78). OPLS-DA of the metabolome profile in COVID-19 patients with hypertension (C, n = 19), diabetes (D, n = 11) or fatty liver disease (E, n=10).

Supplementary Figure 2. (A) ROC curves of D-fructose, succinic acid and 2-hydroxybutyric acid for distinguishing COVID-19 patients in the first and second random cohorts. (B) ROC curves of D-fructose, succinic acid， 2-hydroxybutyric acid and the combination of three compounds for distinguishing COVID-19 patients without comorbidities in the rebuild cohort.

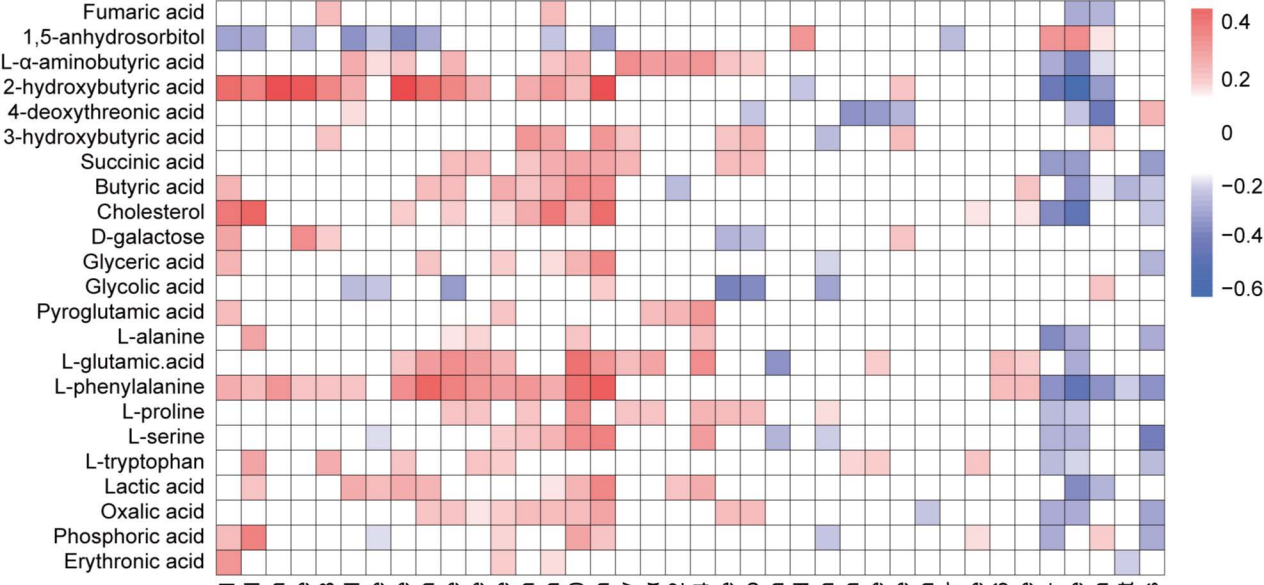
Supplementary Figure 3. Associations between significantly altered clinical parameters and significantly altered metabolites between at least two groups of COVID-19 patients, COVID-19-like patients and HCs in the discovery and validation cohorts except for the three potential metabolic biomarkers.



Supplementary Figure 1



Supplementary Figure 2



Supplementary Figure 3