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Publications of the Week

Non-Pathogenic *E. coli* Displaying Decoy-Resistant IL18 Mutein Boosts Anti-Tumor and CAR NK Cell Responses

First Authors: Shaobo Yang and Michal Sheffer | Senior Authors: Jiahe Li and Rizwan Romee *(pictured)*
Nature Biotechnology | Northeastern University, Dana-Farber Cancer Institute, and MIT

The tumor microenvironment can inhibit the efficacy of cancer therapies through *mechanisms* such as poor trafficking and exhaustion of immune cells. Here, to address this challenge, researchers exploited the safety, tumor tropism, and ease of genetic manipulation of non-pathogenic *Escherichia coli* to deliver key immune-activating cytokines to tumors via surface display on the outer membrane of *E. coli* K-12 DH5α. **Profile | Abstract**

AKT and EZH2 Inhibitors Kill TNBCs by Hijacking Mechanisms of Involution

First Author: Amy Schade | Senior Author: Karen Cichowski *(pictured)*
Nature | Brigham and Women's Hospital, Harvard Medical School, and Dana-Farber Cancer Institute

Triple-negative breast cancer (TNBC) is the most aggressive breast cancer subtype and has the highest rate of recurrence. The predominant standard of care for advanced TNBC is systemic chemotherapy with or without immunotherapy; however, responses are typically short lived. Here, researchers describe a promising AKT-inhibitor-based therapeutic combination for TNBC. **Abstract**

Anti-Viral Defence By an mRNA ADP-Ribosyltransferase That Blocks Translation

First Authors: Christopher Vassallo and Christopher Doering | Senior Author: Michael Laub *(pictured)*
Nature | Howard Hughes Medical Institute and MIT

Host–pathogen conflicts are crucibles of molecular innovation. Selection for immunity to pathogens has driven the evolution of sophisticated immunity *mechanisms* throughout biology, including in bacterial defence against bacteriophages. Here, researchers characterize the widely distributed anti-phage defence system CmdTAC, which provides robust defence against infection by the T-even family of phages. **Abstract | Press Release**

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Awards

Two Dana-Farber Cancer Institute Faculty Members Elected to the National Academy of Medicine

Dana-Farber Cancer Institute

Drs. David Pellman and Matthew Vander Heiden *(pictured)* of Dana-Farber Cancer Institute have been named to the National Academy of Medicine (NAM), one of the highest honors in the fields of health and medicine. Election into NAM recognizes individuals who have demonstrated outstanding professional achievement and commitment to service. **Read More**

HMS Researcher Wins NIH Director's Transformative Research Award

Harvard Medical School (HMS)

Dr. Ryan Flynn *(pictured)*, Assistant Professor of Stem Cell and Regenerative Biology in the Blavatnik Institute at HMS, has received a National Institutes of Health (NIH) Director's Transformative Research Award. The Transformative Research Award supports individuals and teams of investigators who propose exceptionally innovative or unconventional research projects. **Read More**

Dr. Kwasi Adu-Berchie Named 2024 STAT Wunderkind

Wyss Institute

Dr. Kwasi Adu-Berchie *(pictured)*, a member of the Wyss' Advanced Technology Team working in Immuno-Materials Platform, has been named a 2024 STAT Wunderkind by *STAT News*. The Wunderkinds awards are given annually by *STAT News* to the next generation of scientific superstars who are doing groundbreaking research but are not yet running their own labs. **Read More**

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Local News

Rectify Pharma Announces Positive Functional Modulator RTY-694 as Development Candidate for Primary Sclerosing Cholangitis

Rectify Pharma

Rectify Pharmaceuticals, a biotechnology company developing positive functional modulators (PFMs), announced that RTY-694 was selected as the lead PFM for its hepatobiliary program and is advancing to first-in-human clinical trials for primary sclerosing cholangitis (PSC). PSC is a debilitating orphan bile duct disease that leads to cholangitis, cholestasis, and ultimately liver failure. **Read More**

Editas Prioritizes *In Vivo* Gene Therapies, Looks to Partner Reni-Cel

Fierce Biotech

Editas Medicine is pushing its *in vivo* gene therapy strategy to the top of its agenda, boasting proof-of-concept data and signing a $238 million biobucks pact at the same time as it searches for a partner for its more advanced ex *vivo* sickle cell disease medicine. The biotech announced that it had proven that its *in vivo* candidate was capable of hematopoietic stem and progenitor cell editing.
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First-Of-Their-Kind Findings Turn Conventional Wisdom About Diffuse Hemispheric Glioma on Its Head

Boston Children's Hospital

Diffuse hemispheric glioma, H3G34-mutant (DHG-H3G34) is a type of high-grade glioma. The lack of targeted treatments contributes to a very poor prognosis for patients. But what if some of what we thought we knew about DHG-H3G34 turned out to be wrong? That's the implication of a new study led by Dr. Mariella Filbin *(pictured)*. Her team found that the cellular makeup of DHG-H3G34 differs from that of other gliomas — opening the door to potential treatment targets. **Read More**

New Diagnostic Approach for Bacterial Infections Shows Promise in the Clinic

The Broad Institute

An innovative diagnostic approach developed by Dr. Roby Bhattacharyya *(pictured)* and his team could one day help patients with bacterial infections get the most effective treatment faster. The method, called Genotypic and Phenotypic Antibiotic Susceptibility Testing through RNA detection, or GoPhAST-R, analyzes the growth and genetic activity of the bacteria to quickly determine the pathogen's susceptibility to various medicines. **Read More**

Brain Pathways That Control Dopamine Release May Influence Motor Control

MIT News

Within the human brain, movement is influenced by a brain region called the striatum, which sends instructions to motor neurons in the brain. Those instructions are conveyed by two pathways, one that initiates movement ("go") and one that suppresses it ("no-go"). In a new study, MIT researchers led by Dr. Ann Graybiel *(pictured)* have discovered an additional two pathways that arise in the striatum and appear to modulate the effects of the go and no-go pathways. **Read More**

Implantable Microparticles Can Deliver Two Cancer Therapies at Once

MIT News

Patients with late-stage cancer often have to endure multiple rounds of different types of treatment, which can cause unwanted side effects and may not always help. In hopes of expanding the treatment options for those patients, researchers led by Dr. Ana Jaklenec *(pictured)* have designed tiny particles that can be implanted at a tumor site, where they deliver two types of therapy: heat and chemotherapy. **Read More**

New Drug Triggers Rapid Cell Death in Cancer Models

Broad Institute

A team of researchers led by Dr. Todd Golub *(pictured)*, Director of the Broad Institute of MIT and Harvard, has developed a compound called BRD-810 that holds promise as a therapeutic candidate for cancer. This small molecule reactivates the apoptosis cascade in tumor cells while sparing healthy cells in animal models. **Read More**

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Upcoming Events in Boston

November 5 10:00 AM	**Picture a Scientist: Film and Panel Discussion** Simmons University
November 6 4:00 PM	**Discovery and Implementation of Blood-Based Biomarkers For Multiple Sclerosis and Related Diseases** Online
November 8 9:00 AM	**5th Annual Health Data Science Symposium at Harvard** Joseph B. Martin Conference Center
November 14 4:00 PM	**Uncovering the Neural Circuit Mechanisms of Spontaneity** Whitehead Institute for Biomedical Research
November 14 6:00 PM	**After Dark: Junk** MIT Museum

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