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**PRESS RELEASE**

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**New breast cancer research shows promise for the future**

A major challenge in cancer research is to find agents that target cancer cells, while leaving healthy cells alone and unharmed. Chemotherapy and radiotherapy treatments can have many undesirable side effects because they damage healthy cells as well.

Prof Annie Joubert, Head of the Department of Physiology at the University of Pretoria (UP), has been on a quest to discover new compounds that target the activity of cancer cells only, using an analogue derived from a natural metabolite of the estrogen steroid hormone, 17 beta-estradiol.

Together with her multidisciplinary internationally collaborative research team, she identified an analogue which is showing very promising results, having a significant impact on cancer cell growth. The compound stops cell growth (known as antiproliferation) of cancer cells, as well as stops the formation of new blood vessels (angiogenesis) without affecting other healthy cells. She explains “with the addition of the compound, or the anti-cancer agent, the cell was stopped in mitosis (cell division), the DNA of the cancer cell was fragmented and cell death (apoptosis) was induced."

 Prof Joubert’s anti-cancer research focuses specifically on breast cancer, the most common malignancy among women in South Africa. Furthermore, from the initial tests done in vitro and ex vitro effects were shown even when administered at low dosages and less frequently. “After only two hours there are signs of the cancer cell being under stress, when the anti-cancer agent is added. After 24 hours, it shows the morphology or cell structure is already very compromised,” said Prof Joubert.

This too constitutes major development in cancer drug research, and hopefully in the future less frequent and less invasive treatment plans can be offered to cancer patients.

Prof Joubert has led a dynamic group of researchers in cancer cellular physiology for many years. Her research specialisation in the in silico-design (cellular modelling via computer simulation) of potential anti-cancer agents has made incredible strides into the improvements of anti-cancer treatment. She has been involved in cancer research collaborations at a national and international level, in academia as well as in industry, and with world class research programmes and cancer research leaders.

She is passionate about research output that will ultimately contribute to and improve the development of the South African and international community.

With the rate of cancer continuing to rise, the crippling effects this will have on a country’s economy is devastating, which is why cancer research such as this is essential and should be prioritised. Breast cancer is the world’s most common cancer among women and the global cancer burden is substantial, and it is on the rise. In South Africa alone, it is predicted that by 2030 there will be an increase of 78% of cancer cases.

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