FREE
BiWeekly BioSciTech Newsletter
Issue 46: 1 April 2026

https://algeriansca-dz.org/bioscitech

Selection From The Last Two Weeks:

- ***Hottest News In Biotech, BioResearch, Pharma, BioHealth***
- ***Most Impactful Research Papers***
- ***Best Recommended Events and Job Offers.***

Produced by Dr. Mohamed Boudjelal
ASCA Founder

NEWS & COMMENTARIES

Merck Makes $6.7 Billion Oncology Bet

Merck has announced a $6.7 billion deal to acquire clinical-stage biotech Terns Pharmaceuticals, strengthening its oncology/hematology pipeline with promising CML candidate, TERN-701.

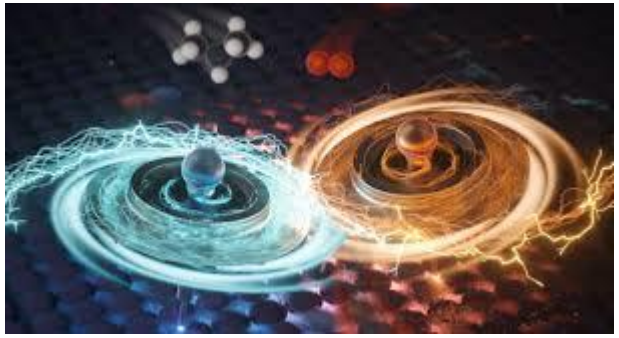
☞ TERN-701 is a novel oral allosteric BCR ABL1 inhibitor for chronic myeloid leukemia (CML)
☞ Currently in Phase 1/2 trials with encouraging early efficacy and safety data
☞ Targets patients with treatment resistance or intolerance to existing TKIs
☞ Granted FDA Orphan Drug Designation in 2024
☞ Expands Merck's oncology pipeline ahead of Keytruda's patent expiry

https://www.biopharmadive.com/news/merck-terns-acquire-deal-leukemia-drug/815637/

New Centre from Imperial, Oxford and GSK will build digital twins of lungs, liver and kidneys

Backed by £11 million in GSK funding, MiMeC will build open source mechanistic models to better understand how diseases affect different parts of the body, including the lungs, liver, kidneys, heart, brain and the immune system, giving researchers new ways to understand how diseases progress and how medicines can be developed and targeted with greater speed and precision.

https://www.imperial.ac.uk/news/articles/2026/new-centre-from-gsk-imperial-and-oxford-will-create-computer-models-of-lungs-liver-and-kidneys/

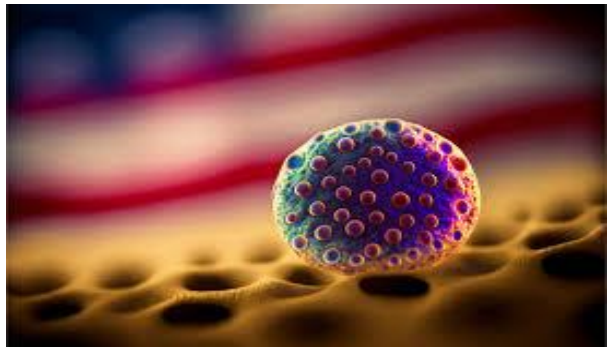


Non--genetic DNAs as programmable molecular baits

Although synthetic gene networks with various DNA architectures can process molecular information in cells, their large size and genetic role limit the systems that can be designed. Here, we engineer retron DNAs to recruit DNA-binding proteins and demonstrate their use as non-genetic molecular baits in several synthetic biology applications.

https://www.nature.com/articles/s41557-026-02102-z

SELECTED PUBLICATIONS

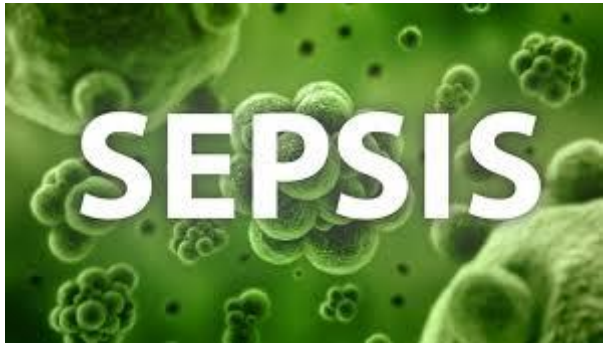


FDA must regulate stem cell therapies to mitigate risks to patients and the public

Taylor Pike, Mary Ann Chirba, and Daniel G. Aaron

DOI:10.1073/pnas.2508586123

In December 2025, the US Food and Drug Administration's (FDA's) Center for Biologics Evaluation and Review (CBER) approved a gene-based stem cell therapy for Wiskott–Aldrich syndrome, a rare and life-threatening genetic disease. This decision was appropriately based on data from two clinical studies that demonstrated a clinical benefit. Unfortunately, this standard of evidence, and FDA approval itself, are not the norm for many stem cell therapies. Instead, hundreds, if not thousands, of clinics have made unproven and unapproved stem cell treatments widely available to treat everything from common sports injuries to neurological diseases.



