Patient Wellness First

Issue: 15 April 2025

BioSciTech biweekly NEWS

NEWS & COMMENTARIES

Greafing of Prof. Omar Aktouf

It is with sadness that Algerian Scholars and Competences Abroad Mourn the death of Omar Aktouf, Professor in the Department of Management who past away on April 2, 2025. He taught and conducted research at the Business School In Montreal, Quebec for over four decades. The author of several books, he distinguished himself in particular for his reflections on management and social justice. **We ask Allah to shower his soul with Mercy and Enter him paradise**

https://www.hec.ca/nouvelles/2025/deces-omar-aktouf.html

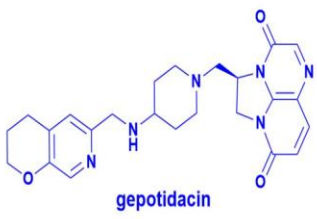
ASCA Event: Register Now

https://algeriansca-dz.org/events/

DZ- Science Day 16 April 2025 , 18h00 DZ

Start Up: Algerian Economy Comptetitiveness: Opportunities and Path to Overcome Challenges

epanel Discussion Animated by Young Successful Algerian Entrepreneurs From Inside Algeria and Around the World



A breakthrough in the fight against antimicrobial resistance: The US FDA has approved gepotidacin (Blujepa), a first-in-class triazaacenaphthylene oral antibiotic from GSK

https://www.gsk.com/en-gb/media/press-releases/blujepa-gepotidacin-approved-by-us-fda-for-treatment-of-uncomplicated-urinary-tract-infections/

Top F.D.A. Vaccine Official Resigns, Citing Kennedy's 'Misinformation and Lies'

The top vaccine official with the Food and Drug Administration has resigned and criticized the nation's top health official for allowing "misinformation and lies" to guide his thinking behind the safety of vaccinations.

https://apnews.com/article/fda-vaccine-chief-peter-marks-resign-rfk-kennedy-7743be11cec4e4e22c50c2ddbcb6bcd8

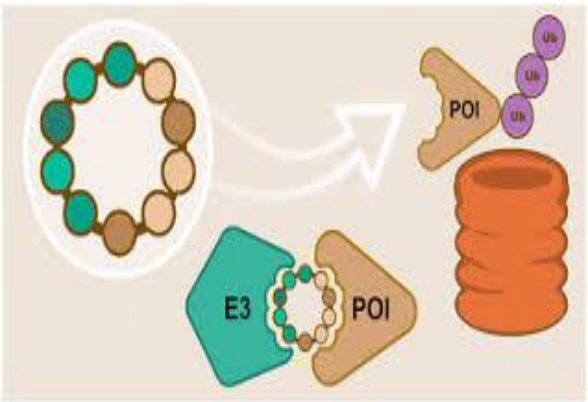
SELECTED PUBLICATIONS

Progress and challenges in developing allogeneic cell therapies

Tobias Deuse1 · Sonja Schrepfer 2025

DOI:10.1016/j.stem.2025.03.004

Autologous cell therapies avoid immune rejection but are hard to scale. A new review highlights advances in engineering allogeneic (donor-derived) cells to evade the immune system. From immune cell therapies to early-stage tissue replacements, gene editing is opening doors to off-the-shelf treatments for more patients.

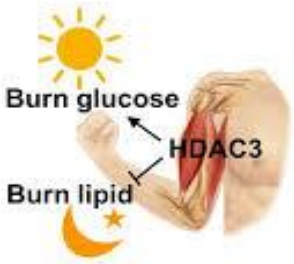


De novo discovery of a molecular glue–like macrocyclic peptide that induces MCL1 homodimerization

Li et al., 2025

DOI:10.1073/pnas.2426006122

A new macrocyclic peptide, 5L1, shows strong and selective binding to the cancer-linked protein MCL1, with potent antitumor activity. Uniquely, it acts like a molecular glue—inducing MCL1 dimerization rather than just blocking it. This novel mechanism opens the door to a new class of selective cancer therapeutics.



Control of circadian muscle glucose metabolism through the BMAL1–HIF axis in obesity

Chaikin et al., 2025

DOI:10.1073/pnas.2424046122

Disrupting the circadian clock gene *BMAL1* in skeletal muscle worsens glucose tolerance in high-fat-diet-fed mice, even without weight gain. The cause? Impaired early glycolysis and disrupted HIF signaling. Restoring HIF1α activity rescues metabolic function—highlighting BMAL1's key role in maintaining glucose flexibility under metabolic stress.

