## https://science.sciencemag.org/content/369/6511/1553/tab-e-letters

WHO should know the past lessons from SARS and MERS when talking on vaccine

• Yoshiyasu Takefuji, Professor, Keio University

(27 September 2020)

Kai Kupferschmidt wrote an article entitled "Despite obstacles, WHO unveils plan to distribute vaccine" (1). The article is misleading the readers of Science because of neglecting the past lessons from SARS identified in 2003 and MERS in 2012 respectively.

According to WHO, the SARS disease appeared in November 2002 in the Guangdong province of southern China. A total of 8,098 people worldwide became sick with SARS during the 2003 outbreak. Of these, 774 died in the United States. MERS-CoV has infected 2,442 persons and killed 842 worldwide. According to NIH, the SARS disease disappeared in 2004, likely due to intensive contact tracing.

SARS-CoV-2 was named after SARS by WHO on Feb. 11 2020 (2). This virus naming means that SARS-CoV-2 is very similar to SARS-CoV. Both SARS-CoV and SARS-CoV-2 use human ACE2 as entry receptor and human proteases as entry activators (3). This means that COVID-19 has the similar infection transmission as the SARS.

Unfortunately, despite WHO efforts, there is still no vaccine for SARS and MERS (4,5,6,7).

## References:

- 1. Kai Kupferschmidt, Despite obstacles, WHO unveils plan to distribute vaccine, Science 25, Sep 2020: Vol. 369, Issue 6511, pp. 1553
- 2. <a href="https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technica...">https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technica...</a> (covid-2019)-and-the-virus-that-causes-it
- 3. Rossi, G.A., Sacco, O., Mancino, E. et al. Differences and similarities between SARS-CoV and SARS-CoV-2: spike receptor-binding domain recognition and host cell infection with support of cellular serine proteases. Infection (2020). <a href="https://doi.org/10.1007/s15010-020-01486-5">https://doi.org/10.1007/s15010-020-01486-5</a>
- 4. https://www.mountsinai.org/about/newsroom/2020/itn-there-was-no-vaccine-...
- 5. Natalie E. Dean, COVID-19 Data Dives: Why Don't We Have a Vaccine for SARS or MERS?, <a href="https://www.medscape.com/viewarticle/931226">https://www.medscape.com/viewarticle/931226</a>
- 6. Eriko Padron-Regalado, Vaccines for SARS-CoV-2: Lessons from Other Coronavirus Strains, Infect Dis Ther. 2020 Jun; 9(2): 255–274
- 7. Mohamed Boudjelal, Atef Nehdi & Imadul Islam (2020) Why do SARS-COV vaccines not exist? The pharma scientific intelligence and business model must be revisited!, Expert Opinion on Drug Discovery, DOI: 10.1080/17460441.2020.1777980