

# From the jungle to the lab – the tiny frog that could help fight 70 illnesses

## ... and Queen's experts made the discovery, which brings hope to 8,500 cancer patients and 3,500 diabetics, purely by accident

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A LITTLE-known frog from South America could hold the key to lifesaving treatments for up to 70 devastating medical conditions, Northern Ireland researchers have found.

Scientists from Queen's University in Belfast have discovered the poetically-named Waxy Monkey Frog could be used in the fight against cancer.

They also found that the Giant Fire-bellied Toad, native to China and Vietnam, has the potential to treat an array of diseases including diabetes and stroke.

It will bring hope to the 8,500 people in Northern Ireland diagnosed with cancer each year and more than 3,500 people here who are told each year they have diabetes.

The Queen's boffins stumbled upon the amazing breakthrough – which could revolutionise the treatment of billions of patients around the globe – purely by accident.



**Professor Chris Shaw aims to unlock the potential of nature**

The man who headed up the research, Professor Chris Shaw, said: "The aim of our work at Queen's is to unlock the potential of the natural world – in this case the secretions found on frog and toad skins – to alleviate human suffering.

"We are absolutely convinced that the natural world holds the solutions to many of our problems.

"We just need to pose the right questions to find

them." He added: "It would be a great shame to have something in nature that is potentially the wonder drug to treat cancer and not aim to do everything in our power to make it work."

The team at Queen's was testing a range of proteins taken from secretions from frogs and toads when they made the exciting discovery.

They realised proteins in the secretions, which the frogs and toads use as protection from predators, can control the growth of blood vessels – a process known as angiogenesis.

Professor Shaw explained: "The proteins that we have discovered have the ability to either stimulate or inhibit the growth of blood vessels.

"By switching off angiogenesis and inhibiting blood vessel growth, a protein from the waxy monkey frog has the potential to kill cancer tumours.

"Most cancer tumours can only grow to a certain size before they need blood vessels to grow into the tumour to supply it with vital oxygen and nutrients.

"Stopping the blood vessels from growing will make the tumour less likely to spread and may eventually kill it.

"This has the potential to transform cancer from a terminal illness into a chronic condition."

Professor Shaw said in future surgeons could remove tumours from a patient and the protein from the frog could be used to stop any remaining cancer cells from growing further.

"It wouldn't cure the cancer but it would stop it from developing any further and allow the person to live a normal life," he said.

Prof Shaw said: "On the other hand, a protein from the Giant Fire-bellied Toad has been found to switch on angiogenesis and stimulate blood vessel growth.

"This has the potential to treat conditions that require blood vessels to repair quickly, such as wound healing, organ transplants, diabetic ulcers and damage caused by strokes or heart conditions."





**Natural wonder:  
the waxy monkey  
frog has a protein  
which could halt the  
growth of tumours**

