

## NEWS &amp; COMMENTARIES



## Algeria Won a Victory Over Past and Recent Malaria and Diphtheria Pandemic

The malaria parasite, first discovered in Algeria in 1880, has not been transmitted in the country for many years. Since late September 2024, southern Algeria has faced significant outbreaks of malaria and diphtheria, severely impacting the wilayas of In Guezzam and Bordj Badji Mokhtar (deep south of Algeria in the border of Sahel). Heavy rains in September led to stagnant waters, accelerating mosquito breeding and increasing malaria cases to 536 registered cases and Diphtheria cases have risen to 115 registered cases, largely due to unvaccinated emigrants from Sahel and Africa. In light of confirmed cases, Algerian President Mr. Abdelmadjid Tebboune ordered medical

teams to be dispatched to the affected border areas to ensure patients receive proper treatment. A plane carrying essential supplies, including diphtheria antitoxins, medications, and protective gear, was sent to affected regions. In addition to vaccinating the emigrant from Sahel and Africa to South of Algeria. It noted that Algeria is certified by the World Health Organization for malaria eradication and current cases are linked to individuals arriving from neighboring countries where these diseases are still common

<https://english.news.cn/africa/20240928/064e1297fe5d4ce7b3824ecb4cd43cb9/c.html>



## CAR-T cell therapy has given Lisa Noble a chance to meet her youngest grandchildren

Three months after cell therapy I'm now cancer-free'. **Janine Machin, BBC correspondent reported that the** NHS and University of Cambridge have joined forces to create a new cellular therapy laboratory, which they hope will unlock new and potentially "kinder" treatments for people with cancer. Due to open in the next 18 months, it aims to increase access to some existing therapies but also develop alternatives that target other forms of the disease. For patients who have exhausted all other options, these treatments are seen as a last

chance of beating their illness. <https://www.bbc.co.uk/news/articles/cq64jpg3921o>



## Large-scale study of children with genetic disorders finds huge benefit of diagnosis.

Genetic results from the Deciphering Developmental Disorders (DDD) study have enabled thousands of children with severe developmental disorders to receive better treatment. Thousands of children with severe developmental disorders have benefited from more targeted treatments and support with genetic insights from the large-scale Deciphering [https://www.sanger.ac.uk/news\\_item/large-scale-study-of-children-with-genetic-disorders-finds-huge-benefit-of-diagnosis/](https://www.sanger.ac.uk/news_item/large-scale-study-of-children-with-genetic-disorders-finds-huge-benefit-of-diagnosis/)

## SELECTED PUBLICATIONS



### Extension of efficacy range for targeted malaria-elimination interventions due to spillover effects

**Benjamin-Chung et al., 2024**

<https://doi.org/10.1038/s41591-024-03134-z>

Malaria-elimination interventions focus on eradicating hotspots and preventing transmission to surrounding areas. In a re-analysis of a cluster-randomized trial in Namibia, we assessed the effects of reactive focal interventions (chemoprevention with artemether–lumefantrine and indoor residual spraying with pirimiphos-methyl) delivered near confirmed malaria cases. While there was little evidence of direct effects among intervention recipients, the combined intervention demonstrated significant spillover effects, reducing malaria incidence by 43% among non-recipients within 1 km and decreasing infection prevalence by 79% and seroprevalence by 34% within 3 km. These findings suggest that targeting hotspots with combined interventions can also benefit nearby populations, enhancing cost-effectiveness by 42%.

