

Protein discovery could switch off cardiovascular disease

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Researchers from Queen Mary, University of London and the University of Surrey have found a protein inside blood vessels with an ability to protect the body from substances which cause cardiovascular disease.

The findings, published online in the journal [Cardiovascular Research](#), have revealed the protein protein pregnane X receptor (PXR) can switch on different protective pathways in the [blood vessels](#).

Co-author Dr David Bishop-Bailey, based at Queen Mary's William Harvey Research Institute, said they found the protein was able to sense a wide variety of drugs, foreign chemicals and food products in the blood and switch on specific pathways to deal with them.

"We've known for a long time that this protein has an important role sorting out waste products in the liver - now we believe it could have an important role in protecting the body against cardiovascular disease," he said.

Dr Karen Swales, based at the University of Surrey, said: "Heart and [circulatory disease](#) is the UK's biggest killer. Discovering that the protein pregnane X receptor (PXR) could protect blood vessels has major implications for the prevention of cardiovascular disease."

"We knew if PXR played similar protective roles in blood vessels to those in the liver, it could protect the vessels from damage caused by [harmful substances](#) in the blood."

The researchers used [human tissue](#) and [blood vessel cells](#) in culture and found PXR was present and active.

Dr Bishop-Bailey added: "We introduced specific PXR activating drugs and saw a co-ordinated increase in metabolising and anti-oxidant enzyme pathways.

"Since blood travels everywhere in the body, PXR has the potential to provide protection not just through its actions in the liver, but anywhere in the entire body. If we can work out how to manipulate PXR to turn on detoxification and antioxidant pathways in blood vessels, we may be a step closer to preventing our nation's biggest killer."

More information: 'Pregnane X receptor regulates drug metabolism and transport in the vasculature and protects from oxidative stress' will be published in the 93-4 edition of *Cardiovascular Research*.

Provided by Queen Mary, University of London

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