

Finnish researchers find compound that prevents growth of prostate cancer cells

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Researchers from VTT Technical Research Centre of Finland and the University of Turku have demonstrated that an antibiotic called "monensin" prevents the growth of prostate cancer cells. Monensin is used in the meat and dairy industry, for example.

Evidence pointing to the effects of monensin emerged in a project investigating the effects of nearly 5,000 drugs and micromolecules on the growth of <u>prostate cancer cells</u>. The project involved most of the drugs on the market today. Researchers found that small amounts of compounds – disulfiram (Antabus), thiram, tricostatin A, and monensin – can prevent the growth of prostate cancer cells without significant effects on the growth of the normal human prostate epithelial cells.

Further studies revealed that monensin caused prostate cancer cell death by reducing the amount of testosterone receptor and by increasing production of reactive oxygen species and inducing DNA damage. In addition, monensin was shown to have combined effects with antiandrogens – the drugs suppressing the effects of androgens – in preventing prostate cancer cell growth.

"These research findings give rise to a potential new use for the monensin. The results also demonstrate that the effects of anti-androgens in suppressing the growth of cancer cells can be enhanced by using drugs inducing production of reactive oxygen species", say Senior Research Scientist Kristiina Iljin from VTT and Research Scientist Kirsi Ketola from the University of Turku.



The research findings concerning the effects of drugs and micromolecules were published in the *Clinical Cancer Research* journal in 2009. The effects of monensin on preventing the growth of prostate cancer was published in the *Molecular Cancer Therapeutics* journal in December 2010.

Recently, medical companies have shown great interest in these kinds of projects aiming at finding novel indications for established drugs. Since the dosage and adverse effects of drugs already in use and their combined effects with other drugs are relatively well known, this kind of drug repositioning may result in considerable cost savings.

Prostate cancer is the second most common cause of cancer death in men after lung cancer. It has been estimated that globally about 300,000 men die from <u>prostate cancer</u> every year.

Provided by VTT Technical Research Centre of Finland

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