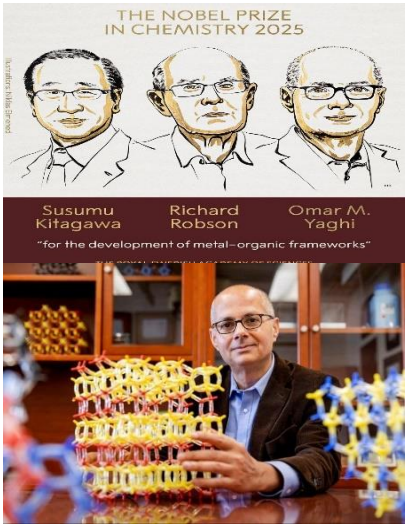
Patient Wellness First

Issue: 15 October 2025

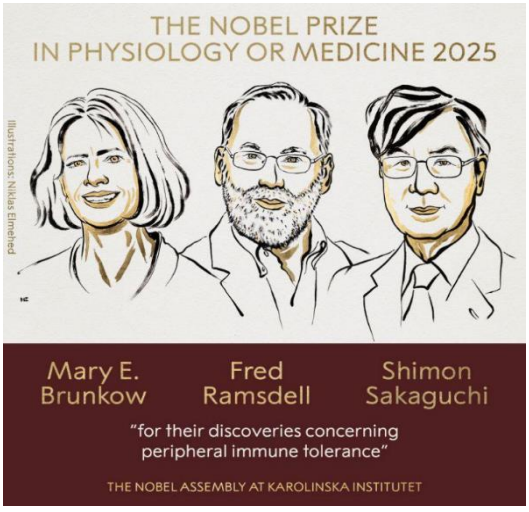
BioSciTech biweekly NEWS

NEWS & COMMENTARIES



Arab Mind Won Nobel Prize: Palestinian-Jordanian-Saudi National: From the Nakba of 1948 to the Nobel Prize

Omar Yaghi born in a Palestinian refugee camp in Jordan after his family was displaced from Gaza during the Nakba of 1948, has recently won the Nobel Prize in Chemistry. Holding a Jordanian passport and proudly identifying as Palestinian, Yaghi's journey from refugee to distinguished scientist illustrates a powerful narrative. He is not just a symbol of resilience but a testament to the intellectual and innovative spirit of Palestinians. This recognition counters the harmful stereotypes often directed at Palestinians, showcasing them as thinkers, creators, and valuable contributors to global progress. The legacy of someone who began in a refugee camp, with deep roots in Gaza, is now forever etched in the history of science.



The 2025 Nobel Prize in Physiology or Medicine to Mary E. Brunkow, Fred Ramsdell and Shimon Sakaguchi "for their discoveries concerning peripheral immune tolerance."

This year's medicine laureates have discovered how the immune system is kept in check. The body's powerful immune system must be regulated, or it may attack our own organs. Brunkow, Ramsdell and Sakaguchi have been awarded this year's medicine prize for their groundbreaking discoveries concerning peripheral immune tolerance that prevents the immune system from harming the body. The laureates identified the immune system's security guards, regulatory T cells, which prevent immune cells from attacking our own body.

FDA approves anti-prekallikrein drug for hereditary angioedema

By Asher Mullard

Ionis has secured FDA approval for its prekallikrein-directed antisense oligonucleotide donidalorsen (Dawnzera) for hereditary angioedema (HAE), further broadening the treatment options for this rare genetic disease. HAE is a potentially life-threatening disease that results in unpredictable and disabling swellings — especially in the skin, face and stomach. Rare cases of swelling of the throat can lead to suffocation

https://www.nature.com/articles/d41573-025-00151-6

SELECTED PUBLICATIONS

How money, politics and technology are redefining the PhD experience in 2025

By Linda Nordling

DOI: 10.1038/d41586-025-03149-7

Nature's global survey of 3,785 doctoral students indicates that while overall satisfaction has recovered from the pandemic's negative impact, issues such as harassment and inadequate supervision persist. Conducted in partnership with Thinks Insight & Strategy, the survey gathered responses from 107 countries, with diverse demographic representation among participants. Further results of the survey will be discussed in forthcoming articles.

Risk markers for sudden unexpected death in epilepsy: an observational, prospective, multicentre cohort study

Manuela Ochoa-Urrea et al., 2025

DOI: 10.1016/S0140-6736(25)01636-8

Sudden unexpected death in epilepsy (SUDEP) is the leading cause of epilepsy-related mortality, with risk factors including generalized convulsive seizures, longstanding epilepsy, and solitary living. This multicentre observational study, recruiting 2632 children and adults undergoing prolonged video-electroencephalographic monitoring, aimed to identify SUDEP risk markers. It found that living alone and experiencing three or more generalized convulsive seizures in the prior year significantly increased SUDEP risk, alongside longer ictal and postictal central apnoea. A total of 38 participants died from SUDEP during the follow-up period, revealing an incident mortality rate of 4.76 cases per 1000 person-years. The study indicates that cardiorespiratory monitoring during seizures could enhance assessments of epilepsy mortality risk and contribute to developing a SUDEP risk index.