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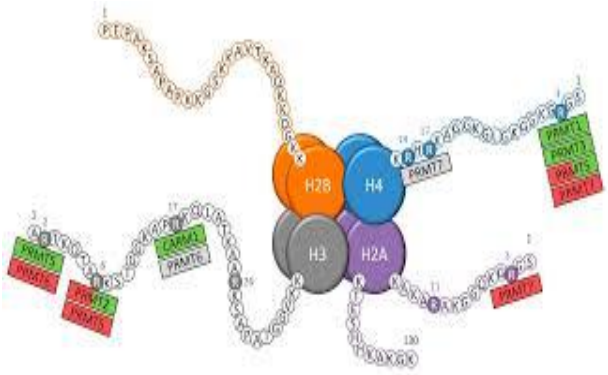

Biomedical effects of protein arginine methyltransferase inhibitors

Cao et al., 2025

DOI:10.1016/j.jbc.2025.108201

Protein arginine methyltransferases (PRMTs) play a pivotal role in regulating cellular processes, and their dysregulation is linked to various cancers. As research into PRMT inhibitors expands, this review summarizes their mechanisms of action and biomedical effects. Notably, PRMT5 inhibitors show promise in targeting cancers with methylthioadenosine phosphorylase deletions. The review also highlights the challenges and opportunities for advancing PRMT inhibitors in clinical therapies.

Dengue virus is particularly sensitive to interference with long-chain fatty acid elongation and desaturation

Hehner et al., 2025

DOI:10.1016/j.jbc.2025.108222

Fatty acid elongases, especially ELOVL4, are crucial for dengue virus (DENV) replication. Knocking down ELOVL4 significantly reduced DENV titers and viral replication. The desaturase FADS2 is also vital for producing infectious DENV particles and modulating immune responses, highlighting key lipid metabolism steps as potential therapeutic targets.

Sleep-wake variation in body temperature regulates tau secretion and correlates with CSF and plasma tau

Canet et al., 2025

https://doi.org/10.1172/JCI182931

Changes in body temperature (BT) during the sleep-wake cycle impact extracellular tau levels, a key factor in Alzheimer's and tauopathies. In mice, increased BT during wakefulness and sleep deprivation boosted tau levels in CSF and plasma, triggering tau dephosphorylation, cleavage, and secretion. Human studies also showed a correlation between BT increases and higher tau levels. These findings highlight the role of thermoregulation in tau-mediated neurodegeneration, suggesting thermal interventions could help prevent disease progression.

By Dr. M.Boudjelal (KAIMRC), Dr. M. Belhocine (AGU), Dr. F. Amokrane Nait Mohamed (Harvard), Dr. Bilal Djeghout (Quadram Institute)

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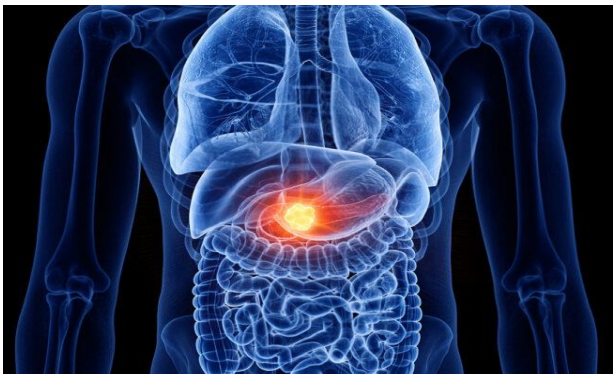
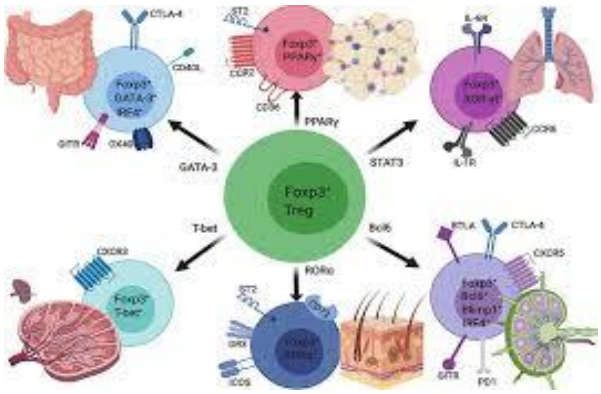


Elevated protein lactylation promotes immunosuppressive microenvironment and therapeutic resistance in pancreatic ductal adenocarcinoma

Sun et al.,2025

https://doi.org/10.1172/JCI187024.

