

Note 2. These viruses mutate very frequently

We all know that flu and cold viruses mutate frequently. The vaccine against the flu has to be “done” twice a year to be up-to-date. For the common cold group of viruses, in more than 60 years we never succeeded at making an effective vaccine. Because they modify themselves (they mutate) very frequently. They mutate even faster than the famous HIV, for which after 30 years of hard research, we only start to test and see the possibility for an effective vaccination.

A recent study (PNAS) analyzing only the latest version of the virus from 160 Covid19 patients already saw 3 major viral groups, and 101 different genetic sequences. All this divergence occurred in patients ONLY and in a few months. Another study (from Johns Hopkins) reports a mutation rate of around 1/1000 RNA bases/yr, this would mean for a 30kbase genome, around 30 variants per year.

While it is likely that scientist can find some sequences in the virus that could be more stable and thus candidates for a vaccine (see Shang ref. below), announcing the vaccine, as the ‘way’ out of this pandemic is absolute mis-information. And actually some mutations may even attenuate the virus, and make it less dangerous, some other mutations may make it spread faster.

A vaccine development may take close to 1 year, and then what? Injections 3 times a year, and having ALL the side effects if we were to rush testing? Dr. A. Fauci (Former Head of Infectious Diseases at the NIH, Bethesda, USA) did mention both a possible but very optimistic timeline.

A world renown authority (Dr. Nabarro, Prof. of Global Health at Imperial College, London, UK) explained in 2 interviews what ALL biologists and virologists know: that we should not let the population assume that vaccination is the solution, and that one can stay safely inside waiting for a near-impossible vaccination. [Quote] *“You don’t necessarily develop a vaccine that is safe and effective against every virus. Some viruses are very, very difficult when it comes to vaccine development - so for the foreseeable future, we are going to have to find ways to go about our lives with this virus as a constant threat”. “That means isolating those who show signs of the disease and also their contacts. Older people will have to be protected. In addition hospital capacity for dealing with cases will have to be ensured. That is going to be the new normal for us all.”* [End quote]

It is important to note that in both cases these persons have no conflict of interest. The bill/cost for a ‘salvation’ vaccine will likely reach between \$ 1-2 B. It is obvious that the industry and the vaccine experts will call for the need to develop a new vaccine. And it is both needed and the right thing to do. However when one reads a recent high profile publication in Nature/NPJ vaccine, some possible genetic sequences are potential candidates for a vaccine (good), but the paper very honestly also lists in Table 1, all the possible pitfalls (not so good). And the list does not include the fact that the virus will ADAPT to the new situation with the vaccine, by mutating and escaping it. **Interestingly those authors mention pneumonia as the cause of their call** (even in the title itself!)

In the same manner, explaining that we could eradicate this virus – this means wiping out the virus FOREVER from the planet - is not correct, even not possible. We could eradicate the Poxvirus totally from our planet, and we are nearing the full eradication of the Poliovirus, only because we – humans – are the only hosts/victims of those 2. But when a virus can choose between species like most members of this family (that can go between humans, bats, pangolins, rodents... but also cats, tigers, dogs...), eradication is just IMPOSSIBLE. We would have to vaccinate all humans, all other animal hosts or animal reservoirs.

References:

- **Phylogenetic Network Analysis of SARS-CoV-2 Genomes.** Forster et al. March 2020, Proceeding of the National Academy of Sciences. <https://doi.org/10.1073/pnas.2004999117>
- Prof. Nabarro’s analysis can be found here: <https://www.theguardian.com/world/2020/apr/18/dont-bet-on-vaccine-to-protect-us-from-covid-19-says-world-health-expert>
- **The outbreak of SARS-CoV-2 pneumonia calls for viral vaccines.** Shang et al. *npj Vaccines* (2020)5:18 ; <https://doi.org/10.1038/s41541-020-0170-0>
- Dr. A. Fauci – numerous press conferences at the White House (USA)
- **Center for Health Security**–Johns Hopkins Bloomberg School of Public Health–SARS-CoV2 Genetics, April 2020.