

## NEWS &amp; COMMENTARIES



Abderrezak Bouchama,  
médecin et chercheur algérien,  
primé par l'UNESCO

## UNESCO-Equatorial Guinea International Prize for Life Sciences

Algerian physician and researcher Dr. Abderrezak Bouchama, Chairman of the Department of Experimental Medicine at the King Abdullah International Medical Research Center (KAIMRC) in Riyadh, Kingdom of Saudi Arabia, is among the three recipients of the 2025 UNESCO-Equatorial Guinea International Prize for Life Sciences, which recognizes work that has improved the quality of life for populations. UNESCO highlights his research on heatstroke, which has made him one of the world's leading experts on pathologies related to extreme temperatures. Born in Constantine, in the Souika

district, Abderrezak Bouchama studied at the Benbadis University Hospital before specializing in intensive care in Paris, where he practiced for eight years in several renowned university hospitals.

<https://www.youtube.com/watch?v=3TVcr1-p9zc>



## Pascal Soriot, CEO of AstraZeneca: “The pharmaceutical industry will be drastically reduced in Europe within fifteen years.”

The decline of Europe's capacity to manufacture innovative medicines risks accelerating under the influence of the policies pursued by US President Donald Trump, warns the head of the pharmaceutical giant. According to him, all of its new factories producing the medicines of tomorrow will be built across the Atlantic.

[https://www.lemonde.fr/article-offert/c34f3e9fbaf6-6658285/pascal-soriot-pdg-d-astrazeneca-l-industrie-pharmaceutique-sera-reduite-a-peau-de-chagrin-en-europe-d-ici-a-quinze-ans?lmd\\_medium=al&lmd\\_campaign=envoye-par-appli&lmd\\_creation=ios&lmd\\_source=default](https://www.lemonde.fr/article-offert/c34f3e9fbaf6-6658285/pascal-soriot-pdg-d-astrazeneca-l-industrie-pharmaceutique-sera-reduite-a-peau-de-chagrin-en-europe-d-ici-a-quinze-ans?lmd_medium=al&lmd_campaign=envoye-par-appli&lmd_creation=ios&lmd_source=default)



## Insilico Medicine Announces US\$888 Million Multi-Year Collaboration with Servier for Drug Discovery and Development in Oncology

Insilico Medicine achieved an R&D collaboration with Servier valued at up to US\$888 million, focused on discovering and developing innovative oncology therapies, by combining Insilico's AI-driven drug discovery platforms with Servier's global expertise in cancer drug development.

Under the terms of the agreement

<https://insilico.com/news/u4cbsok2s1-insilico-medicine-announces-us888-millio>



## Road for Getting the Ph.D. Mixed with a Smile and Cry.

**By Morten Scheibye-Knudsen**

Getting a PhD is tough! But some have a tougher path than others. Amanuel Abraha Teklu is one of those people. During his PhD work he was exploring how altitude affects aging in the Tingray region of Ethiopia when a war broke out. The university was bombed and he literally fought for his life. After the war he went back to work and managed to publish a really interesting paper

I'm therefore extremely happy that he managed to complete his thesis and defended last week. Thanks to Marco Demaria and Tinna Stevnsner for evaluating his thesis. And congrats Amanuel.

<https://www.linkedin.com/in/morten-scheibye-knudsen-1b30335/>

## Deep learning reveals diverging effects of altitude on aging

**Amanuel Abraha Teklu, Indra Heckenbach, Michael Angelo Petr, Daniela Bakula, Guido Keijzers & Morten Scheibye-Knudsen**

<https://doi.org/10.1007/s11357-024-01502-8>

## SELECTED PUBLICATIONS



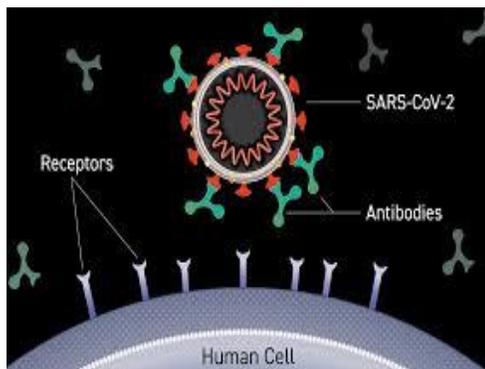
## Synthetic lethality in cancer drug discovery: challenges and opportunities

**Emanuel Gonçalves, Colm J. Ryan & David J. Adams**

<https://doi.org/10.1038/s41573-025-01273-7>

Synthetic lethality has potential for targeted cancer therapy, particularly seen in the success of PARP inhibitors for BRCA-mutant cancers. However, few additional therapies have emerged from preclinical studies due to challenges in drug development and the specific nature of genetic interactions. This Review covers recent progress in discovering and validating synthetic lethal pairs, using CRISPR methods, machine learning for prioritizing candidates, and alternative readouts like high-content imaging to

enhance understanding of cancer therapy potential.

