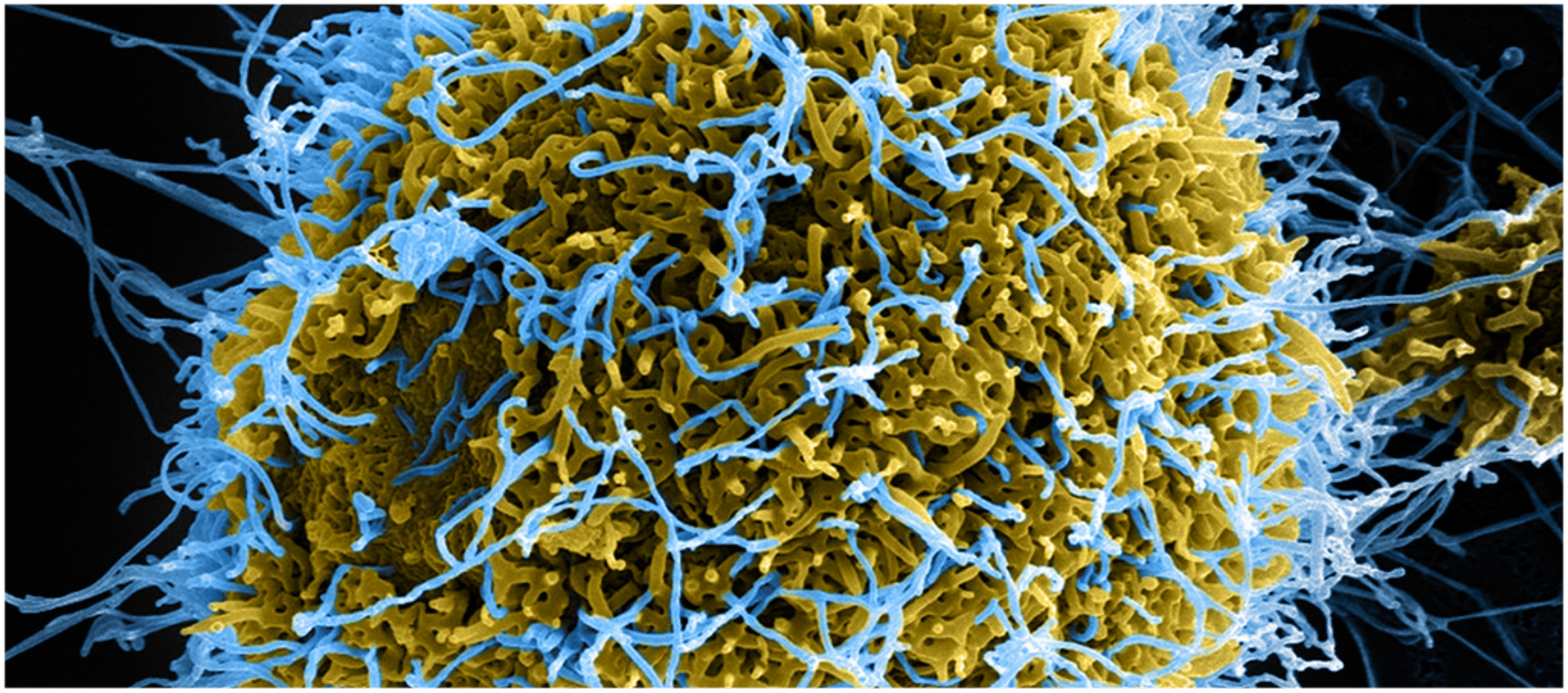

Image of Ebola viruses exiting host cells

HUMAN VIRUSES

& THE LIMITATION OF ANTIVIRAL DRUG AGENTS

MAY 2017

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Infectious viral pathogens are a significant global health threat to mankind

Since the approval of the first antiviral drug in 1963, these therapeutic agents have contributed to save millions of lives. However, antiviral drugs have been unable to keep pace with the emergence of new pathogen threats.

Of the hundreds of viruses that are infectious to humans, only 9 are addressed with an approved antiviral drug agent. Compounding this therapeutic challenge are the three to four new viruses that are discovered to be infectious to humans each year. In recent years, Ebola, SARS, MERS, and Zika were among the many viruses that naturally emerged without a corresponding drug treatment countermeasure.

