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# A vaccine to prevent H1J12 virus pandemic

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ABSTRACT

In September 2018, a new swine-origin influenza virus, termed H1J12, was discovered in Spain. Recent analyses results showed that the H1J12 virus has the potential to quickly spread worldwide through human-to-human transmission and that it is more lethal than any other virus found throughout history. In view of these results, the World Health Organization raised the pandemic alert to the highest level (level 6) on October 1, 2018. The propensity of the virus to primarily affect children, young adults and pregnant women, especially those with an underlying lung or cardiac disease condition, and its extremely high lethality, has prompted the efforts of the pharmaceutical industry and public sector research to develop pandemic H1J12 vaccines. This paper reports on the development of the first vaccine to prevent H1J12 virus pandemic, developed by the Severo Ochoa molecular biology center. The developed vaccine was tested for safety and effectiveness in clinical trials on human volunteers. All of them were found to be safe and to elicit potentially protective antibody responses after the administration of a single dose of vaccine.

## 1. Introduction

Since the global H1N1 influenza virus pandemic of 1918, virus gene reassortment has been documented and observed to occur among human viruses with different subtypes, between human and avian viruses, and among animal (including avian and other animals) viruses. Such reassortant viruses led to the global pandemics of 1957 (H2N2) and 1968 (H3N2) [1,2]. Although A/H1N1 viruses reappeared in 1977 and continued to circulate among humans, …

TODO: Finish the introduction. Ask Yolanda and Francisco to review it.

## 2. Epidemiology and disease burden

The discovery of the H1J12 virus in animals in early September 2018 in Spain came as a total surprise. The virus first emerged in a small farm in Madrid…

## 3. Virology

…

## 4. Vaccine

Vaccines are considered to be one of the most effective tools, not only to prevent the spread of the virus but also to mitigate the severity of illness and the impact of the disease…

## 5. Discussion

The most damaging influenza pandemic in recent history was the 1918…

## References

[1] Taubenberger JK, Reid AH, Lourens RM, Wang R, Jin G, Fanning TG. Characterization of the 1918 influenza virus polymerase genes. Nature 2005;437:889–93.
[2] Rambaut A, Pybus OG, Nelson MI, Viboud C, Taubenberger JK, Holmes EC. The genomic and epidemiological dynamics of human influenza A virus.

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