

## Ten Facts about the New Virus (SARS-CoV-2)

1. The new virus causing COVID-19 was named **2019-nCoV** or **hCoV-19** at the beginning of the pandemic and was officially renamed to **SARS-CoV-2** on Feb. 11, 2020 by WHO. [\*Click here for the source link.\*](#)
2. SARS-CoV-2 is among the largest RNA viruses. It is **positive -sense, single-stranded, ranging 29.8 kb to 29.9 kb**. It has 4 structural proteins: **S (spike), E (envelope), M (membrane), and N (nucleocapsid) proteins**. The N protein holds the RNA genome, and the other 3 proteins together create the viral envelope.
3. CDC received a clinical specimen collected from the first reported U.S. COVID-19 patient on Jan. 20, 2020, and immediately started to isolate and grow the virus for study. On Feb. 2, CDC started to distribute the SARS-CoV-2 to medical and scientific researchers. [\*Click here for the source link.\*](#)
4. The newest Nature article reviewed **the biology and replication** of SARS-CoV-2, and here is [\*the link for the review article.\*](#)
5. A collaborative effort is on-going by multiple organizations around the world on **Genome Wide Association Studies (GWAS) of COVID-19**, and [\*here is the information site for public download.\*](#)
6. Using data from GISAID, researchers are exploring the accruing mutations in SARS-CoV-2 geographically and over time, with an emphasis on the S protein. [\*Click here to access the webpage COVID-19 Viral Genome Analysis Pipeline.\*](#)
7. By tracking the changes in SARS-CoV-2, a mutation in the S protein, **D614G, was reported to increase infectivity of SARS-CoV-2**, and this SARS-CoV-2 variant has been the prevalent strain of the pandemic in Europe and the U.S. since March of 2020. [\*Click here for the related research paper.\*](#)
8. Another variant, **A222V, is a prevalent circulating strain in Europe** in recent months according to the report posted on a preprint server on October 28, 2020. [\*Here is the link.\*](#)
9. A few **re-infected SARS-CoV-2 cases** have been reported in several countries. A case study with genomic evidence provided was published on Oct. 12. [\*Here is the link to this peer reviewed paper on Lancet.\*](#)
10. With the concern about the length of protection from potential COVID vaccines and the possibility of re-infection for the recovered COVID-19 patients, researchers in Iceland tracked and tested a large number of samples in population and their results indicated that **antiviral antibodies against SARS-CoV-2 did not decline within 4 months after diagnosis**. [\*See the NEJM paper here.\*](#)