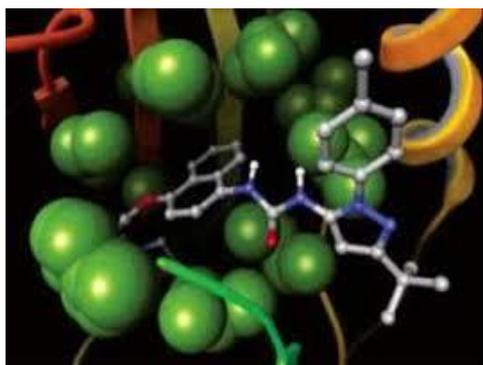


## Safety and pharmacokinetics of SARS-CoV-2 DNA-encoded monoclonal antibodies in healthy adults: a phase 1 trial

**Pablo Tebas et al., 2025**

<https://doi.org/10.1038/s41591-025-03969-0>

Local intramuscular administration of synthetic plasmid DNA (pDNA) encoding monoclonal antibodies (mAb) provides an alternative delivery method to traditional protein-based mAbs. In this phase 1 study, safety and pharmacokinetics of a pDNA cocktail encoding modified versions of SARS-CoV-2 neutralizing mAb were evaluated in healthy adults. All 44 participants tolerated the treatment well, with mAbs detected in 100% of those evaluated. Results showed sustained expression for 72 weeks and promising neutralizing activity against SARS-CoV-2 variants.

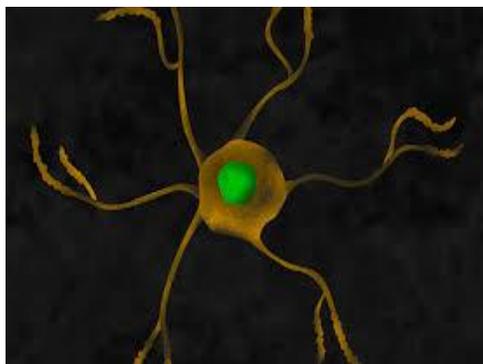


## Flexible protein–ligand docking with diffusion-based side-chain packing

**Runze Zhang et al., 2025**

<https://doi.org/10.1073/pnas.2511925122>

Understanding protein structure and dynamics is important for biology and drug design. PackDock combines deep learning and physics-based modeling to represent protein-ligand interactions. It addresses protein flexibility and helps in identifying new compounds and insights into protein dynamics for research and drug discovery.

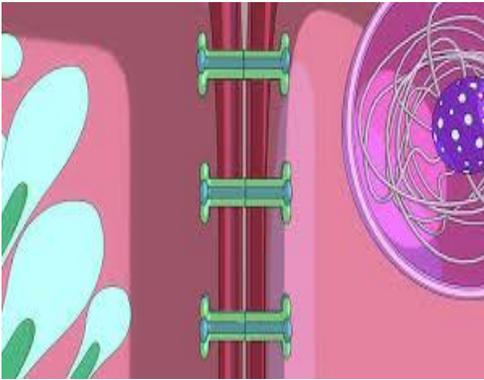


## ATM interaction with GRP94 modulates oncogenic receptor expression and signaling and microglial activation

**Paige E. Burrell et al., 2025**

<https://doi.org/10.1073/pnas.2518589122>

Ataxia-telangiectasia (A-T) is caused by mutations in the ATM gene, leading to various health issues like neurodegeneration, cancer risk, and immune problems. ATM is important for managing DNA damage, but it also has other roles. Researchers discovered that ATM interacts with GRP94, a protein that helps stabilize membrane proteins like receptor tyrosine kinases (RTKs). In cells lacking ATM, RTKs were more active, but this could be corrected by inhibiting GRP94. The study suggests that targeting GRP94 may help treat A-T and other related disorders.

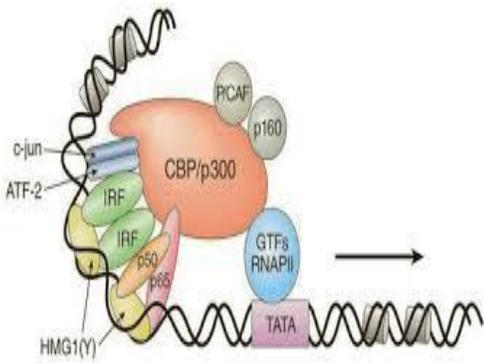


## Controllable gap junctions by vitamin B12 and light

**Duo Cui et al., 2025**

<https://doi.org/10.1073/pnas.2518037122>

This study introduces CarGAP, a chemo-optogenetic tool that enables precise, reversible control of gap junctions—critical structures for cell-to-cell communication in multicellular organisms. Thanks to its dual response to vitamin B12 and light, CarGAP allows researchers to manipulate gap junctions with high spatiotemporal precision in both vertebrate and invertebrate systems.



## Pharmacologic reversion of Merkel cell carcinoma via CBP/p300 inhibition

**Joseph L. Collura et al., 2025**

<https://doi.org/10.1073/pnas.2516667122>

Merkel cell polyomavirus (MCV) T antigen acts as an oncoprotein driving Merkel cell carcinoma (MCC) growth by activating factors for cell proliferation. Blocking the coactivator CBP/p300 reduces T antigen expression, causing cell cycle arrest and promoting differentiation in MCC cells. RNA sequencing shows downregulation of key oncogenic genes and a differing

transcriptomic profile in some MCC cases, suggesting varied tumor characteristics. The study offers a model for switching between cancerous and differentiated states using small molecules.

