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HAMBURG DECLARATION 2022

Call for a Global End to High-Risk "Gain-of-Function" Research on Potential Pandemic Pathogens

Conscious of the mission and responsibility of science and research to serve the welfare of humanity, to strive for truth, and to communicate the knowledge gained to the general public, the signatories of this statement wish to call attention to a major threat to human existence that has arisen in recent years as a result of novel bioengineering techniques to modify dangerous pathogens.

Through what is generally understood as "gain-of-function" research, naturally occurring viruses are artificially adapted through changes in gene sequence to facilitate their entry into human cells, either via direct gene editing or simply via accelerated evolution in a process called passaging. This creates an enormous potential for a human pandemic, which responsible scientists and researchers have repeatedly pointed out over the past decade. In recent years, such research has been conducted on various highly dangerous pathogens such as avian influenza viruses and SARS-type coronaviruses. Much of this work has been done as part of publicly funded research projects.

The current coronavirus pandemic clearly shows what happens when pathogens are extremely easily transmitted from person to person. Millions of people have died and the livelihoods of billions of people are threatened or have been lost altogether. This enormous devastation occurred even though the mortality rate of the SARS-CoV-2 virus is comparatively low, at a level of around one percent. However, experiments are currently underway in various laboratories around the world in which much more dangerous viruses such as MERS, Ebola or Nipah viruses are being manipulated via gain-of-function.

Unfortunately, no biotechnology laboratory in the world is safe enough to guarantee that such enhanced viruses will not escape, especially given the functions that may be purposely or accidentally gained and which are often difficult to predict. A catastrophic biosecurity breach with such viruses could be fatal for a substantial proportion of the world population, especially if the transmissibility of highly dangerous viruses via the human respiratory tract is facilitated by genetic modification or some other means.

We as scientists are well aware of the importance of the freedom of science and research, but we nevertheless appeal to all governments in the world to stop such dangerous "gain-of-function" experiments. The risk of a global pandemic associated with this extreme type of research and the potential for the extinction of large portions of the world population is simply not tolerable and never should have been. Additionally we demand that such termination be supervised and continuously monitored by an independent international regulatory agency.

Regardless of the particular form of constitution and government a country may have, every leader must act responsibly and contribute not only to the welfare of the population of his or her own country, but also to that of mankind as a whole. Human beings have learned to intervene in the basic molecular building blocks of nature; this creates many opportunities to preserve lives, but also new ways to terminate them accidentally. Let us take this responsibility seriously before it is too late.

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