

# 'Traces Thursday': Immune System Already Fights Cancer but Scientists Only Recently Learned How

*Latest installment of case studies in scientific patience explores the decades-long work that led to a cancer drug that doesn't fight cancer.*

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EINPresswire.com/ -- Today, [Stand Up for Science](#) released part four of "Traces Thursday," an ongoing series exploring how landmark medical therapies are developed. This week's story traces the science behind cancer immunotherapy, one of the most significant advances in oncology of the last decade, now used against dozens of cancer types.



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["Harnessing the Immune System to Treat Cancer"](#) examines the role natural immune systems play when combating cancer. The human immune system already recognizes and eliminates

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*"Traces Thursday" series  
author Dr. Jeremy Berg*

abnormal cells before they develop into cancer, but for years, scientists were unable to stimulate it to effectively attack existing cancers. The breakthrough wasn't a new weapon against cancer, but discovering how some tumors had learned to disable the body's natural response.

In the 1990s, scientists' understanding of basic immunology evolved as they discovered a specific protein linked to T cells, the immune system's attack cells. A decade later, they found another protein that some cells use to tell the T cells to stand down. This eventually led to the development of a completely novel approach to cancer treatment, pembrolizumab (commercially known as

Keytruda), approved in 2014 for metastatic melanoma. In 2020, the FDA approved the treatment

for use against any cancer type with a high mutation burden, a regulatory first. This life-saving drug is now a standard part of the modern anti-cancer treatment approach.

“This is another case study in what long-term, curiosity-driven research can produce. The scientists working to understand the immune system in the 90s weren’t thinking about developing a drug. The treatment only became a reality because basic science was allowed to freely run its course,” said “Traces Thursday” series author Dr. Jeremy Berg.

The case study is the fourth of a twelve-part weekly series written by Berg, former director of the National Institute of General Medical Sciences at NIH and former Editor-in-Chief of Science magazine, now a member of the Board of Advisors with Stand Up for Science. Each week, Berg dives into a historical example of a major development in disease treatment to illustrate an unseen pattern: the decades (or centuries) of foundational research that precede any visible medical breakthrough or benefit.

Amid the debate over federal science funding, the “Traces Thursday” series helps underscore the need for sustained basic research investments, particularly biomedical research, as a worthwhile pursuit. The landmark therapies presented in the series all depended on long-term research funding for their development, the kind that rarely shows measurable results within a single grant cycle, let alone a single presidential administration.

Stand Up for Science will publish subsequent posts on the [Science Fight Club Substack](#) each Thursday.

Berg is available for comment.

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Stand Up for Science is a grassroots, Washington, D.C. based, non-profit organization mobilizing the fight for science and democracy. Stand Up for Science was formed in February 2025 in response to actions affecting federal science agencies and funding of the American scientific ecosystem. On March 7th, Stand Up for Science mobilized over 50,000 people at 170+ events across the world on its first National Day of Action. Federal scientists across multiple agencies (NIH, EPA, NASA, FEMA) have chosen Stand Up for Science as the platform to publish their open letters of concern. Stand Up for Science is a 501(c)(4) non-profit organization [EIN: 33-4154429] and donations are not tax-deductible.

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