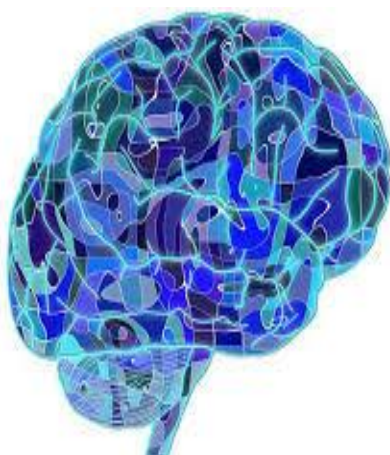


### Identification of a cell-active chikungunya virus nsP2 protease inhibitor using a covalent fragment-based screening approach

**Merten et al., 2024**

<https://doi.org/10.1073/pnas.2409166121>

Researchers have identified a covalent small-molecule inhibitor that blocks nsP2 protease activity in chikungunya virus, a major cause of viral arthritis, and reduces replication across multiple alphaviruses. This discovery marks a promising step toward developing effective treatments for chikungunya and related viral infections



### New epilepsy therapies in development

**Klein et al., 2024**

<https://doi.org/10.1038/s41573-024-00981-w>

Epilepsy is a common brain disorder characterized by recurrent seizures and associated comorbidities, with over 30% of patients unresponsive to current antiseizure medications (ASMs). Recent advancements in epilepsy genetics and drug screening have led to over 200 novel therapies in development, focusing on new mechanisms and personalized approaches. This Review discusses the shift from symptom-focused treatments to disease prevention and targeted therapies for specific epilepsy syndromes, highlighting recent progress and future directions in ASM development.



### Cell therapy for neurological disorders

**Svendsen and Svendsen 2024**

<https://doi.org/10.1038/s41591-024-03281-3>

Cell therapies for neurological disorders are advancing into clinical settings, offering the potential to replace damaged nervous tissue and provide lasting functional benefits. While cell sourcing has historically depended on fetal brain tissue, advancements in pluripotent stem cell technology now enable the large-scale production of various neural cells.

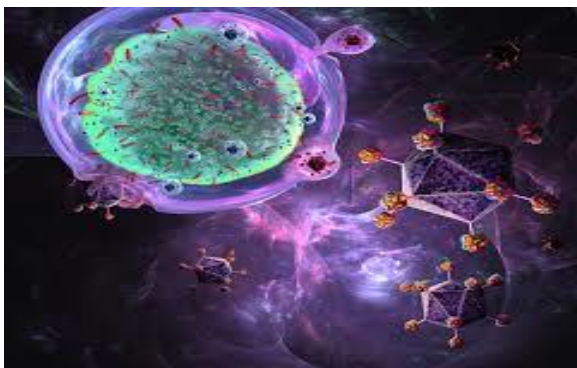


### An emerging multi-omic understanding of the genetics of opioid addiction

**Johnson et al., 2024**

<https://doi.org/10.1172/JCI172886>.

New multi-omic research offers insights into the genetic and biological underpinnings of opioid addiction, highlighting pathways that could inform better treatments. Genetic studies point to key variants in genes like OPRM1 and FURIN, while brain tissue analyses reveal gene dysregulation linked to overdose deaths.



### From TCR fundamental research to innovative chimeric antigen receptor design

**Minguet et al., 2024**

<https://doi.org/10.1038/s41577-024-01093-7>

Engineered T cells expressing chimeric antigen receptors (CARs) have revolutionized hematological cancer treatment by combining tumor-antigen-binding and T cell receptor signaling. While effective for some cancers, new CAR formats are needed to reduce side effects and extend their application to solid tumors.



### Human tissue-resident NK cells in the lung have a higher glycolytic capacity than non-tissue-resident NK cells in the lung and blood

**Jameson et al., 2024**

<https://doi.org/10.1073/pnas.2412489121>

New research shows that tissue-resident NK (trNK) cells in the human lung have a higher glycolytic capacity and glucose dependence than NK cells in the blood, supporting their heightened response capability. This discovery highlights the potential of targeting NK cell metabolism to boost immune function within the lungs.

