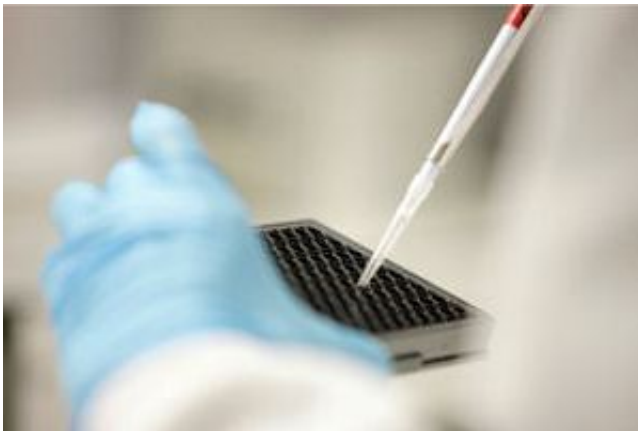


Further evidence of potential for new anti-cancer drug

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Further results could lead directly to clinical evaluation

(Medical Xpress)—Manchester scientists have shown that a new drug inhibits the growth of tumours in the lab and that its effectiveness is improved by combining it with radiotherapy – suggesting a new approach that could be used in the clinic.

Many tumours have regions of hypoxia, where there is a shortage of oxygen. These tumours show a change in energy production – they switch to using glycolysis, which produces [lactate](#) as a by-product.

To prevent it being toxic, this lactate must be transported out of cells by molecules known as monocarboxylate transporters (MCTs).

The [AstraZeneca](#) drug – known as AZD3965 – inhibits one of these molecules, MCT1, in [lung cancer cells](#). Researchers from Manchester Pharmacy School at The University of Manchester – part of the Manchester Cancer Research Centre – have further investigated the effect of this drug when used in combination with [radiotherapy](#).

The team looked at small cell lung cancer cells and found that AZD3965 blocked transport of lactate into and out of the cells and increased glycolysis. They showed that these changes resulted in reduced tumour growth in mice.

In addition, when they combined the drug with radiotherapy, they saw a greater anti-[tumour](#) effect than with either the drug or radiotherapy alone.

Professor Ian Stratford, who led the research, said: "It looks like using AZD3965 to block MCT1 is a great way to specifically target tumours, by harnessing changes in their metabolism. This drug is currently being tested in clinical trials as a single agent, and we've shown that combining this [drug](#) with radiotherapy could offer a new treatment approach for cancer patients.

"We have subsequently received additional funding from CR-UK to exemplify these findings in small cell lung cancer, oesophageal cancer and prostate cancer. If positive these results will lead directly to clinical evaluation."

More information: "Inhibition of Monocarboxylate transporter-1 (MCT1) by AZD3965 enhances radiosensitivity by reducing lactate transport" Bola et al. (2014) *Molecular Cancer Therapeutics* [DOI: 10.1158/1535-7163.MCT-13-1091](#)

Provided by University of Manchester

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