

IMMUNOTHERAPY

WORKING TOWARDS CURES



CANCER
RESEARCH
UK

The power and precision of the body's immune system is an important weapon against cancer. With your support we spent almost £14 million last year on immunotherapy research, finding ways to help boost the immune system to fight cancer and save more lives.

WHAT IS IMMUNOTHERAPY?

Our immune system protects us from diseases, including cancer. Normally our immune system spots and destroys faulty cells before they develop into tumours - but on rare occasions, faulty cells can escape.

Immunotherapy is a relatively new form of treatment that re-awakens the immune system so it can fight cancer. Some immunotherapies work by boosting the sensitivity of the immune system. Others, like vaccines, specifically target cancer cells and alert the immune cells to the threat. Stimulating an immune response can have long-lasting benefits, because the immune system can remember the cancer and stop it coming back.

Antibodies can be potent weapons against cancer, like Herceptin to treat breast cancer, rituximab for some types of leukaemia and lymphoma and ipilimumab for melanoma that has spread. Antibodies can kill cancer cells in several ways - blocking growth signals they need to survive, triggering their self-destruction, delivering toxic drugs directly to them, or generating an immune reaction against the cancer.

Have you got questions about cancer?

Visit cruk.org/about-cancer or call our specialist cancer nurses on 0808 800 4040

We're leading the way in developing immunotherapies to beat cancer sooner

DID YOU KNOW?



Antibody therapies are made in the lab, but are very similar to antibodies the body makes to fight disease.



In 1997 the antibody rituximab was approved for follicular lymphoma. This was the first antibody to be routinely used as a cancer treatment in the UK.



We supported clinical trials that helped make the antibody Herceptin the gold standard treatment for women with certain breast cancers.

OUR SCIENCE CHANGES LIVES

Our researchers made major contributions to our understanding of the immune system and how to use antibodies to treat B-cell lymphomas. This work laid the foundations for the development of rituximab, which is used to treat some types of non-Hodgkin's lymphoma.

DAPHNE FROM ESSEX KNOWS THE IMPORTANCE OF RESEARCH

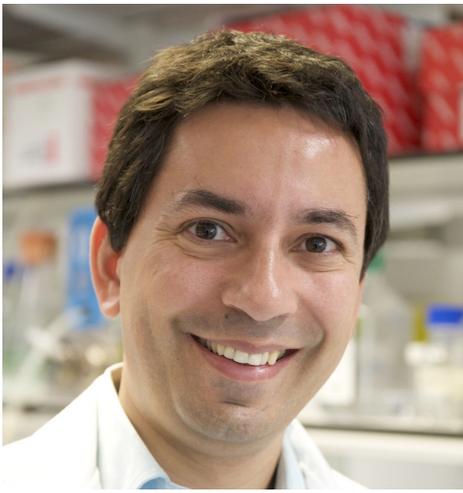
“ I was having trouble swallowing so I knew something was wrong, but I was completely shocked to be told I had non-Hodgkin's lymphoma. After surgery, I was given chemotherapy and the antibody drug rituximab. Thanks to this treatment, five years later I'm still here doing the things I enjoy - like playing bridge and indoor bowls, and volunteering at my local Cancer Research UK shop. ”



Cancer Research UK t: +44 (0)20 7242 0200  

Registered charity in England and Wales (1089464), Scotland (SC041666) and the Isle of Man (1103).

For information on immunotherapy research go to cruk.org



DR REIS E SOUSA IN LONDON TELLS US HIS STORY

“ I have always been fascinated by the complex and intricate workings of our immune system and how it protects us from disease. By studying the way immune cells respond and communicate I can shed light on the role the immune system plays in cancer and how it can be exploited to fight the disease. This knowledge is driving revolutionary new treatments called immunotherapies, which are showing great promise and I believe will become an important part of cancer therapy. ”

We receive no government funding for our research

MAKING A DIFFERENCE

We've been at the forefront of immunotherapy research for many years – from cutting-edge work in our labs to clinical trials in hospitals.

DISCOVERY

Our researchers have made fundamental discoveries about how the immune system works. This knowledge will be crucial for developing new treatment approaches.

INNOVATION

We funded the first research into using DNA from cancer cells as the basis of a vaccine to treat the disease. This is an exciting area of research and there are several vaccines being tested in clinical trials.

PIONEERING TREATMENT

Our scientists helped develop a new way to attack lymphomas that affect some post-transplant patients. The novel treatment uses a type of white blood cell called a killer T cell to seek and destroy cancer cells.

LAYING THE FOUNDATIONS

Our scientists helped establish the link between some cancers and molecules that help drive their growth. Their work was a crucial early step that led to the development of the breast cancer drug Herceptin and a drug for advanced bowel cancer called cetuximab.

OUR PROGRESS IS YOUR PROGRESS

Here are some highlights of our pioneering immunotherapy research across the country.

Southampton: Professor Peter Johnson is a world-leading cancer specialist. He runs important clinical trials testing new immunotherapies for patients with white blood cell cancers, called lymphomas. Finding new treatments could help more people beat the disease.



Leeds: Professor Alan Melcher's focus is using genetically engineered viruses to target cancer cells, killing them directly and turning the power of the immune system against them. This innovative approach could lead to new treatments that boost survival rates.



Southampton: Professor Christian Ottensmeier is looking for ways to make vaccines more effective against cancer, and finding out what tricks cancers use to evade the immune response. He's also leading clinical trials that could lead to better treatments.



London: Dr Sergio Quezada is uncovering the intricate detail that determines how immune cells react to a tumour. By understanding how immune cells are controlled, he hopes to develop new treatments to help beat cancer sooner.



Manchester: Professor Tim Illidge is researching new ways in which radiotherapy could be combined with immunotherapy, which could make cancer treatments kinder and more powerful.



London: Professor Fran Balkwill is carrying out research to develop immunotherapies for women with ovarian cancer. Her research could initiate new clinical trials, giving women with this disease urgently needed treatment options.



Find out more: download other research leaflets in this series at cruk.org/researchleaflets