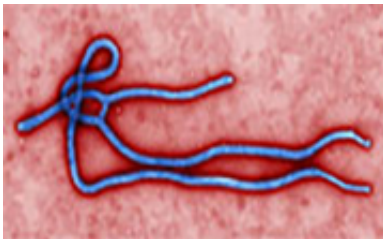


Screening test finds drugs that show promise against Ebola

December 17 2014, by Dennis Thompson, Healthday Reporter



Researchers uncover 53 potential treatments; all are already FDA approved but need more study for this use.

(HealthDay)—A screening test has identified more than 50 drugs that could be helpful in treating people with Ebola, researchers report.

The drugs, which are already approved by the U.S. Food and Drug Administration, all showed promise in preventing the Ebola [virus](#) from entering human cells, where it can cause life-threatening infections.

"These drugs are all approved, so they could be deployed quickly if follow-up research proves that they are effective," said study author Adolfo Garcia-Sastre, director of the Global Health and Emerging Pathogens Institute with the Icahn School of Medicine at Mount Sinai in New York City.

The study was published online Dec. 17 in the journal *Emerging*

Microbes and Infections.

The screening test involves a laboratory-engineered fake Ebola virus. The fake virus contains two proteins from the deadly pathogen, but does not include the infectious genetic material that makes Ebola so dangerous, Garcia-Sastre said.

This Ebola-like particle can enter [human cells](#) as the actual virus does. It provides a safe and effective way for researchers to test drugs that might block Ebola from entering cells, he said.

"We generate an empty Ebola virus shell that from the outside looks identical to Ebola but can be used outside of biocontainment," Garcia-Sastre said.

Researchers used this fake Ebola virus to screen a panel of 600 FDA-approved drugs. These drugs were originally prepared for a cancer treatment project, according to background information from the study. The researchers also did a follow-up screening on nearly 3,000 compounds, according to the study.

From these samples, the researchers identified 53 drugs with potential. These drugs fall into six different categories, including well-known types like antihistamines, antipsychotics and anticancer/antibiotic medications. Others inhibit cell division or block the female hormone estrogen, according to the researchers.

Drugs that are already on the market could prove useful in stemming the tide of the current Ebola epidemic in West Africa, which has claimed the lives of more than 6,800 people and infected nearly 18,500, according to the U.S. Centers for Disease Control and Prevention.

Two medications—a Japanese influenza drug called favipiravir and an

experimental antiviral [drug](#) called brincidofovir—already have been repurposed and used to fight Ebola during this outbreak. "So, there is a chance that other drugs, used for other conditions, will also exist," said Dr. Amesh Adalja, a senior associate at the UPMC Center for Health Security in Baltimore.

By using drugs that already exist, physicians and researchers have something of a leg-up in terms of how to use them, said Dr. Lee Norman, chief medical officer of the University of Kansas Hospital and an expert on Ebola.

"We know about their safety profile. We know what their toxicities are," Norman said. Also, because the drugs are already FDA-approved, the agency likely will quickly agree to their use against Ebola.

However, Norman and Adalja both noted that these drugs will have to be tested against actual Ebola virus in lab monkeys before they can be used to fight the virus out in the real world.

"It is a leap to go from a cell culture in a lab to a living organism like a monkey or a human," Norman said. "To really get to the final answer on which of these could be helpful, you have to elevate it to testing in nonhuman primates."

Garcia-Sastre agreed that this study is only a starting point.

"We have not discovered here the magic bullet against Ebola. We have a collection of potentially active drugs against Ebola that could have a potential impact in treating people with Ebola," he said. "We hope now these drugs will be tested quickly."

More information: For more on the Ebola virus, visit the [U.S. Centers for Disease Control and Prevention](#).

Copyright © 2014 [HealthDay](#). All rights reserved.

Citation: Screening test finds drugs that show promise against Ebola (2014, December 17)
retrieved 3 May 2024 from <https://medicalxpress.com/news/2014-12-screening-drugs-ebola.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--