

@hrbireland funded research @tcddublin has identified how #HIV disarms cells, pointing to new ways to help the body get rid of the virus.

#HRBResearchInAction

### In summary

When your body is attacked by a virus, you produce a substance called interferon to raise the alarm and 'tell' cells to get rid of the virus. With HRB funding, Dr Nigel Stevenson and his group at Trinity discovered that HIV can halt the interferon alarm call by breaking down STAT proteins that normally relay the message. This finding has paved the way for a potential new drug to restore the interferon alarm call when HIV is present, so patients can clear the virus.



## A new approach to outmanoeuvre HIV infection

Lead researcher: Dr Nigel Stevenson, Trinity College Dublin

### The problem

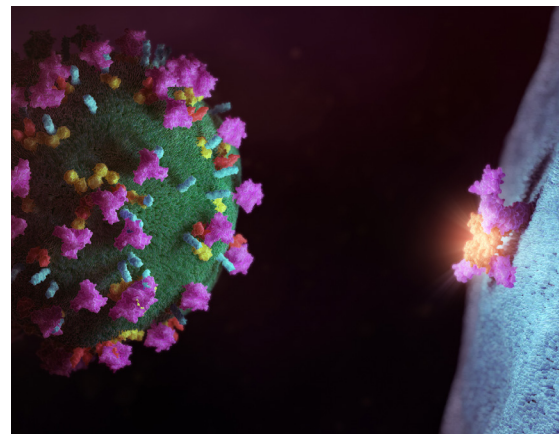
If a person is infected with HIV, even if they have effective treatments to keep the virus in check, some HIV remains in the body. This means the person still has an infection.

### The project

The TCD researchers explored how HIV affects the interferon signalling pathway, and discovered that the virus breaks down key STAT proteins inside cells that normally pass on interferon's message. Thus, the virus can remain.

### The outcomes

- » The study provided a major insight into how HIV disarms the body's natural anti-virus defences.
- » The research has led to subsequent work to develop a therapeutic drug that can restore the interferon pathway in cells, and so reinstate the body's own defences against HIV.
- » A HRB KEDS award allowed the researchers to work with Whipsmart Media, HIV Ireland, Science Gallery Dublin and Nexu Science Communication on a film (to be launched in 2019) about how HIV/AIDS affects lives and the science behind the new discoveries.



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Dr Nigel Stevenson, Assistant Professor at the School of Biochemistry and Immunology in Trinity, says:

"This research has identified a major process by which HIV is targeting the basic interferon signalling pathway in cells, thereby allowing the virus to avoid elimination. This discovery has allowed us to go on to begin designing new therapies aimed at restoring natural immunity, so the body can then attack the virus. It's ambitious, but we hope such an approach might help to completely remove HIV from the body."