Table S2
Included studies of network meta-analysis for treatment-emergent adverse events in patients with severe COVID-19.

| Study                  | Intervention and control groups | Events | n   | The ratio of treatment-emergent adverse (%) |
|------------------------|--------------------------------|--------|-----|--------------------------------------------|
| Absalón-Aguilar A et al. 2021 | Colchicine                     | 15     | 56  | 26.79                                      |
| Absalón-Aguilar A et al. 2021 | Placebo                       | 7      | 60  | 11.67                                      |
| Ali S et al. 2021        | C-IVIG                         | 28     | 40  | 70.00                                      |
| Ali S et al. 2021        | SOC                            | 7      | 10  | 70.00                                      |
| AlQAhtani M et al. 2021  | Convalescent plasma            | 2      | 20  | 10.00                                      |
| AlQAhtani M et al. 2021  | SOC                            | 0      | 20  | 0.00                                       |
| Avendano Sola C et al. 2020 | Convalescent plasma           | 6      | 38  | 15.79                                      |
| Avendano Sola C et al. 2020 | SOC                        | 7      | 43  | 16.28                                      |
| Cao B et al. 2020        | Lopinavir/Ritonavir            | 46     | 99  | 46.46                                      |
| Cao B et al. 2020        | SOC                            | 49     | 100 | 49.00                                      |
| Cao Y et al. 2020        | Ruxolitinib/SOC                | 14     | 20  | 70.00                                      |
| Cao Y et al. 2020        | SOC                            | 12     | 21  | 57.14                                      |
| Caricchio R et al. 2021  | Canakinumab                    | 122    | 225 | 54.22                                      |
| Caricchio R et al. 2021  | Placebo                        | 120    | 223 | 53.81                                      |
| Cremer PC et al. 2021    | Mavrilimumab                   | 5      | 21  | 23.81                                      |
| Cremer PC et al. 2021    | Placebo                        | 4      | 19  | 21.05                                      |
| Ely EW et al. 2022       | Baricitinib                    | 44     | 50  | 88.00                                      |
| Ely EW et al. 2022       | Placebo                        | 47     | 49  | 95.92                                      |
| Hernandez-Cardenas C et al. 2021 | Hydroxychloroquine         | 15     | 106 | 14.15                                      |
| Hernandez-Cardenas C et al. 2021 | Placebo                 | 10     | 108 | 9.26                                       |
| Krolewiecki A et al. 2021 | Ivermectin                   | 13     | 30  | 43.33                                      |
| Krolewiecki A et al. 2021 | SOC                          | 5      | 15  | 33.33                                      |
| Lescure FX et al. 2021   | Placebo                        | 55     | 84  | 65.48                                      |
| Lescure FX et al. 2021   | Low dosage sarilumab           | 103    | 159 | 64.78                                      |
| Lescure FX et al. 2021   | High dosage sarilumab         | 121    | 173 | 69.94                                      |
| Rasheed AM et al. 2020   | Convalescent plasma           | 1      | 21  | 4.76                                       |
| Rosas IO et al. 2021     | Tocilizumab                    | 228    | 295 | 77.29                                      |
| Rosas IO et al. 2021     | Placebo                        | 116    | 143 | 81.12                                      |
| Sehgal IS et al. 2021    | Mycobacterium-w               | 0      | 20  | 0.00                                       |
| Sehgal IS et al. 2021    | Placebo                        | 0      | 22  | 0.00                                       |
| Shi L et al. 2021        | UC-MSCs                        | 37     | 65  | 56.92                                      |
| Shi L et al. 2021        | Placebo                        | 21     | 35  | 60.00                                      |
| Simonovich VA et al. 2020 | Convalescent plasma          | 153    | 228 | 67.11                                      |
| Simonovich VA et al. 2020 | Placebo                      | 66     | 105 | 62.86                                      |
| Sivapalasingam S et al. 2021 | Low dosage sarilumab         | 19     | 50  | 38.00                                      |
| Sivapalasingam S et al. 2021 | High dosage sarilumab       | 25     | 51  | 49.02                                      |
| Sivapalasingam S et al. 2021 | Placebo                   | 7      | 25  | 28.00                                      |
| Temesgen Z et al. 2021   | Lenzilumab                     | 68     | 255 | 26.67                                      |
| Study                        | Treatment                  | n1  | n2  | p-value |
|------------------------------|----------------------------|-----|-----|---------|
| Temesgen Z et al. 2021       | Placebo                    | 84  | 257 | 32.68   |
| Veiga VC et al. 2021         | Tocilizumab                | 29  | 67  | 43.28   |
| Veiga VC et al. 2021         | SOC                        | 21  | 62  | 33.87   |
| Davoudi Monfared E et al. 2020 | Interferon-beta/SOC      | 14  | 42  | 33.33   |
| Davoudi Monfared E et al. 2020 | SOC                    | 1   | 39  | 2.56    |

COVID-19= coronavirus disease 2019, C-IVIG= hyperimmune anti-COVID-19 intravenous immunoglobulin, SOC= standard of care, UC-MSCs= human umbilical cord-derived mesenchymal stem cells.