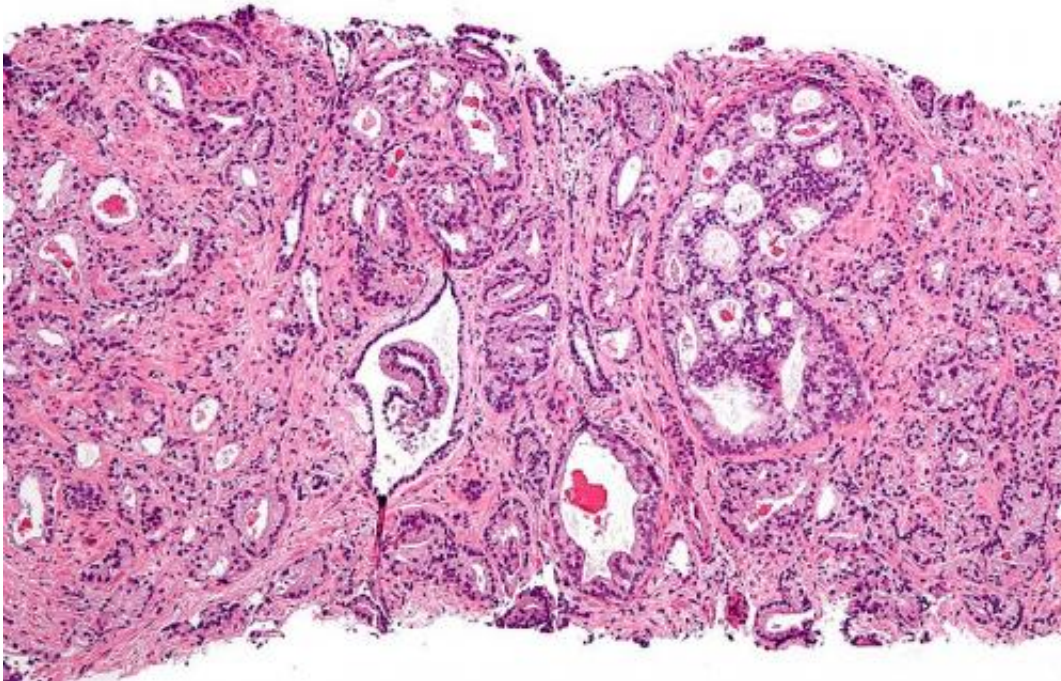


Prostate cancer study shows promise for future treatment

February 4 2019



Micrograph showing prostatic acinar adenocarcinoma (the most common form of prostate cancer) Credit: Wikipedia, [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/)

A new 'seek-and-destroy' gene therapeutic system could have the potential to treat prostate cancer in the future, after it halted the majority of tumours in laboratory models at the University of Strathclyde and the Beatson Institute.

The system was used against two types of [prostate](#) tumour, causing 70

percent of one type and 50 percent of the other to vanish over a period of one month. These results are a promising start for the system as it continues its progress towards the clinic.

Prostate [cancer](#) is the fourth most widespread cancer in the world, the second most common in men and the most commonplace in Europe and North America. It causes the death of 300,000 patients worldwide each year and its incidence has continually increased over the last two decades.

The research has been published in the journal Drug Delivery. It involved researchers from Strathclyde Institute of Pharmacy and Biomedical Sciences, Strathclyde's Department of Pure and Applied Chemistry and the Cancer Research UK Beatson Institute in Glasgow.

Dr. Christine Dufès, a Senior Lecturer in Strathclyde Institute of Pharmacy and Biomedical Sciences, led the research. She said: "Although some treatments, including chemotherapy and radiotherapy, can be effective against localised tumours, there is still no [effective treatment](#) for patients whose cancer recurs or spreads. This means that new therapeutic approaches are urgently needed for these patients.

"Gene therapy could be highly promising for the treatment of prostate cancer, but its use is currently limited by the lack of delivery systems which can selectively deliver the therapeutic genes to the tumours without adverse side effects for healthy tissues.

"To address this, we develop a new 'seek-and-destroy' nanomedicine linked to an iron-carrying protein called lactoferrin, whose receptors are found in large amounts in many cancers. The results show that it is highly promising for the treatment of prostate cancer by [gene therapy](#)."

The research was carried out on two [prostate cancer](#) cell lines, PC-3 and

DU145, in laboratory settings.

The intravenous administration of the nanomedicine treatment resulted in the complete disappearance of 70 percent of the PC-3 tumours and half of the DU145 prostate tumours over one month.

More information: Najla Altwaijry et al. Regression of prostate tumors after intravenous administration of lactoferrin-bearing polypropylenimine dendriplexes encoding TNF- α , TRAIL, and interleukin-12, *Drug Delivery* (2018). [DOI: 10.1080/10717544.2018.1440666](https://doi.org/10.1080/10717544.2018.1440666)

Provided by University of Strathclyde, Glasgow

Citation: Prostate cancer study shows promise for future treatment (2019, February 4) retrieved 2 May 2024 from

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