New research examines how HIV infections occur on the molecular level

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The UK's National Physical Laboratory (NPL) with the University of Edinburgh and IBM's TJ Watson Research Center have published new research about the structure of an HIV-1 protein that could help to develop new drugs to stop the virus infecting healthy cells.

The research provides a new insight into how the changes in structure of a small part of an HIV protein (a membrane proximal peptide) may alter the infection of the virus into healthy cells. The team was able to observe key changes in this part of the protein implicated in the early stages of the infection by using a combination of powerful experimental and computational tools. This is the first attempt to demonstrate that the inducible binding of the peptide with membrane-like surfaces can serve as a responsive molecular anchor underpinning HIV fusion to target cells.

This information is important as it gives us a better understanding of how HIV infections take hold at the molecular level. Drug designers could use this information to develop treatments that stop HIV from entering a healthy cell and infecting it.

This research is a part of the NPL-led international research project 'Multiscale measurements in biophysical systems', which is jointly funded by NPL and the Scottish Universities Physics Alliance.

The team's journal article detailing this research was selected as the featured article in the January 2011 issue of the journal *Physical*

Chemistry Chemical Physics – the Royal Society of Chemistry's premier forum for physical chemistry research.

Provided by National Physical Laboratory

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