|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coronavirus | S protein length | NTD | CTD | RBM | S1/S2 cleavage site | S2 cleavage site | Fusion peptide 1 | Fusion peptide 2 | Heptad repeat 1 | Heptad repeat 2 | TM | Ref |
| SARS-CoV-2 | 1273 | 14-303 | 334-527 | 437-508 | 680-685 | 808 -820 | 816-837 | 835 -855 | 920 -970 | 1163-1202 | 1214-1237 | NTD, CTD, RBM, FP1, FP2, HR1,HR2, TM domains - UniProt - P0DTC2;S1/S2 and S2 cleavage sites - (Winger and Caspari 2021) |
| SARS-CoV | 1255 | 14-290 | 321-513 | 424-494 | 662-672 | 797-798 | 798-819 | 817-837 | 902-952 | 1145-1184 | 1194-1227 | NTD, CTD, RBM, FP1, FP2, HR1, HR2, TM domains - UniProt – P59594;S1/S2 and S2 cleavage sites -(Yuan et al. 2017);TM domain – (Broer et al. 2006) |
| MERS-CoV | 1353 | 18-351 | 381-587 | 424-454 | 751-752 | 887-888 | 888-909 | 907-929 | 994-1044 | 1246-1285 | 1295-1326 | NTD, CTD, FP1, FP2, HR1,HR2 domains - UniProt – K9N5Q8;RBM - (Hatmal et al. 2020) ;S1/S2 and S2 cleavage sites -(Yuan et al. 2017);TM domain - (Zhou et al. 2019)  |
| HCoV-HKU1 | 1356 | 14-294 | 325-607 | 500-530 | 757 | 900 | 905-926 | 924-944 | 1005-1055 | 1249-1289 |  | NTD, CTD, FP1, FP2, HR1,HR2 domains - UniProt – Q5MQD0;RBM - (Saunders et al. 2023); S1/S2 and S2 cleavage sites -(Kirchdoerfer et al. 2016) |
| HCoV-OC43 | 1362 | 15-302 | 333-607 |  | 754-758 | 903 | 904-925 | 923-943 | 1004-1054 | 1248-1286 |  | NTD, CTD, FP1, FP2, HR1,HR2 domains – UniProt - P36334; S1/S2 cleavage site - (Wang et al. 2022);S2 cleavage site - (Millet and Whittaker 2015) |
| HCoV-NL63 | 1356 | 179-481 | 481-616 | RBM1 493-513 RBM2 531-541 RBM3 585-590 |  | 870 | 934-954 |  | 948-1067 | 1212-1308 |  | NTD, CTD, RBMs - (Wu et al. 2009);S2 cleavage site - (Millet and Whittaker 2015);FP1, HR1, HR2 – UniProt – Q6Q1S2 |
| HCoV-229E | 1173 | 17-268 | 297-434 |  |  | 685-686 | 753-773 |  | 767-886 | 1031-1127 |  | NTD, CTD, S2 cleavage site - (Song et al. 2021);FP1, HR1, HR2 domains – UniProt – P15423 |

**Supplementary Table 1. The lengths and boundaries of S protein structural domains.**

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