Pancreatic ductal adenocarcinoma (PDAC) exhibits high lactate levels, promoting an immunosuppressive tumor microenvironment (TME) with fewer cytotoxic T cells and more protumor macrophages. Increased protein lactylation correlates with poor immunotherapy outcomes. Targeting lactate production via glycolysis or mutant-KRAS inhibition reshapes the TME, improving immune checkpoint blockade (ICB) therapy. Lactate induces ENSA-K63 lactylation, activating STAT3/CCL2 signaling, which recruits tumor-associated macrophages (TAMs). Therapeutically targeting ENSA-K63la or CCL2 enhances ICB efficacy in preclinical models, offering potential for improved PDAC treatment.

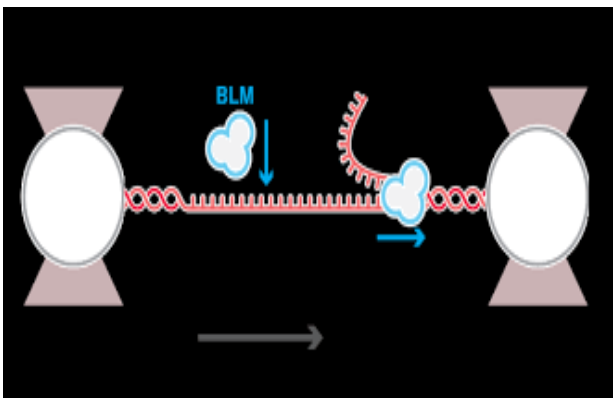


AMPK is necessary for Treg functional adaptation to microenvironmental stress during malignancy and viral pneumonia

Acosta et al., 2025

https://doi.org/10.1172/JCI179572.

Regulatory T (Treg) cells require mitochondrial metabolism to function optimally under stress caused by malignancy or lung injury. AMPK is critical for Treg activity in melanoma and viral pneumonia but not for maintaining immune homeostasis. AMPK regulates DNA methyltransferase 1 to support mitochondrial function, linking DNA methylation to metabolic adaptation. Targeting AMPK offers therapeutic potential for cancer and tissue injury.



Structural dynamics of DNA unwinding by a replicative helicase

Shahid et al., 2025

https://doi.org/10.1038/s41586-025-08766-w

Hexameric helicases unwind DNA by forming head-to-head hexamers at replication origins, creating bidirectional replication forks. Cryo-electron microscopy reveals helicase-driven strand separation and ATP hydrolysis functioning as an "entropy switch" to facilitate DNA translocation. These findings provide a detailed model of replication fork establishment across viral and eukaryotic systems.

By Dr. M.Boudjelal (KAIMRC), Dr. M. Belhocine (AGU), Dr. F. Amokrane Nait Mohamed (Harvard), Dr. Bilal Djeghout (Quadram Institute)

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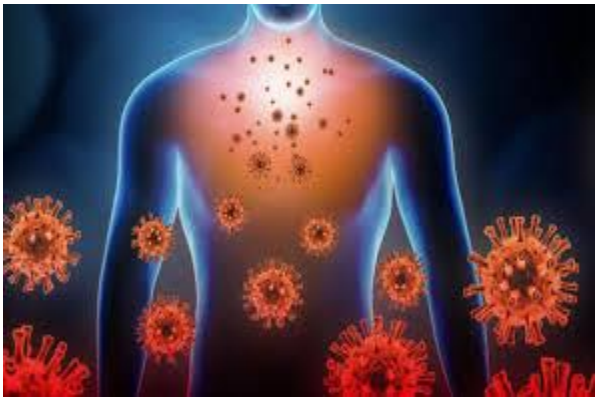