The bug, the burden, and the biology: beyond host-centric phenotyping in sepsis

Georgios D. Kitsios1,2 and Rebecca M. Baron, 2026

https://doi.org/10.1172/JCI203658.

Chanderraj and colleagues challenge the traditional host-centric sepsis phenotyping model by showing that pathogen characteristics significantly influence sepsis subphenotypes. Their research highlights a strong association between Enterobacterales infections, especially Escherichia coli, and hyperinflammatory subphenotypes, irrespective of illness severity. Factors such as bacterial burden and anatomic barrier breaches contribute to phenotypic classification, impacting even culture-negative sepsis. Animal models affirmed causality, and further analyses indicated that the prognostic value of lactate clearance and the effects of endotoxin removal therapy vary with subphenotype and pathogen type..

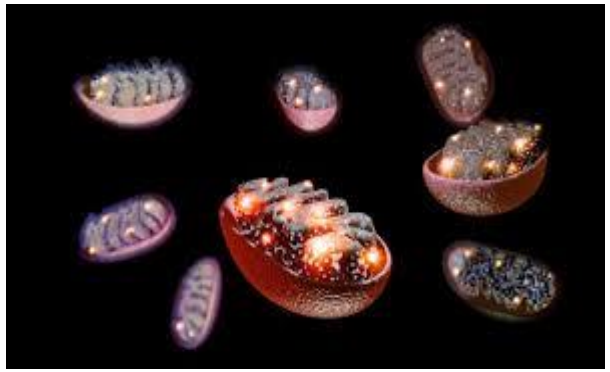
Lessons from Rwanda's response to the Marburg virus outbreak

Sabin Nsanzimana et al., 2026

https://doi.org/10.1038/s41591-025-04163-y

In September 2024, Rwanda declared an outbreak of Marburg virus disease (MVD). One year later, the response is evaluated, showcasing the nation's resilience and effective management, resulting in a case fatality rate of about 23%, significantly lower than the global average of 88% in past outbreaks. A total of 66 patients were identified, with most cases concentrated within the first two weeks and predominantly affecting healthcare workers. The outbreak was largely contained in two referral hospitals in Kigali, and was officially declared over on December 20, 2024, after 42 days without new cases, meeting WHO criteria for closure.

SELECTED PUBLICATIONS



Pluropotent stem-cell-based screening uncovers sildenafil as a mitochondrial disease therapy

Annika Zink et al., 2026

DOI: 10.1016/j.cell.2026.02.008

Mitochondrial disease includes inherited disorders that impair mitochondrial function, with Leigh syndrome (LS) being a severe and untreatable form characterized by psychomotor regression and metabolic crises. To facilitate drug discovery for LS, a library of 5,632 repurposable compounds was screened using neural cells derived from LS-patient-induced pluripotent stem cells (iPSCs). The study identified phosphodiesterase type 5 (PDE5) inhibitors, particularly sildenafil, as promising leads due to its clinical safety. Sildenafil was found to rectify mitochondrial membrane potential defects, restore neurodevelopmental pathways, and normalize calcium responses in LS brain organoids. In both small and large mammalian models of LS, sildenafil extended lifespan and improved disease symptoms. disease.

β-hydroxybutyrate enhances the metabolic fitness of CAR T cells in cancer

Shan Liu et al., 2026

DOI: 10.1016/j.cell.2026.02.004

The study examines the impact of lifestyle factors, specifically the ketogenic diet (KD) and its metabolite β-hydroxybutyrate (BHB), on T cell-mediated cancer immunotherapy. It finds that BHB enhances CAR T cell function by supporting the TCA cycle, which increases energy generation, T cell proliferation, and cytokine production, leading to improved tumor control. BHB also induces transcriptional and epigenetic changes in CAR T cells, resulting in a better metabolic profile

