Patient Wellness First

BioSciTech biweekly NEWS

Issue:September 1st, 2024

# NEWS & COMMENTARIES


**Adaptimmune Receives U.S. FDA Accelerated Approval of TECELRA® (afamitresgene autoleucel),** the First Approved Engineered Cell Therapy for a Solid Tumor. Approved for advanced MAGE-A4+synovial sarcoma in adults with certain HLA types who have received prior chemotherapy. TECELRA is the first new treatment option for people with synovial sarcoma in more than a decade
**https://www.businesswire.com/news/home/20240801538240/en/**


## FDA approves daratumumab and hyaluronidase-fihj with bortezomib, lenalidomide, and dexamethasone for multiple myeloma

The Food and Drug Administration approved daratumumab and hyaluronidase-fihj (Darzalex Faspro, Janssen Research & Development, LLC) in combination with bortezomib, lenalidomide, and dexamethasone for induction and consolidation in patients with newly diagnosed multiple myeloma who are eligible for autologous stem cell transplant (ASCT).
**https://www.onclive.com/view/fda-approves-subcutaneous-daratumumab-plus-vrd-in-multiple-myeloma**


## Genentech to shut down cancer immunology research department amid broader R&D rethink

**Angus Liu Aug 16, 2024**

Genentech is closing its cancer immunology research department after 17 years, with its head, Ira Mellman, departing. The department will merge with molecular oncology, led by Frederic de Sauvage, to form a unified cancer research division. This restructuring aims to enhance cancer research opportunities and is not part of a broader Roche strategy. Some roles will be reassigned, and the reorganization will impact a limited number of employees. This decision follows recent challenges in Genentech's cancer immunotherapy efforts, including setbacks in their anti-TIGIT program and ending a cell therapy partnership with Adaptimmune.

**https://www.fiercebiotech.com/biotech/genentech-shut-down-cancer-immunology-department-amid-broader-downsizing-efforts**

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## Biotech financing: darkest before the dawn

**Melanie Senior, 2024**

**https://doi.org/10.1038/s41587-024-02357-2**

Malanie Senior started the article with the quote from Charles Dickens in A Tale of Two Cities *"It was the best of times, it was the worst of times,"* , it is predicted that it might happen for the Biotech Financing today. The article discuss that on the good side, there is a 15-year high in average private biotech funding round sizes, strong mergers and acquisitions (M&A) activity, and thriving innovation. Consistently quiet public markets and picky, cautious venture capitalists (VCs) finding it difficult to raise fresh funding are the drawbacks. The majority of biotechs are mired in a protracted, severe downturn. *For more details consult the above article by Melanie Senior*

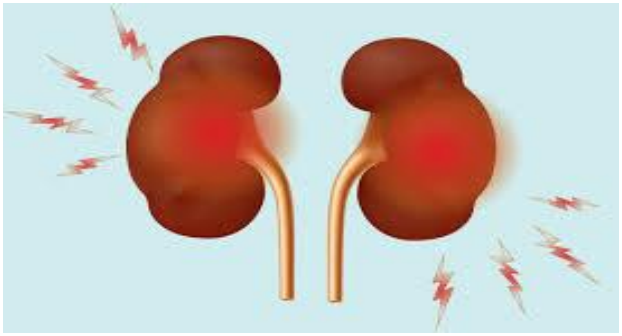
# SELECTED PUBLICATIONS

## Circadian period is compensated for repressor protein turnover rates in single cells

**Gabriel et al., 2024**

**https://doi.org/10.1073/pnas.2404738121**

In this study Gabriel et a., 20224 mentioned that molecular circadian 'clocks' orchestrate widespread rhythms in transcript and protein abundance in mammals. Although these circadian 'clocks' exhibit robustness to cellular environmental fluctuations, the mechanisms underlying circadian periods in response to variations in metabolic states remain little known. In this study, Gabriel et al., 2024 leverage the inherent heterogeneity of single cells in both circadian period and protein stability to investigate their interdependence without the need of genetic manipulations. They engineered cells to express essential circadian proteins (CRYPTOCHROME1/2 (CRY1/2) and PERIOD1/2 (PER1/2)) as endogenous fluorescent fusion proteins. The approach enabled simultaneous monitoring of circadian rhythms and protein degradation kinetics in thousands of individual cells. *For more details, please consult the above cited article Gabriel et al., 2024*