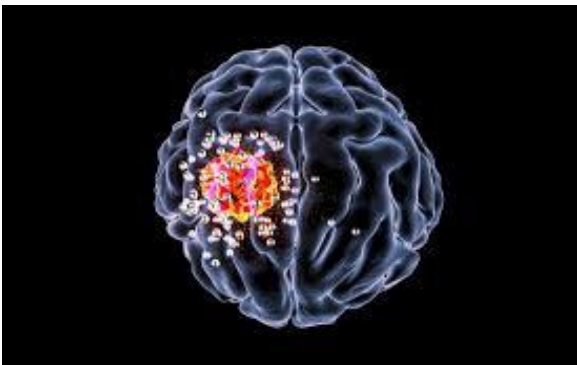


## Functional inversion of circadian regulator REV-ERB $\alpha$ leads to tumorigenic gene reprogramming

Yang et al., 2024

<https://doi.org/10.1073/pnas.2411321121>

A new study reveals that in tumors, the circadian regulator REV-ERB $\alpha$  switches from repressing to activating oncogenic pathways, driving cancer progression. This inversion activates MAPK and PI3K-Akt signaling pathways. Targeting REV-ERB $\alpha$  with SR8278 sensitizes tumors to epigenetic therapies, presenting a novel therapeutic approach for cancers influenced by circadian disruption.



## B cell-based therapy produces antibodies that inhibit glioblastoma growth

Wang et al., 2024

<https://doi.org/10.1172/JCI177384>

A novel B cell-based vaccine (BVax) has demonstrated potential in fighting glioblastoma (GBM), an aggressive brain cancer with few treatment options. BVax-derived antibodies effectively target tumor cell motility and the extracellular matrix, inhibiting GBM cell migration and invasion in preclinical models.



## The future of machine learning for small-molecule drug discovery will be driven by data

Durant et al., 2024

<https://doi.org/10.1038/s43588-024-00699-0>

Many studies predict that integrating machine learning into small-molecule therapeutics development could significantly advance drug discovery. However, despite the use of advanced algorithms and novel architectures, substantial improvements in results have not always materialized.

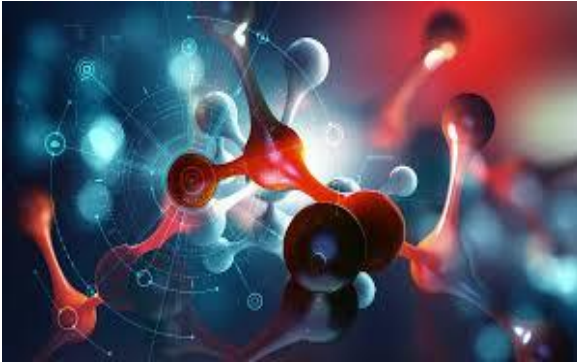


## Cryptosporidium PI(4)K inhibitor EDI048 is a gut-restricted parasitocidal agent to treat paediatric enteric cryptosporidiosis

Manjunatha et al., 2024

<https://doi.org/10.1038/s41564-024-01810-x>

Researchers have developed EDI048, a gut-restricted inhibitor for treating cryptosporidiosis, a severe diarrheal disease impacting young children in low-resource settings. EDI048 targets Cryptosporidium in the gastrointestinal tract and clears infection without significant bloodstream exposure, ensuring safety.



## Targeting DCAF5 suppresses SMARCB1-mutant cancer by stabilizing SWI/SNF

Radko-Juettner et al., 2024

<https://doi.org/10.1038/s41586-024-07250-1>

While oncogenes can often be targeted with small molecules, the loss of tumor suppressors presents a significant challenge since these proteins are absent for targeting. In this study, we investigated SMARCB1-mutant cancers, which are driven by the inactivation of a SWI/SNF chromatin-remodeling complex subunit. Contributing 14 SMARCB1-mutant cell lines to a near genome-wide CRISPR screen as part of the Cancer Dependency Map Project, authors identified the gene DDB1-CUL4-associated factor 5 (DCAF5) as essential for the survival of these cancers. DCAF5 functions as a quality-control factor for SWI/SNF complexes, promoting the degradation of improperly assembled complexes when SMARCB1 is absent.