Infectious Human Viruses

A Significant Threat to Global Health

- In 2013, researchers at Columbia University estimated that there were a minimum of 320,000 infectious mammal viruses awaiting discovery
- 219 viral species had been identified to be infectious to humans as of 2012*
  - Not inclusive of viral strains that underly each virus species
- Three to four new human viruses are identified each year*
- Viruses account for more than two-thirds of new human pathogens*
- Global warming, urban crowding and transcontinental travel are expected to fuel the emergence of future viral pandemics

** Center for Immunity and Evolution, University of Edinburgh*

The economic impact of viral outbreaks

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Beyond the cost of human lives, there are real world economic consequences associated with pandemic outbreaks. In 2003, Severe Acute Respiratory Syndrome (SARS) emerged in China and spread from Hong Kong through international transport hubs to multiple countries within days. While the SARS outbreak was contained to 774 deaths across 37 countries, the economic cost was estimated to be $30 billion over a period of just four months.

Source: U.S. Centers for Disease Control and Prevention (CDC)

Its not a matter of if, but when the next global viral pandemic will occur

Bill Gates was recently quoted as saying there are really only two events that could kill 10 million people. Nuclear war and a biological outbreak, whether intentional or natural occurring. A biological outbreak of this scale has happened before when the Spanish Flu of 1918 infected 500 million people, which resulted in the deaths of an estimated 50 million individuals.*

**Source: U.S. Centers for Disease Control and Prevention (CDC)*

Our therapeutic solution

The Aethlon Hemopurifier®

The Aethlon Hemopurifier® is a candidate treatment countermeasure to address a broad-spectrum of viruses that are not addressed with antiviral drug therapies, including natural occurring pandemic threats and agents of bioterrorism. Additionally, the device provides a strategy to augment the benefit of approved antiviral drug regimens.

The Aethlon Hemopurifier®

A Broad-Spectrum Treatment Countermeasure

Initiated & Completed

☑ >16 *in vitro* viral pathogen validation studies

☑ Four investigational human studies (outside U.S.)

☑ ~150 human treatment experiences

Hepatitis C virus (HCV), HIV and Ebola virus (EBV)

☑ FDA medical device feasibility study concluded on March 13, 2017

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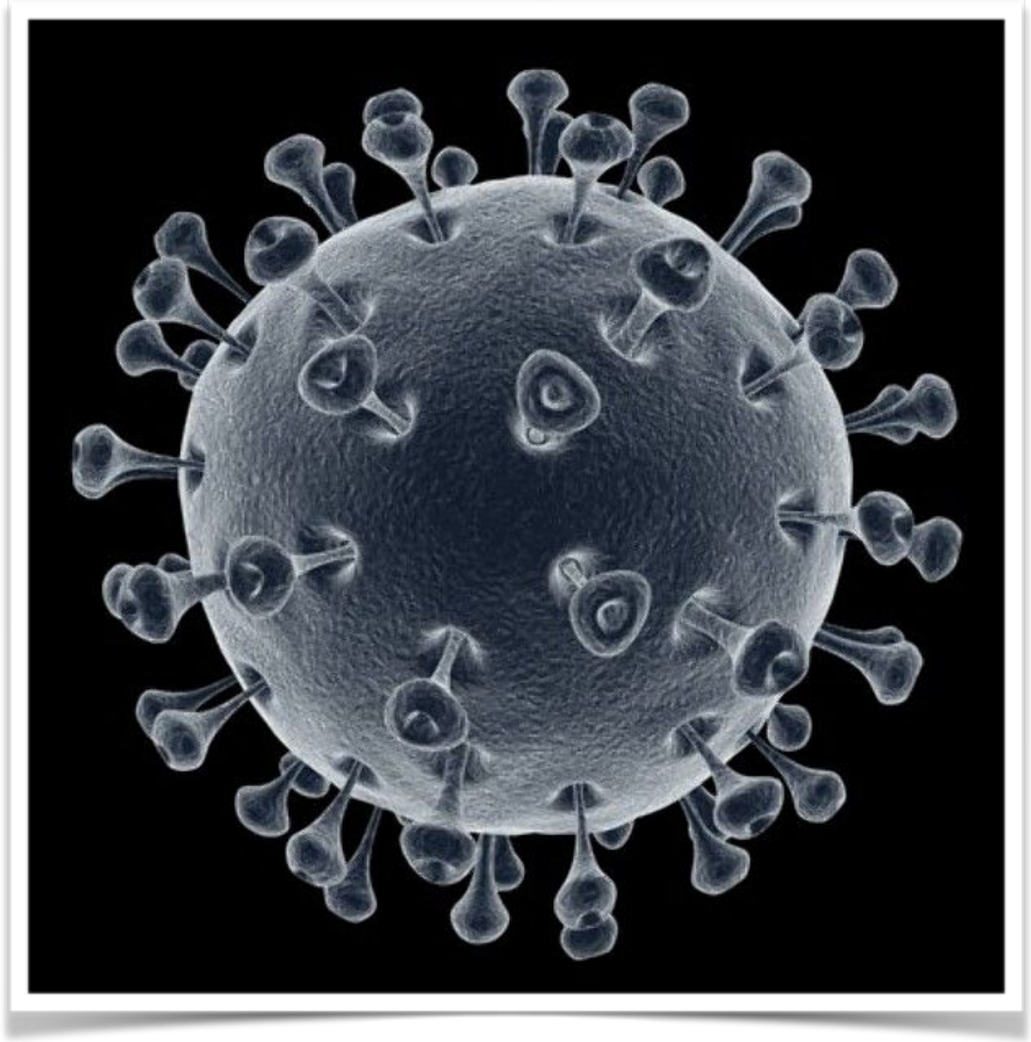
The Hemopurifier® has been validated to capture many of the world's most virulent viral threats