## What makes the kidney so tolerant?

**Paolo Molinari and Paolo Cravedi, 2024**

**https://www.jci.org/articles/view/183501**

The article mentioned that organ allografts exhibit varying propensities for spontaneous acceptance without immunosuppression, a phenomenon whose underlying mechanisms, if understood, could significantly improve alloimmune response management. In WT mice, C57BL/6 mice naturally accept DBA/2J kidney allografts through the formation of regulatory T cell-containing tertiary lymphoid organs (rTLOs), which are crucial for graft acceptance. *For more details, please consult the above cited article Paolo Molinari and Paolo Cravedi, 2024*

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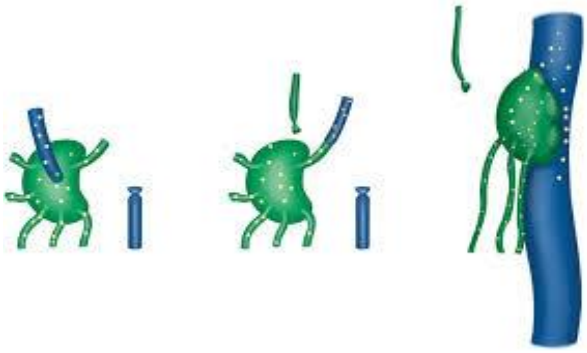
## The forgotten pandemic: how understanding cholera illuminated mechanisms of chloride channels in multiple diseases

**Al-Awqati, 2024**

**https://doi.org/10.1172/JCI184297.**

In this article, Al-Awqati, 2024 stated that the seventh cholera pandemic, which began in 1961 on Sulawesi, Indonesia, and has since spread globally, marks a significant but often overlooked chapter in modern medical history. While cholera-like illnesses have been documented in India for millennia, the current pandemic count begins from 1817. This latest pandemic, facilitated by rapid global travel, exemplifies what historian Emmanuel Le Roy Ladurie termed "the microbial unification of the world," with Vibrio cholerae bridging East and West, rich and poor. *Kindly refer to the aforementioned Al-Awqati, 2024 article.*



## The Possible Role of Lymphaticovenous and Lymph Node to Vein Anastomosis for Improvement of Milroy Disease Related Congenital Chylothorax and Lower

**Alshomer et al., 2024**

**https://doi.org/10.1097/PRS.0000000000011635**

Alshomer et al., 2024 mentioned that primary lymphedema, characterized by lymphatic dysplasia, includes Milroy's disease as a rare variant, with congenital chylothorax being an even rarer and more severe complication. This study presents the first report of utilizing peripheral lymphovenous anastomosis (LVA) and lymph node to vein anastomosis (LNVA) for managing this condition. A retrospective chart review was conducted on six patients with Milroy's disease complicated by chylothorax, treated between 2019 and 2023. The patients, with a mean age of 12±3.9 years and disease duration of 10.5±2.8 years, had bilateral lower extremity lymphedema and chylothorax requiring chest tube drainage. *For further information, kindly refer to the aforementioned Alshomer et al., 2024 article*

## TNIK's emerging role in cancer, metabolism, and age-related diseases

**Ewald et al., 2024**

**https://doi.org/10.1016/j.tips.2024.04.010**

Ewald et al., 2024 mentioned that Traf2- and Nck-interacting kinase (TNIK) has emerged as a key regulator of pathological metabolic signaling in several diseases and is a promising drug target. Originally studied for its role in cell migration and proliferation, TNIK possesses several newly identified functions that drive the pathogenesis of multiple diseases. Specifically, we evaluate TNIK's newfound roles in cancer, metabolic disorders, and neuronal function. We emphasize the implications of TNIK signaling in metabolic signaling and evaluate the translational potential of these discoveries. *For more information, please refer to the Ewald et al., 2024 article cited above.*

