

# Humabs discovers the first antibody to neutralize both group 1 and group 2 influenza A viruses

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A paper published today in the scientific research journal *Science*, describes a novel, proprietary monoclonal antibody (FI6) discovered in a collaboration between Humabs BioMed SA, the Institute for Research in Biomedicine ("IRB") and the UK Medical Research Council (MRC). FI6 is the first neutralizing antibody that targets all 16 hemagglutinin subtypes of influenza A and represents an important development in the treatment of severe cases of flu, and in finding a universal flu vaccine. The paper also discusses Humabs' high throughput method of selecting rare antibodies from cultured plasma cells.

Historically it has been difficult to isolate [monoclonal antibodies](#) from plasma cells because they do not proliferate or express antibodies on their surface. Using the Humabs' proprietary technology platform, the researchers were able to culture single plasma cells in vitro, and screen hundreds of thousands of [plasma cells](#) in order to isolate the rare ones which produced an antibody of unique specificity.

FI6 is the only antibody that has been discovered to date that binds and neutralizes both Group 1 and Group 2 human and animal influenza A viruses. When used prophylactically or therapeutically FI6 protected mice and ferrets from infection by influenza A virus using multiple mechanisms. Thus FI6 represents a promising drug for prevention and treatment of all [influenza virus](#) infections.

It is estimated that every year millions of people are infected with influenza A, of which a significant number of cases result in death. Influenza A is a quickly evolving virus and the human antibody response is effective against few strains belonging to two (H1 and H3) of the 16 subtypes. New vaccines are developed each year to match these strains; a universal vaccine that could be used every year would be a significant improvement and could help save thousands of lives.

Humabs is in discussions with potential partners to take the antibody into the next stage of development.

Professor Antonio Lanzavecchia, Chief Scientific Officer of Humabs and Director of the IRB, commented: "The high prevalence of seasonal influenza and the unpredictability of new pandemics highlights the need for better treatments that target all influenza viruses. As the first and only antibody which targets all known subtypes of the [influenza A virus](#), FI6 represents an important new treatment option and we look forward to taking it through to the next stage of development. Furthermore, our proprietary antibody isolation platform is delivering a number of high quality preclinical, antibodies and we are building a strong pipeline in infectious and inflammatory diseases."

Sir John Skehel, at the Medical Research Council National Institute for Medical Research, added: "It is estimated that every year millions of people are infected with influenza A viruses and although the majority of infections are mild, those in vulnerable groups, such as the very old or the very young, may be worse affected and more likely to die or be hospitalised. As we saw with the 2009 pandemic, a comparatively mild strain of [influenza](#) can place a significant burden on emergency services. Having a universal treatment which can be given in emergency circumstances would be an invaluable asset."

**More information:** *Science*: 12 August 2011, Volume 333, #6044

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