Hemopurifier® in vitro capture validations

Chronic & Latent Viruses

- ☑ Human Immunodeficiency Virus (HIV)
- ☑ Hepatitis C Virus (HCV)
- ☑ Cytomegalovirus (CMV)
- ☑ Epstein-Barr Virus (EBV)
- ☑ Herpes Simplex Virus-1 (HSV-1)



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Hemopurifier® in vitro capture validations

Bioterror & Pandemic Threat Viruses

- ☑ Ebola
- ☑ Lassa
- ☑ MERS-CoV
- ☑ Smallpox (based on Monkeypox & Vaccinia models)

The Hemopurifier after treating an Ebola patient

Hemopurifier® in vitro capture validations

Mosquito-Borne Viruses

- ☑ Chikungunya
- ☑ Dengue
- ☑ West Nile
- ☑ Zika

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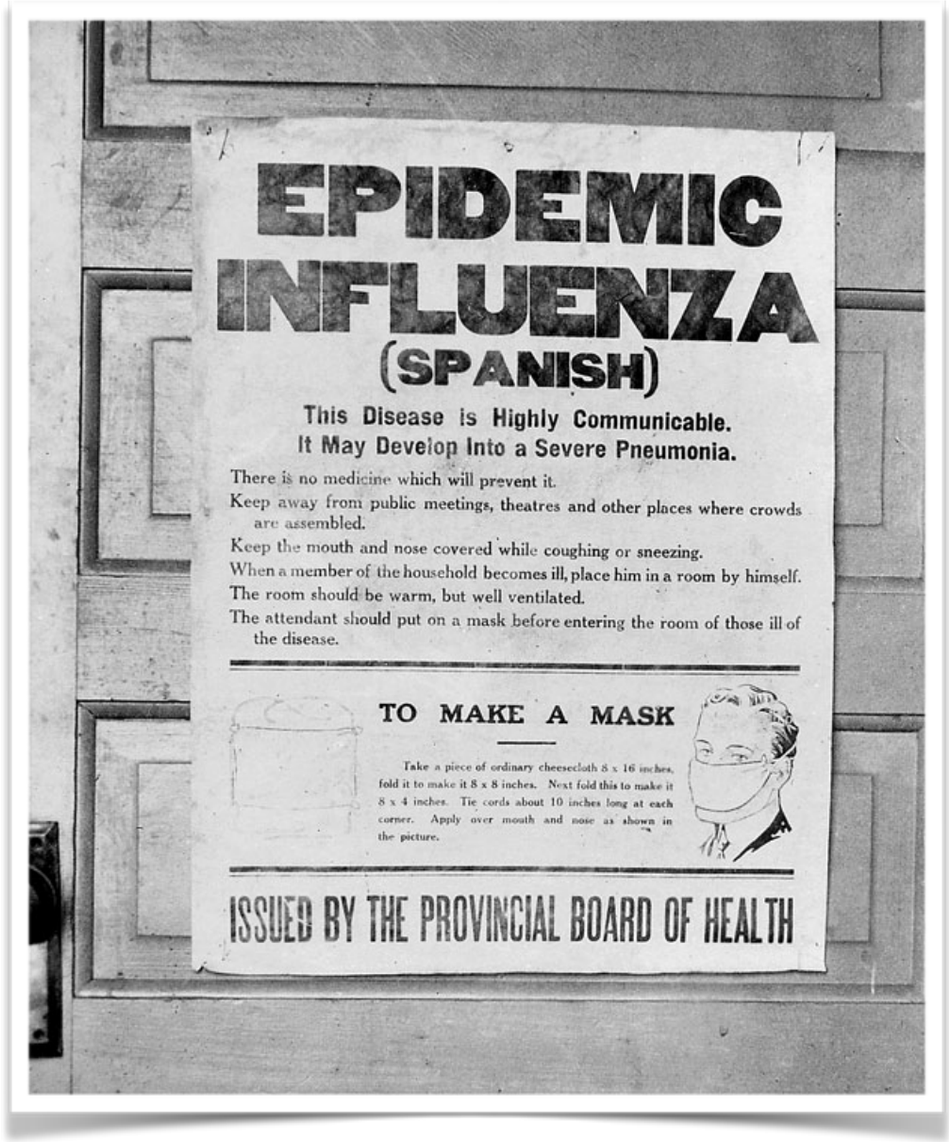
Hemopurifier® in vitro capture validations

Pandemic Influenza Viruses

- ☑ H1N1 Swine Flu
- ☑ H5N1 Bird Flu
- ☑ Spanish Flu of 1918 (reconstructed)

Actual Spanish Flu of 1918 pandemic resulted in approximately 50 million deaths worldwide.