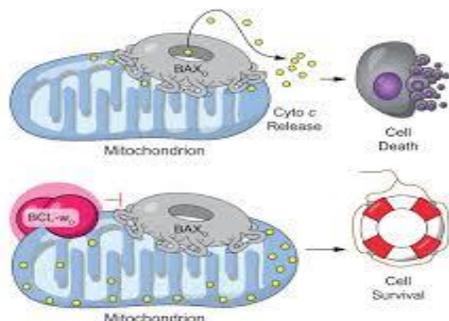


## An ultrapotent human antibody neutralizes all maturation states of Zika virus

**Bo Shu et al., 2025**

<https://doi.org/10.1073/pnas.2502522122>

Zika virus (ZIKV) can cause serious health issues, including microcephaly in fetuses, and there is currently no treatment or vaccine available. Researchers studied how the powerful antibody HMAb A9E can neutralize both mature and immature ZIKV particles by examining their structures. A9E binds to specific parts of the virus and can prevent it from attaching to cells by distorting the virus.



## Inhibition of oligomeric BAX by an anti-apoptotic dimer

**Catherine E. Newman et al., 2025**

DOI: [10.1016/j.cell.2025.10.037](https://doi.org/10.1016/j.cell.2025.10.037)

BAX is a pro-apoptotic protein that can trigger cell death by forming structures that damage mitochondria when stressed. The study finds that BCL-w forms a specific dimer that inhibits BAX's harmful effects, changes its shape, and affects how cells respond to apoptosis.



## Distinct components of mRNA vaccines cooperate to instruct efficient germinal center responses

**Diana Castaño et al., 2025**

DOI: [10.1016/j.cell.2025.11.023](https://doi.org/10.1016/j.cell.2025.11.023)

Nucleoside-modified mRNA vaccines help create protective antibodies by promoting T follicular helper (Tfh) cell differentiation. The lipid nanoparticles (LNPs) boost this process by stimulating dendritic cells (DCs) and enhancing their function. The study reveals how both mRNA and LNPs influence

Tfh cell responses for better vaccine design.



## StealTHY: An immunogen-free CRISPR platform to expose concealed metastasis regulators in immunocompetent models

**Massimo Saini et al., 2025**

DOI: [10.1016/j.cell.2025.10.007](https://doi.org/10.1016/j.cell.2025.10.007)

CRISPR screens are widely used for gene discovery but struggle with in vivo studies due to immune reactions. This study presents StealTHY, an immunogen-free CRISPR platform that maintains clonal structure and reveals hidden cancer targets, including the AMH-AMHR2 axis, improving applicability in immunocompetent

models.



## RNA modification systems as therapeutic targets

**Linda Zhang, Jiangbo Wei, Zhongyu Zou & Chuan He**

<https://doi.org/10.1038/s41573-025-01280-8>

Ribonucleotide bases can be modified by enzymes to affect RNA processes. Abnormal RNA modification levels are linked to diseases, leading to interest in treatments targeting these systems, such as inhibiting METTL3. This Review discusses RNA modification proteins, focusing on the N6-methyladenosine pathway and treatment potential.

## RECOMMENDED EVENTS & JOB CORNER



**The NOSTER & Science Microbiome Prize** is an international award that recognizes innovative research by investigators who received their M.D., Ph.D., or M.D./Ph.D. in the last ten years, and are working on the functional attributes of the microbiota. The research can include any organism that has potential to contribute to our understanding of human or veterinary health and disease, or to guide therapeutic interventions. [https://noster.secure-](https://noster.secure-platform.com/a/organizations/main/submissions/localroundclosed?localRoundId=379)

[platform.com/a/organizations/main/submissions/localroundclosed?localRoundId=379](https://noster.secure-platform.com/a/organizations/main/submissions/localroundclosed?localRoundId=379)



**The African Bioinformatics Institute (ABI)** is accepting applications for its Associate Group Leader (AGL) programme, aimed at recognising and supporting mid-career researchers ( $\leq 15$  years post-PhD) leading independent bioinformatics groups in Africa.

<https://redcap.h3abionet.org/redcap/surveys/?s=8YLHFXD9WCYM8HAD>



APPLY NOW



**Doha Institute for Graduate Studies** offers a wide variety of scholarships annually to attract academically qualified students from within and outside the State of Qatar. The scholarships vary, some awarded on the basis of merit and academic competition, while others are based on financial need.

<https://www.dohainstitute.edu.qa/en/admissions-office/pages/scholarships.aspx>



### Lecturer in Synthetic-Medicinal Chemistry or AI-enabled Medicinal Chemistry

The Lectureship aims to advance research in medicinal chemistry (including closely related research areas such as chemical biology) or development of AI approaches to enable medicinal chemistry.

<https://www.jobs.manchester.ac.uk/Job/JobDetail?JobId=33839>

Kindly share the newsletter with your network.

Let us benefit other scientists.