Local scientists have developed a drug delivery method that zeros in on cancer cells, cutting out the side-effects of traditional treatments like chemotherapy.

More from Imelda Saad….

Traditional cancer drugs lead to the indiscriminate killing of both diseased and healthy cells.

That's why treatments like chemotherapy come with painful side-effects such as nausea, fatigue and hair loss.

Now scientists at the Institute of Bioengineering and Nanotechnology have found a way to tackle this problem.

They’ve developed what's called smart nanocarriers, which can house anti-cancer drugs in their inner cores.

Once administered, these nanocarriers will form a shell that allows them to stick to tumor sites when they encounter cancer tissues.

The drug-enclosed molecules are released only when the nanocarriers zero in on the tumors.

Group leader Dr Yi-Yan Yang explains that the method works because of biological signals that are tagged to the shells of the nanocarriers.

“As the nanoparticles travel through the blood stream, they will eventually come into contact with tumor tissue. The surface of these nanoparticles has biological signals that can recognize tumor cells, and cause them to bind with these cells. Once the nanoparticles get into the cells, they will release the anticancer drugs.”

The nanoparticles are also pH-sensitive, so they’re able to recognize the acidic environment of a tumor site before releasing the anti-cancer drugs.

Dr Yang and her team are now working on in vitro tests.

She hopes to test the drug delivery system on large animals such as dogs and monkeys before starting on clinical trials in about 5 years.