



Under the Microscope

With Associate Professor Ruth Ganss

Royal Perth Hospital-based researcher Associate Professor Ruth Ganss is leading cutting edge research into the treatment of cancers.

A/Prof Ganss, who relocated from Germany in January 2006 to take up a position in the Western Australian Institute for Medical Research (WAIMR), is exploring new ground in tumour immunology and her research may lead us to life saving cancer treatment in the future.

She has recently discovered a master gene that occurs in blood vessels that surround tumours.

“We believe that by reversing and re-arranging the growth of new blood vessels that give life to tumours, we can enable the body’s immune cells to enter the tumour and fight the cancers,” said A/Professor Ganss.

“Part of the reason tumours continue to grow is because they escape destruction by the immune system.

“This is due to the growth of blood vessels inside the tumour – a process called angiogenesis – which stops disease-fighting cells in their tracks.”

“We’ve now discovered that it is possible to reverse angiogenesis by “normalising” the blood vessels.

“This effectively means the barriers are broken down so these activated immune cells can enter and do a better job inside the tumour.”

On experiments with mice, A/Prof Ganss has been able to isolate and remove a particular gene which is associated with abnormal blood vessels.

“When this gene has been removed the vessels look more normal and we have better success in introducing cancer killing cells into the tumour,” she said.

“So far we can only do it in mice. We need to understand what we are changing in the vessels. Once we know that, the aim will be to manipulate the tumour vessels in humans.”

A/Prof Ganss said the benefits of this type of approach to treating tumours were potentially huge.

“The aim is to use this technique to create highly specific and effective therapies that would only focus on the cancer,” she said.

“As healthy tissues would not be attacked, we believe this treatment would be superior to chemotherapy and lead to fewer side effects for patients.”

A/Prof Ganss is utilising a grant of \$528,000 from the National Health and Medical Research Council to complete her study. This will cover her for three years. Her efforts have also been boosted by an award from the RPH Medical Research Foundation.