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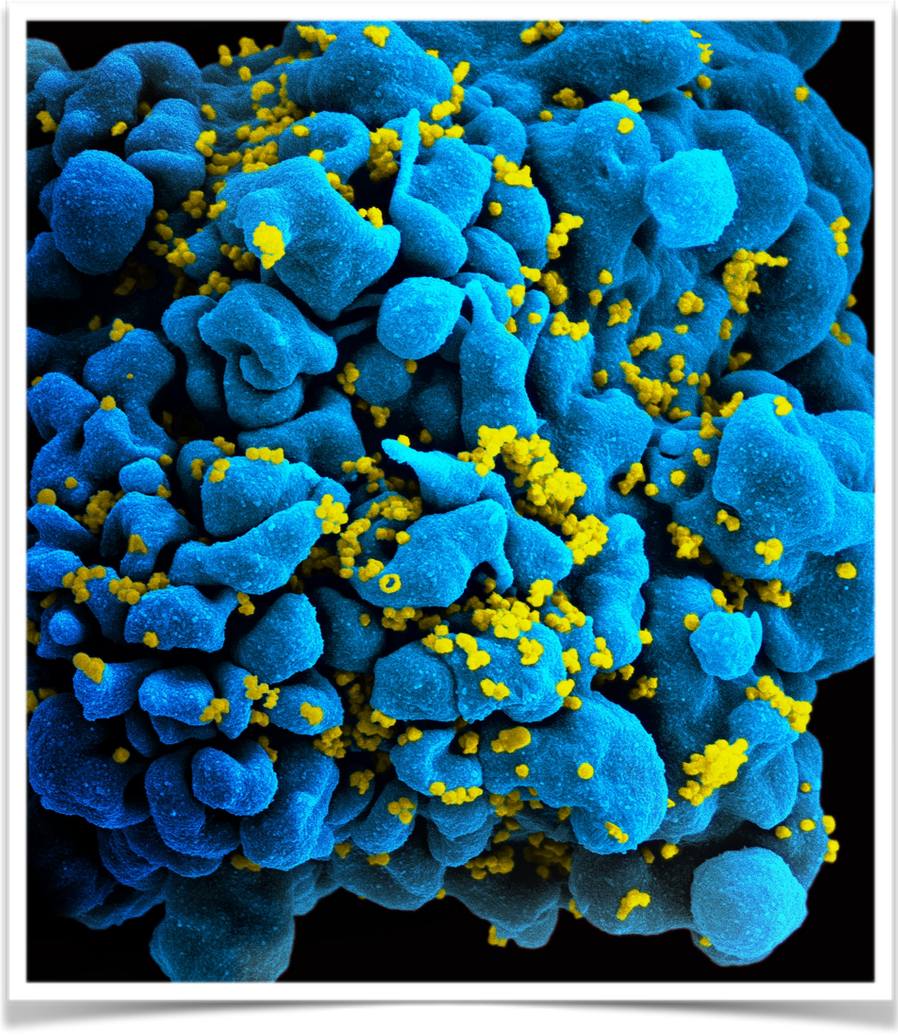
List of viruses with an approved antiviral drug

Viruses with an approved antiviral drug agent

As of April 2016

1. Human Immunodeficiency Virus (HIV)
2. Hepatitis B Virus (HBV)
3. Hepatitis C Virus (HCV)
4. Cytomegalovirus (HCMV)
5. Herpes Simplex Virus (HSV)
6. Human Papillomavirus (HPV)
7. Respiratory Syncytial Virus (RSV)
8. Varicella Zoster Virus (VZV)
9. Influenza Virus (non-virulent strains)



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THIS INFORMATIONAL SUMMARY WAS LAST UPDATED ON MAY 16, 2017

This summary overview has been provided for informational purposes only. It may contain predictions and other forward looking statements that involve risks and uncertainties, including whether and when our products are successfully developed and introduced; market acceptance of the Aethlon Hemopurifier® and other product offerings; regulatory delays, manufacturing delays, and other risks detailed in our SEC filings, which are accessible at www.sec.gov or on our website: www.AethlonMedical.com