

Scientists devise strategy in bid to beat viruses

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Scientists have developed a new way to target viruses which could increase the effectiveness of antiviral drugs.

Instead of attacking the [virus](#) itself, the method developed at the University of Edinburgh alters the conditions which viruses need to survive and multiply.

By making the site of infection less hospitable for the virus, the virus becomes less able to mutate and build up resistance to drugs. The researchers were also able to target more than one virus at the same time.

Viruses take up residence in host cells within our body, which produce proteins that enable the virus to multiply and survive.

The study, published in the journal [Proceedings of the National Academy of Sciences](#) (*PNAS*), analysed molecules known as microRNAs, which regulate how much of these proteins are made.

The scientists were able to manipulate the microRNA levels, which enabled them to control a network of proteins and stop viruses from growing.

Most existing antiviral therapies only work against one virus. However, by adapting the virus host environment the researchers were able to target different types of viruses.

It is hoped that the research could lead to new treatments for patients suffering from a range of infections.

Dr Amy Buck, of the University's Centre for Immunity, Infection & Evolution, said: "A problem with current antiviral therapies, which generally target the virus, is that viruses can mutate to become resistant. Since new viral strains emerge frequently, and many infections are difficult to diagnose and treat, it is important to find new ways of targeting infection. Our hope is that we will be able to use host-directed therapies to supplement the natural [immune](#) response and disable viruses by taking away what they need to survive."

Scientists studied the herpes family of viruses, which can also cause cancer with the Epstein-Barr virus, and the Semliki Forest virus, which is mainly spread by mosquitoes.

Both viruses have different characteristics. Viruses from the herpes family replicate inside the nuclei of cells, while the Semliki Forest multiplies outside the nucleus of a cell.

Further research has begun to look at how this method could be used to target influenza.

Provided by University of Edinburgh

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