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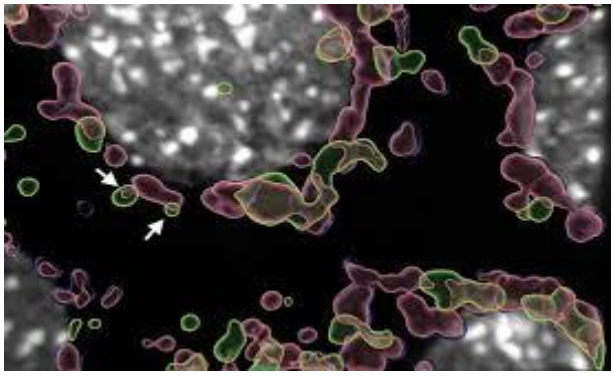
## Discovery of Preclinical Candidate AD1058 as a Highly Potent, Selective, and Brain-Penetrant ATR Inhibitor for the Treatment of Advanced Malignancies

**Zhi Liu et al., 2024**

**https://doi.org/10.1021/acs.jmedchem.4c00734**

In this article Liu et al., 2024 stated that the ataxia telangiectasia-mutated and Rad3-related protein (ATR) is integral to the regulation of the cellular DNA-damage response (DDR), positioning it as a valuable target for the development of antitumor drugs via synthetic lethality. In this study, Zhi Liu and colleagues introduce AD1058, a highly effective and selective ATR inhibitor, characterized by favorable preclinical pharmacokinetic properties. AD1058 demonstrates enhanced efficacy in inhibiting cell proliferation, disrupting the cell cycle, and promoting apoptosis when compared to AZD6738. This compound shows significant potential as a clinical candidate for addressing brain metastases and leptomeningeal metastases in solid tumors. *For more information, please refer to the Liu et al., 2024 article cited above.*



## Lysosomes drive the piecemeal removal of mitochondrial inner membrane

**Prashar et al., 2024**

**https://doi.org/10.1038/s41586-024-07835-w**

In this study Prashar et al., 2024 mentioned that mitochondrial membranes delineate specific structural and functional compartments. In their 2024 study, Prashar et al. utilize super-resolution microscopy to demonstrate that the cristae of the inner mitochondrial membrane (IMM) vesicles, lacking both the outer mitochondrial membrane and mitochondrial matrix, are generated during the resting state. By using different microscopy technique, the authors propose that the compartmentalization of the IMM may facilitate the selective elimination of damaged sections via VDIMs, thereby safeguarding mitochondria from localized damage and revealing a novel pathway for intramitochondrial quality control. *For further information, kindly refer to the aforementioned Prashar et al., 2024 article.*


## A new class of mRNA drugs targets poison exons

**Sheridan, 2024**

**https://www.nature.com/articles/s41587-024-02355-4**

In this article, Sheridan indicated that companies are focusing on targeting poison exons found within mRNA transcripts as a means to restore the levels of wild-type proteins and enhance cellular health in cases of severe pediatric epilepsy and other genetic disorders. An initial study evaluating a novel class of therapeutics aimed at addressing toxic or poison exons revealed significant and unforeseen improvements in individuals with Dravet's syndrome, a severe genetic epilepsy. The antisense agent STK-001, developed by Stoke Therapeutics, significantly reduced the frequency of seizures in patients who, prior to initiating the experimental treatment, were suffering from an average of seventeen seizures per day. *For further information, kindly refer to the aforementioned Sheridan et al., 2024 article*

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# RECOMMENDED EVENTS

## SLAS2025 International Conference & Exhibition

Reserve your spot in San Diego! Register now for your front row seat to the latest lab automation and life sciences technology innovations.