Asian diversity in human immune cells

Kock et al 2025

DOI:10.1016/j.cell.2025.02.017

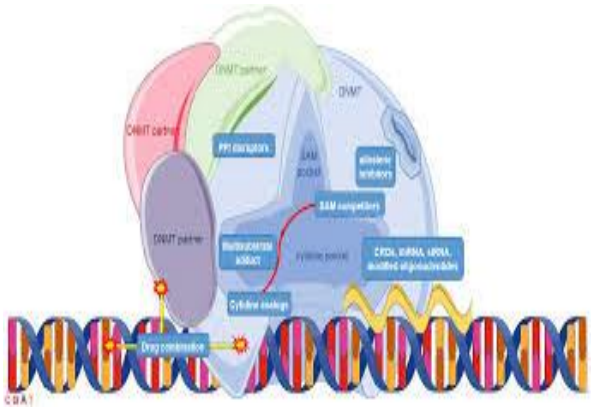
The Asian Immune Diversity Atlas (AIDA) maps immune cell diversity using single-cell RNA sequencing of 1,265,624 cells from 619 donors across seven Asian populations. Subcontinental diversity, age, and sex significantly influence immune cell properties and disease-relevant genes. AIDA contextualizes genetic variants underrepresented in non-Asian populations, aiding precision medicine efforts globally.

Optimal dietary patterns for healthy aging

Tessier et al., 2025

https://doi.org/10.1038/s41591-025-03570-5

Long-term adherence to diets rich in fruits, vegetables, whole grains, nuts, legumes, unsaturated fats, and low-fat dairy improves odds of healthy aging free from chronic diseases. Plant-based diets with moderate inclusion of healthy animal-based foods enhance cognitive, physical, and mental health outcomes, guiding future dietary recommendations.



Potent and selective SETDB1 covalent negative allosteric modulator reduces methyltransferase activity in cells

Uguen et al., 2025

https://doi.org/10.1038/s41467-025-57005-3

UNC10013 is a selective covalent ligand targeting SETDB1's triple Tudor domain (3TD), reducing methyltransferase activity with high potency and proteome-wide selectivity. It modulates Akt methylation in cells and offers a promising tool for studying SETDB1's role in disease progression.

By Dr. M.Boudjelal (KAIMRC), Dr. M. Belhocine (AGU), Dr. F. Amokrane Nait Mohamed (Harvard), Dr. Bilal Djeghout (Quadram Institute)

RECOMMENDED EVENTS & JOBS CORNER

The UK Human Functional Genomics Initiative Inaugural Scientific Symposium

Join us for the inaugural UK Human Functional Genomics Initiative Scientific Symposium at the University of Exeter. Our aim is to advance the understanding of disease mechanisms by decoding the functions of every gene in the human genome. By exploring the functional consequences of disease-associated genetic variation, we will uncover critical insights to drive the development of novel treatments and interventions.

Date and time: Monday, June 16 · 10:30am - 6pm GMT+1

Location: University of Exeter

https://www.eventbrite.co.uk/e/the-uk-human-functional-genomics-initiative-inaugural-scientific-symposium-tickets-1087063138109

Exciting funding opportunity to use AstraZeneca's world-leading facilities for high throughput screening.

This is a unique opportunity for academic drug discovery projects allowing access to:

1-over two million molecules in AstraZeneca's compound library

2-advanced compound management facilities

advanced screening robotics

3-multiple state-of-the-art assay platform technologies

This opportunity is open to all targets and disease areas. In this round, we would also like to encourage applications related to pain or women's health (including conditions related to metabolic disorders). **https://www.ukri.org/opportunity/small-molecule-high-throughput-screen-using-astrazeneca-facilities/**

Vacancies

Throughout the year we have vacancies available for faculty (group leaders), scientific staff, scientific support staff, postdoctoral fellows, PhD students, and operational staff. In addition to those, we offer rotation projects to master's students and student technicians. Find a list of our current vacancies below.

https://www.nki.nl/careers-study/vacancies/

Faculty Leadership Position- Clinical Neuroscience Research

Virginia Tech (VT) seeks to recruit an innovative physician-neuroscientist to its new Patient Research Center (PRC) at the Fralin Biomedical Research Institute at VTC (FBRI - https://fbri.vtc.vt.edu/) for a tenured or tenure-track faculty leadership position at the associate or full professor level. The PRC initiative has received substantial funding support to launch this major exciting new program.

https://www.higheredjobs.com/faculty/details.cfm?JobCode=179093877

Assistant or Associate on Term Professor (Tenure-Track): Yale Center for Molecular and Systems Metabolism, Yale University School of Medicine (Pharmacology)

https://jobs.sciencecareers.org/job/669174/assistant-or-associate-on-term-professor-tenure-track-/

If you want your article of be featured with us email us @ admin@algeriansca-dz.org