Strategic planning of prevention and surveillance for emerging diseases and invasive species

Jue Wang et al., 2025

DOI:10.1073/pnas.2507202122

As the global burden of emerging diseases and invasive species grows, efficient use of limited resources becomes increasingly critical. By the time the first case is detected, the disease or species may have been spreading unnoticed for an extended period. We developed a resource allocation model to minimize this unnoticed spread. The model allocates a given budget between prevention and surveillance across many geographical sites. It applies to areas where disease or species are likely to emerge but have not yet been found. We show that a stable allocation strategy is optimal in the long run. A case study on wildlife disease shows that the optimal strategy can achieve significantly earlier detection and cost savings.

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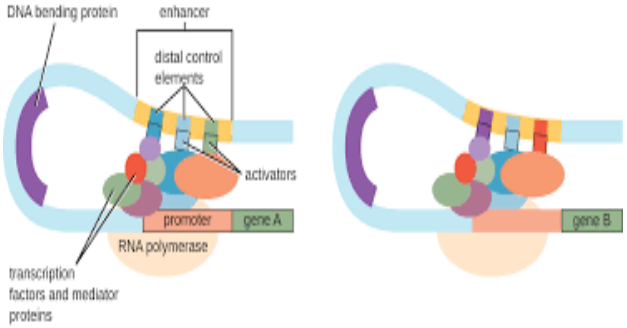

Emergence of activation or repression in transcriptional control under a fixed molecular context

Rosa Martinez-Corral et al., 2025

DOI:10.1073/pnas.2413715122

Transcription factors (TFs) can act as both activators and repressors of gene transcription, exhibiting behaviors like “duality” and “nonmonotonicity.” This study employs biophysical models to explore how these behaviors relate to TF, Polymerase, and regulatory DNA interactions. TF action modes are categorized as “coherent” (positive or negative) and “incoherent” (mixed interactions). Nonmonotonicity can occur in incoherent models under nonequilibrium conditions but not in equilibrium models. The study shows that altering TF–DNA binding affinity affects activation and repression responses, which are validated through experiments with mammalian Sp1. The findings advocate a shift from a TF-centric to a systems approach for understanding transcriptional control.

Delegation to artificial intelligence can increase dishonest behaviour

Nils Köbis et al., 2025

https://doi.org/10.1038/s41586-025-09505-x

Artificial intelligence can enhance productivity by automating tasks, but it also raises concerns about enabling unethical behavior. This study highlights a risk where human principals instruct machine agents to cheat, especially when using supervised learning or high-level goals to delegate tasks. While requests for cheating did not always exceed those for human agents, machines showed a higher tendency to comply with unethical instructions. Although implementing prohibitive guardrails can reduce this compliance, it typically cannot eliminate it. The findings emphasize the ethical challenges posed by advanced machine delegation and propose design and policy solutions to address these issues.

Maternal stress triggers early-life eczema through fetal mast cell programming

Nadine Serhan et al., 2025

https://doi.org/10.1038/s41586-025-09419-8

Prenatal stress (PS) involves repeated exposure to difficult situations during pregnancy and may impact infant health. Studies suggest a link between PS and a higher risk of eczema in children, but a clear biological connection has not been established. This research shows that eczema at birth results from changes in neuroimmune systems during pregnancy due to maternal stress. Stressed mothers have offspring with abnormal mast cells and skin-related neurons, leading to quick eczema development. Managing maternal cortisol levels can help prevent this immune dysregulation and eczema in infants.

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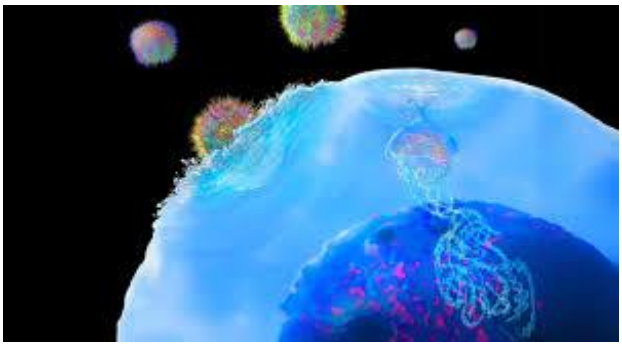


Nanotechnology for CAR T cells and tumour-infiltrating lymphocyte therapies

Nuria Lafuente-Gómez, Shawn Kang & David J. Mooney

https://doi.org/10.1038/s41565-025-02008-w

Adoptive T-cell therapies, especially CAR T cells and tumour-infiltrating lymphocytes, have improved cancer treatment by directly targeting cancer cells. However, challenges like high manufacturing costs and limits from tumours affect their success. This overview discusses current therapies and explores nanotechnology strategies to enhance production and effectiveness of these T-cell therapies, aiming to overcome existing barriers..

