

Immunotherapy could stop resistance to radiotherapy

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Treating cancers with immunotherapy and radiotherapy at the same time could stop them from becoming resistant to treatment, according to a study published in *Cancer Research* today.

The researchers, based at The University of Manchester and funded by MedImmune, the global biologics research and development arm of AstraZeneca, and Cancer Research UK, found that combining the two treatments helped the immune system hunt down and destroy [cancer](#) cells that weren't killed by the initial radiotherapy in mice with breast, skin and bowel cancers.

Radiotherapy is a very successful treatment for many forms of cancer, but in cancer cells that it doesn't kill it can switch on a 'flag' on their surface, called PD-L1, that tricks the body's defences into thinking that cancerous cells pose no threat.

The immunotherapy works by blocking these 'flags' to reveal the true identity of [cancer cells](#), allowing the immune system to see them for what they are and destroy them.

The approach improved survival and protected the mice against the disease from returning.

Dr Simon Dovedi, the lead researcher based at The University of Manchester and member of the Manchester Cancer Research Centre, said: "Using the body's own defences to treat cancers has huge potential

with early phase clinical trials demonstrating exciting patient benefit but we are still at the early stages of understanding how best to use these types of treatments. Combining certain immunotherapies with radiotherapy could make them even more effective and we're now looking to test this in clinical trial to see just how much of a difference it could make."

Professor Nic Jones, Cancer Research UK's chief clinician, said: "Around half of all [cancer patients](#) are given radiotherapy and it has been at the heart of helping improve survival rates so that today one in two cancer patients will survive for at least ten years. Doctors and researchers are constantly looking for ways to improve treatments and this approach could open the door to a whole new way of giving [radiotherapy](#)."

Dr Robert Wilkinson, Director of Oncology Research, MedImmune, said: "MedImmune is committed to developing strong science led collaborations, and supporting research that helps further advance our scientific understanding in the important area of immunotherapy. The findings described in the recent study with Cancer Research UK are extremely encouraging."

Cancer Research UK joined forces with The Christie NHS Foundation Trust and The University of Manchester to form the Manchester Cancer Research Centre allowing doctors and scientists to work closely together to turn scientific advances into patient benefits sooner.

More information: Dovedi, S.J., et al. Acquired resistance to fractionated radiation therapy can be overcome by concurrent PD-L1 blockade, *Cancer Research* (2014)

Provided by Cancer Research UK

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