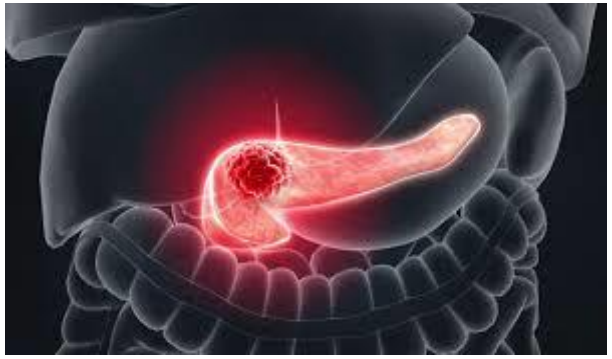
Discovery of MARK2 as a physiological kinase for PER2 in the mammalian clock

Yuxiang Liu et al., 2026

DOI: 10.1016/j.chembiol.2026.02.007

The circadian clock influences daily physiological and behavioral rhythms, with disruptions linked to sleep disorders. A mutation in the PER2 gene (S662G), identified in 2001, leads to familial advanced sleep phase syndrome by impairing phosphorylation at Serine 662. This study identifies microtubule affinity-regulating kinase 2 (MARK2) as a key kinase that phosphorylates PER2 S662, stabilizing the protein and prolonging the circadian period. Deletion of MARK2 in human cells and mouse neurons resulted in shortened rhythms and phase advancement. The findings position MARK2 as an essential regulator of the circadian clock and underscore the role of kinases in this physiological process

SELECTED PUBLICATIONS

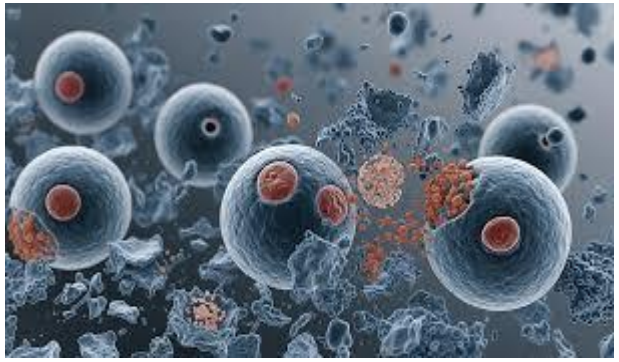


KRASG12D mutation promotes pancreatic tumorigenesis by suppressing sirtuin three via the guanine nucleotide exchange factor RCC1

Taoyi Mai et al., 2026

DOI: 10.1016/j.jbc.2025.111057 External Link

KRASG12D mutation, a key factor in pancreatic cancer, drives tumorigenesis, but its mechanisms are not fully understood. This study investigated the transcriptomic changes after KRASG12D expression in normal human pancreatic epithelial cells. KEGG pathway analysis revealed significant alterations in pathways related to nicotinate metabolism, TNF signaling, and cancer-related microRNAs. The study found SIRT3, a NAD-dependent deacetylase, was down-regulated by KRASG12D, and its overexpression suppressed cancer cell proliferation. RCC1 was identified as a mediator in the down-regulation of SIRT3 by KRASG12D

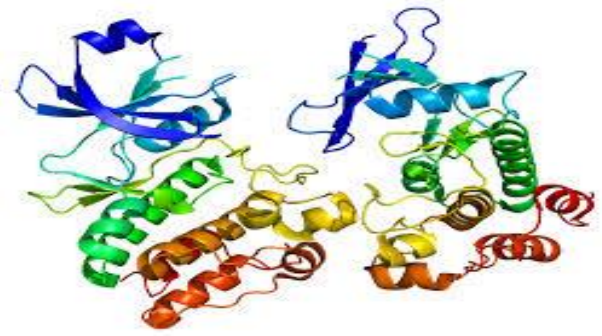


SonoPIN enables precise, noninvasive, and efficient intracellular delivery of PROTACs

Yuqi Wu et al., 2026

DOI :10.1073/pnas.2534439123

Proteolysis-targeting chimeras (PROTACs) offer a novel strategy for targeting undruggable proteins in cancer therapy, but their clinical use is hindered by issues like poor cell permeability and off-target effects. To address these limitations, a new method called Sonoporation-assisted Precise Intracellular Nanodelivery (SonoPIN) was developed. This ultrasound-driven system utilizes aptamer-guided microbubbles to selectively deliver therapeutic agents into target cells while preserving nontarget cells. In experiments with BRD4, a key oncogenic target, SonoPIN significantly enhanced the intracellular delivery of fluorescent PROTACs, leading to a sevenfold increase in fluorescence and a 70% reduction in BRD4 levels in cancer cells



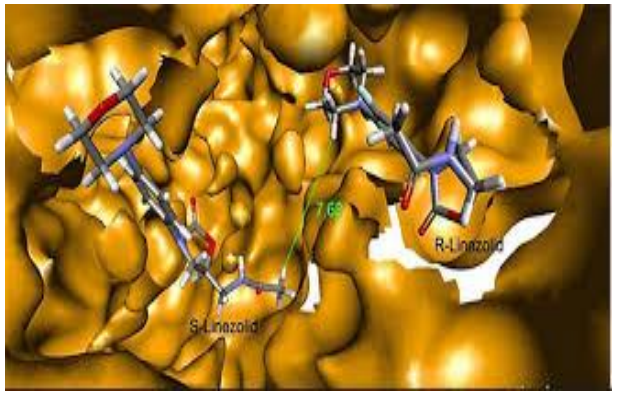
Targeting PIM2 improves antitumor immunity through promoting effector function and persistence of CD8 T cells

Yongxia Wu et al., 2026

https://doi.org/10.1172/JCI192928.