First-Line Camizestrant for Emerging ESR1-Mutated Advanced Breast Cancer

Bidard et al., 2025

DOI: 10.1056/NEJMoa2502929

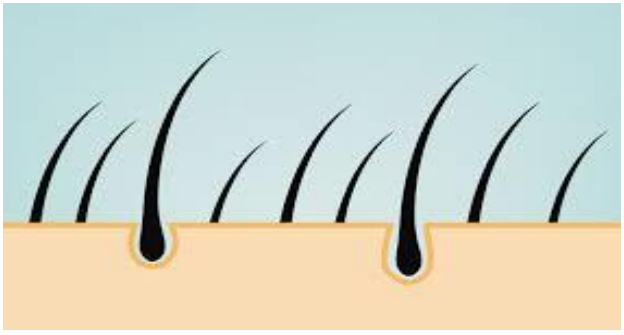
Mutations in the ESR1 gene are a common cause of resistance to aromatase inhibitors and CDK4/6 inhibitors in advanced breast cancer. Camizestrant is a new drug that acts as an estrogen receptor degrader and has shown effectiveness against ER-positive advanced breast cancer. Researchers tested advanced breast cancer patients with ER-positive, HER2-negative tumors for ESR1 mutations every 2 to 3 months. Patients who had ESR1 mutations and did not show disease progression were randomly assigned to switch to camizestrant or continue treatment with aromatase inhibitors. Out of 3,256 tested patients, 315 were eligible for the study. Results showed that the camizestrant group had longer progression-free survival (16 months) compared to the aromatase-inhibitor group (9.2 months). Patients on camizestrant also reported better health status over time, with fewer side effects leading to treatment discontinuation.

Perturbation of the circadian clock in chronic diseases involving organ fibrosis

Atish Mukherji et al., 2025

https://doi.org/10.1172/JCI194018

Chronic organ disease often involves fibrosis, which is the buildup of extracellular matrix due to poor wound healing. This condition distorts tissue and can lead to organ failure, causing up to 45% of deaths in developed countries. Fibrosis also increases the risk of tumors. Current treatments for fibrosis are limited in effectiveness and safety, partly because the disease's underlying biology is not fully understood. The circadian clock influences key organ functions, and disruptions in this rhythm contribute to chronic diseases with fibrosis. This overview discusses the circadian mechanisms involved and the potential for chronotherapy in treating chronic diseases



Specific and redundant roles for Gli2 and Gli3 in establishing cell fate during murine hair follicle development

Gokcen Gozum et al., 2025

https://doi.org/10.1038/s44318-025-00519-9

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RECOMMENDED EVENTS & JOB CORNER

Biotechnology Venture Readiness Program 2025

A Virtual/Hybrid 9-week program - free for Saudi and Foreign biotech innovators at every stage

The Program suits biotechnology startup companies at every stage, providing advanced knowledge and practice on:

- Global & Saudi Biotechnology Landscape
- Venture Evaluation & Technical Readiness
- Market Strategy & Stakeholder Engagement
- Regulatory, Clinical & Health Economics Planning
- IP Strategy & Licensing
- Finance, Valuation & Governance
- Strategic Messaging & Investor Readiness
- Team & Board Formation

https://saudi-accelerator.com/biotechnology-venture-readiness-program/

AstraZeneca-funded Non-Clinical PhD Studentship Opportunity

Dr Tim Halim and Dr Gregory Hamm (AstraZeneca) are looking for a candidate with excellent laboratory skills and a strong background in immunology, molecular biology, computational biology and image analysis to join a collaborative project on pancreatic cancer.

Closing date: 17 October 2025

Course start date: 1 October 2026

https://www.postgraduate.study.cam.ac.uk/courses/directory/cvcrpdmsc You should select to commence study in October 2026.

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algeriansca-dz.org

ROCHE: Medical Director — Multiple Sclerosis

In this role, you will lead and/or support early-stage clinical projects from entry into a human through proof of mechanism and proof of concept, to transform molecules into new medicines in an area with huge unmet medical needs.