The SLAS2025 Call for Abstracts submission window is now open. Submit a podium or poster abstract for the opportunity to present and win awards at next year's meeting in San Diego!

**https://www.slas.org/events-calendar/slas2025-international-conference-exhibition/**

## ARTIFICIAL INTELLIGENCE IN PHARMA AND BIOTECH

**ONLINE SHORT COURSE**

Bridge the gap between innovative technology, drug development, and business decision making.

**https://mit-online.getsmarter.com/presentations**

## Invest in Health
## Riyadh Global Health Exhibition

The exhibition covers every facet of the healthcare ecosystem Network with industry leaders, potential buyers, policy drivers, expert lab professionals and decision makers from across 8 exciting subject areas. Transform healthcare's most pressing challenges through collaboration and empowerment, in one of the world's most exciting healthcare landscapes

**21 - 23 October 2024**
**Malham, Riyadh**
**Saudi Arabia**
**https://www.globalhealthsaudi.com/en/home.html**

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**The 7th Applied Synthetic Biology in Europe (ASBE7)** is organised by the European Federation of Biotechnology (EFB) Bioengineering and Bioprocessing Division and the EFB Microbial Biotechnology Division.
The event will be held on **6-8 November 2024 in Brno, Czech Republic**.
**https://www.efbiotechnology.org/synthetic_biology**

## JOBS CORNER


### Cancer Research UK (CRUK): UK visa fees are damaging cancer research.

**https://news.cancerresearchuk.org/2024/07/25/uk-immigration-system-visa-fees-international-cancer-researchers/**

Cancer Research UK (CRUK) is raising concerns that the UK's rising visa fees are hindering the recruitment of top international researchers, essential for advancing cancer research. The charity reported a 44% increase in visa costs across its institutes, diverting funds from vital research. CRUK is urging the government to reverse these fee hikes and review the immigration system to better support attracting global scientific talent, which is crucial for maintaining the UK's leadership in life sciences and ongoing progress in cancer research.


### Junior Scientist from Developing World

**Shaaban et al., 2024**

**https://www.nature.com/articles/d41586-024-02485-4**

As junior scientists from emerging economies, we recognize the importance of increasing the number of researchers like us to tackle global challenges. While international collaboration is crucial for scientific advancement, it often lacks fairness. Contrary to Hollywood's idealized portrayal of seamless global teamwork, our experience reveals that collaborations between wealthier and lower-income countries are far from equal.

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## Postdoctoral Fellowships

Supporting internationally mobile postdoctoral researchers in Europe and around the world

**https://www.embo.org/funding/fellowships-grants-and-career-support/postdoctoral-fellowships/**

## Cancer Research UK Jobs: Join a workplace that encourages collaboration

We encourage a flexible working culture, including options such as home-working, reduced or flexi-hours, job shares, job-splits, compressed and core hours. .

**https://www.cancerresearchuk.org/about-us/careers**

## Exciting Career Opportunity: Principal Scientist I/II in Spatial Proteomics

A highly motivated individual with a passion for cutting-edge technology to join our Systems-Level Translational Discovery team at Novartis Biomedical Research, Cambridge, MA.

**https://novartis.wd3.myworkdayjobs.com/Novartis_Careers/job/Cambridge-USA/PhenoCycler-Fusion-Specialist_REQ-10017225**

## Bicycle Therapeutics
## Precision-Guided Therapeutics

We have an exciting opportunity for an in Vivo Pharmacologist to join our team at Bicycle Therapeutics. Check out the role: Principal Scientist, In vivo pharmacology (radiopharmaceuticals)!

**https://www.bicycletherapeutics.com/careers-culture/careers/**


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*By Dr. M.Boudjelal (KAIMRC), Dr. M. Belhocine (UAE),*
*Dr. F. Amokrane Nait Mohamed (Harvard), Dr. M. Aid-Boudries (Harvard)*