The PIM kinase family, particularly PIM2, plays an important role in tumor development but is not well-studied in primary T cells. PIM2 acts as a negative regulator of T cell responses to alloantigen and antitumor immunity. Removing PIM2 from tumor-specific T cells improved their ability to fight tumor growth in models of breast cancer, melanoma, and leukemia. This deficiency led to more cytokine production and activated metabolic activities in CD8 T cells. Additionally, PIM2 impacts the activity of certain proteins and inhibits the development of memory-like T cells.

SELECTED PUBLICATIONS



Discovery and development of a new oxazolidinone with reduced toxicity for the treatment of tuberculosis

Brendan M. Crowley et al., 2026

https://doi.org/10.1038/s41591-025-04164-x

Linezolid is an important drug for treating highly drug-resistant tuberculosis but cannot be used for drug-susceptible cases due to its toxicity, which affects mitochondrial protein synthesis. Researchers developed a new drug, MK-7762, that has better antitubercular activity and less mitochondrial inhibition than linezolid. Studies using cryogenic electron microscopy showed how MK-7762 selectively targets mycobacterial ribosomes. Testing in mouse models indicated that MK-7762 significantly reduced lung bacterial levels. Additionally, it demonstrated similar tissue penetration as linezolid and showed a favorable safety profile in preclinical studies. MK-7762 is being considered for new tuberculosis treatment combinations for all disease forms.

A minimally invasive dried blood spot biomarker test for the detection of Alzheimer's disease pathology

Hanna Huber et al., 2026

https://doi.org/10.1038/s41591-025-04080-0

Blood biomarkers are effective for detecting Alzheimer's disease (AD) pathology and provide a less invasive alternative to traditional diagnostic methods. However, the process of blood collection requires careful handling and trained medical personnel, limiting their widespread use. The DROP-AD project explores dried plasma spot (DPS) and dried blood spot (DBS) analysis for detecting AD biomarkers like p-tau217. Involving 337 participants, the study found strong correlations between DPS and venous plasma p-tau217, indicating accuracy in predicting CSF positivity. The method worked well for those with Down syndrome.

RECOMMENDED EVENTS & JOB CORNER

Keystone Conferences

Explore New Frontiers in Biology and Medicine
Keystone Symposia will serve as a catalyst for the advancement of biomedical and life sciences by connecting scientists within and across disciplines at conferences and workshops held at venues that create an environment conducive to information exchange, generation of new ideas and acceleration of applications that benefit society.
https://www.keystonesymposia.org/conferences/conference-listing

FOCIS 2026 Annual Meeting

The FOCIS Annual Meeting is THE meeting in translational immunology that will give you a competitive edge in your career.
Immune Microenvironment Interactions (Health and Disease)
Immune Receptors in Health and Disease
Rejuvenating the Immune System
New Approaches to Immune-mediated Disease
https://focisnet.org/meetings/focis-2026/

Principle Scientist, Extracellular Targeted Cancer Therapeutics Stevenage, United Kingdom Science and Technology

The Extracellular Targeted Cancer Therapeutics (ETCT) Biology Unit within the Oncology Research Unit is seeking an experienced Principal Scientist/Senior Principal Scientist to contribute to programs in pre-clinical and early clinical phases in the targeted biologics portfolio focusing on antibody-drug conjugates (ADCs) and T cell engagers (TCEs).
https://jobs.gsk.com/en-gb/jobs/437119?lang=en-us&previousLocale=en-GB

RECOMMENDED EVENTS & JOB CORNER

CANCER RESEARCH UK | Manchester Institute

PhD Student Recruitment | Round 2 | 2026 – NOW OPEN

CRUK 4 Year PhD Studentships #2 2026

We are pleased to announce the following exciting postgraduate opportunities within the CRUK Manchester Institute for intake in 2026!

https://www.cruk.manchester.ac.uk/phd-student-recruitment-round-2-2026-now-open/

AiBST

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https://oxfordhr.com/jobs/aibst-head-of-dmpk-and-bac/

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