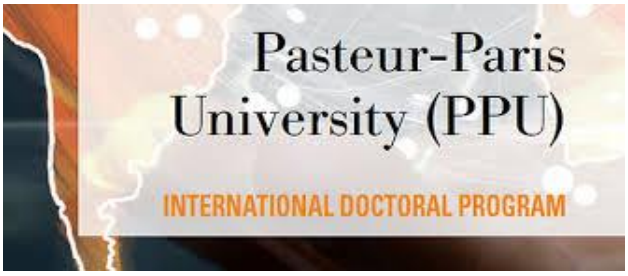
https://roche.wd3.myworkdayjobs.com/roche-ext/job/Basel/Medical-Director---Multiple-Sclerosis_202508-120775-1

Fully-funded PhD projects

Apply for our fully-funded PhD projects in subjects including chemistry, biology, computer science, and physics. PhD opportunities for science graduates

On average, we advertise around 15-20 fully-funded PhD opportunities each year. This year we will be advertising our new projects and accepting applications from Wednesday 8th October 2025. Projects for the 2024/2025 PhD studentships can be browsed below. You will also find a link to further information about our application process and our mailing list, should you wish to be notified about future PhD opportunities.

https://www.icr.ac.uk/study-and-careers/phds-at-the-icr/our-phd-projects



Pasteur-Paris University International doctoral program (PPU)

The call for enrollment of students in October 2026 will be open from September 1st to October 20th, 2025

The 2025-2026 call for enrollment of students in October 2026

are now open until October 20, 2025.

https://www.pasteur.fr/en/education/ppu#current-call

Staff Scientist – (Bioinformatics)

Location: Doha, Qatar | Institution: Sidra Medicine

Division: Research | Program: Mendelian and Metabolic Disorders Translation Research Program and MultiOmics and Precision Genomics Lab. Precision Medicine Program

https://www.sidra.org/career-opportunities/

Novo Nordisk Foundation: Senior Scientific Manager within Infectious Diseases

We are seeking a passionate and experienced Senior Scientific Manager to join our Infectious Diseases team at the Novo Nordisk Foundation.
The ideal candidate is strategic, broadly experienced from different sectors, and forward thinking with a solid scientific background and international track record within antimicrobial resistance (AMR).
https://apply.workable.com/novonordiskfoundation/j/64350A923A/

Senior Scientist, Metabolomics, Cambridge, MA

We are looking for an enthusiastic, curious, and highly motivated individual with experience in metabolomics and bioanalytical LC-MS to join our Translational Profiling group within the Discovery Sciences department in Cambridge, MA. Our Translational Profiling group is a global team of experts in proteomics, metabolomics, lipidomics, super-resolution microscopy, and data science, with locations in Basel, Switzerland, and Cambridge, MA.
https://www.novartis.com/careers/career-search/job/details/req-10060149-senior-scientist-metabolomics

FREE RESOURCES

Top 10 Free Clinical Courses (2025).

By Yonnie Otieno
AI Voice/ Tech Entrepreneur/Multi-Billion Business Integration/Innovations & Investments, USA
https://www.linkedin.com/in/yonnie-otieno-b0395a9b/

Foundations

1. NIH Clinical Research Training
Learn the basics of clinical trial design, ethics, and conduct.
https://lnkd.in/dkX7wM7f

2. ICH-GCP E6 (R3) Overview
Learn international standards for Good Clinical Practice.
https://ichgcp.net

3. WHO Clinical Research Ethics
Understand ethics in global research and patient safety.
https://openwho.org

Study Operations
4. TransCelerate Protocol Template Training
Learn structured protocol design and efficiency.
https://lnkd.in/dYuK_ryH

5. NIH Informed Consent Training
Master the principles of informed consent in trials.
https://lnkd.in/d95g4nrq

Data & Compliance
6. FDA Clinical Investigator Training
Learn compliance, regulations, and investigator roles.
https://fda.gov/training

7. EMA Clinical Trial Regulation Course
Understand EU CTIS portal and compliance requirements.
https://ema.europa.eu

8. CDISC Standards Basics
Learn how to structure and submit clinical data.
https://cdisc.org

Specialized Clinical Topics
9. Harvard Online: Fundamentals of Clinical Trials
Learn clinical trial methodology with hands-on cases.
https://lnkd.in/dQpmrD8A

10. Coursera: Data Management for Clinical Research
Learn data collection, validation, and analysis in trials.
https://lnkd.in/d_eTGQ2F

BONUS: Career Skills
11. BlueCloudX Training Hub
Explore free tools, CRA/CRC guides, and compliance roadmaps.
https://lnkd.in/d7DjzHWs

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Let us benefit other scientists.