## RECOMMENDED EVENTS



### FEATURED EVENT

## Riyadh Global Medical Biotechnology Summit (RGMBs) 2024

Invest in Biotechnology for a Healthier Tomorrow

**10 - 12 November 2024**

<https://www.rgmb.org/RGMBsSUMMIT>

Prince Sultan Grand Hall - Faisaliah Tower, Riyadh, Saudi Arabia

It serves as a springboard for biotechnology startups and entrepreneurs to transform innovative concepts into successful businesses by providing essential resources, networking, and funding opportunities. SBIF aims to build a community that shares a vision for the future of biotechnology, offering startups, entrepreneurs and investors the platform they need to succeed.



## BIO-Europe 2024 in Stockholm, Sweden

**The 30th annual BIO-Europe will take place November 4-6, 2024 in Stockholm, Sweden.**

BIO-Europe, Europe's leading partnering event, provides an exceptional opportunity to connect with more potential partners in just three days than you could throughout the entire year.

<https://informaconnect.com/bioeurope/>

# CATAPULT

Cell and Gene Therapy

**WEBINAR:** In collaboration with the [Scottish Enterprise](#), the Cell and Gene Therapy Catapult is hosting a webinar this November to discuss how we are supporting Scottish academic groups in developing a bespoke Target Product Profile (TPP). In this webinar, you will learn about the expert guidance available and how to apply for this funded opportunity.

**Friday 8<sup>th</sup> November 2024, 13:00-13:45 (GMT)**

<https://buff.ly/3U0I4In>

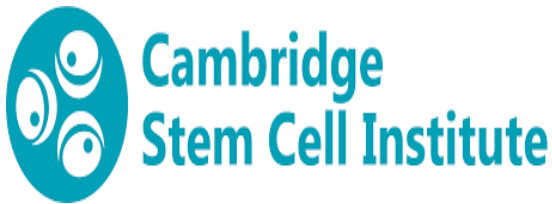
## JOBS CORNER



### 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. Applications are now open for our **2024/2025 PhD studentships**.

<https://www.icr.ac.uk/studying-and-training/phds-for-science-graduates/phd-studentship-projects>



### Cambridge Stem Cell Institute

**5 PhD Positions:** Super excited to announce that we have 5 fully funded PhD positions across the Cambridge Stem Cell Institute for the October 2025 intake:

<https://www.stemcells.cam.ac.uk/postgraduate-funding>



### Chercheur post-doctoral en biologie moléculaire: Greater Strasbourg Metropolitan Area

A post-doctoral position is available in the group of László Tora and Stéphane D. Vincent at the Institute for Genetics, Molecular and Cellular Biology (IGBMC) in Strasbourg (France).

**Dr. László Tora:** [laszlo@igbmc.fr](mailto:laszlo@igbmc.fr) and **Dr. Stéphane D. Vincent:** [vincent@igbmc.fr](mailto:vincent@igbmc.fr)



### SFDA looking for advisory experts

Registration form for scientific advisory committees for the pharmaceutical

To benefit from the diverse experiences and opinions in the field of medicine, invites health professionals and practitioners to register in the list of consultants and experts in the pharmaceutical sector in its various fields.

<https://www.sfda.gov.sa/ar/form/drug-sector-registration-form->



ROTHAMSTED  
RESEARCH

### Bioinformatics Scientist / Team Leader

Rothamsted Research is looking for a talented Bioinformatics Scientist / Team Leader to join Core Bioinformatics group. You will provide critical bioinformatics support and services to the *Delivering Sustainable Wheat (DSW)* research programme.

<https://jobs.rothamsted.ac.uk/vacancies/770/bioinformatics-scientist--team-leader.html>

EMBL



### Postdoctoral Fellowships, Hinxton, UK

As a postdoctoral fellow in the Saez Rodriguez group, you will develop and apply computational methods and tools to study cellular organisation, gene regulation and intra- and intercellular cell-cell communication to extract disease mechanisms from single-cell and spatially resolved multi-omic data.

<https://www.embl.org/jobs/position/EBI02295>

We only ask you to co-sponsor scientific event for the emerging countries contact us: [admin@algeriansca-dz.org](mailto:admin@algeriansca-dz.org)

