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VacCiencia es una publicación dirigida a investigadores y especialistas dedicados a la vacunología y temas afines, con el ojetivo de serle útil.

Usted puede realizar sugerencias sobre los contenidos y de esa forma crear una retroalimentación que nos permita acercarnos más a sus necesidades de información.

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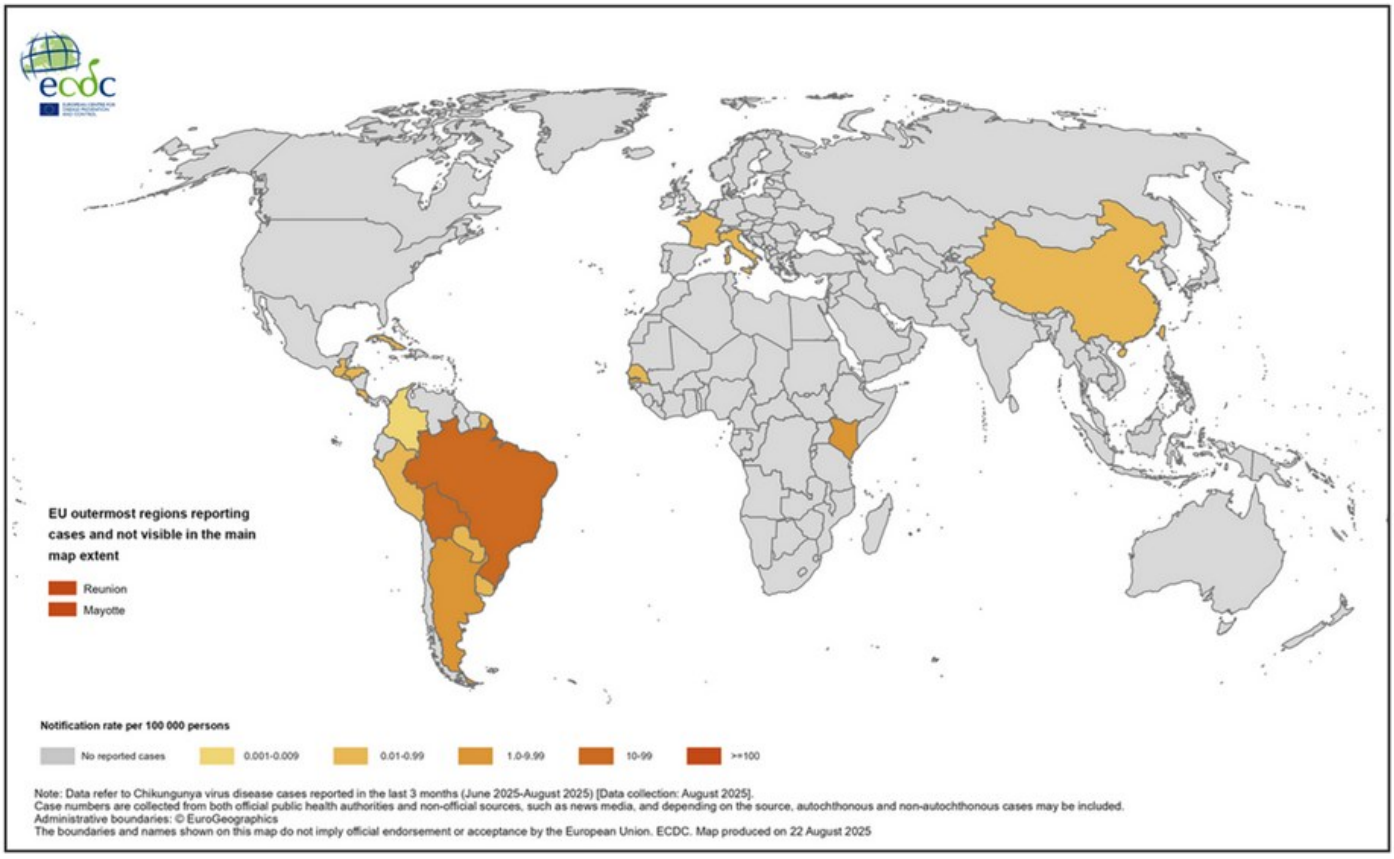
Vacunas contra el chikungunya: Entre el hito científico y la cautela en la implementación

El virus del chikungunya se identificó por primera vez en Tanzania en 1952 y desde entonces se ha extendido por todo el mundo, con importantes epidemias reportadas en África y Asia. Este virus provoca una enfermedad tropical que, si bien se reportaron brotes esporádicos en la segunda mitad del siglo XX, los casos de chikungunya se han vuelto más frecuentes y generalizados desde 2004, expandiendo significativamente su área de distribución geográfica a países de Asia, África, América, Europa y Oceanía. Esto se debe a mutaciones en el virus que permiten a los mosquitos propagarlo con mayor facilidad. El calentamiento global hace que las zonas se vuelvan habitables para que los mosquitos transmitan el virus, lo que aumenta el riesgo de infecciones. Es por ello, que esta enfermedad representa una creciente preocupación para la salud pública.

En los ocho primeros meses de 2025 se registraron más de 300000 casos de enfermedad por el virus CHIKV y 135 muertes en Asia (en la provincia china de Guangdong se registraron más de 8000 casos en poco más de un mes a principio de verano), África, Europa (se han experimentado temporadas de transmisión más largas e intensas de enfermedades transmitidas por mosquitos) y en el continente americano (el 97 % en Sudamérica, especialmente en Bolivia, Brasil y Paraguay).



La evidencia sobre la carga de la enfermedad del chikungunya, junto con el impacto económico y en la salud pública de la vacunación, es fundamental para la toma de decisiones sobre el desarrollo y la introducción de una vacuna contra el chikungunya en entornos endémicos y epidémicos, con el fin de prevenir dicha enfermedad en personas con mayor riesgo de exposición al virus.

Desarrollo de vacunas contra el chikungunya

El desarrollo de estas vacunas a nivel mundial, ha logrado un hito histórico con las primeras autorizaciones

de uso, pero se encuentra en una etapa inicial de implementación, con desafíos regulatorios y logísticos importantes.

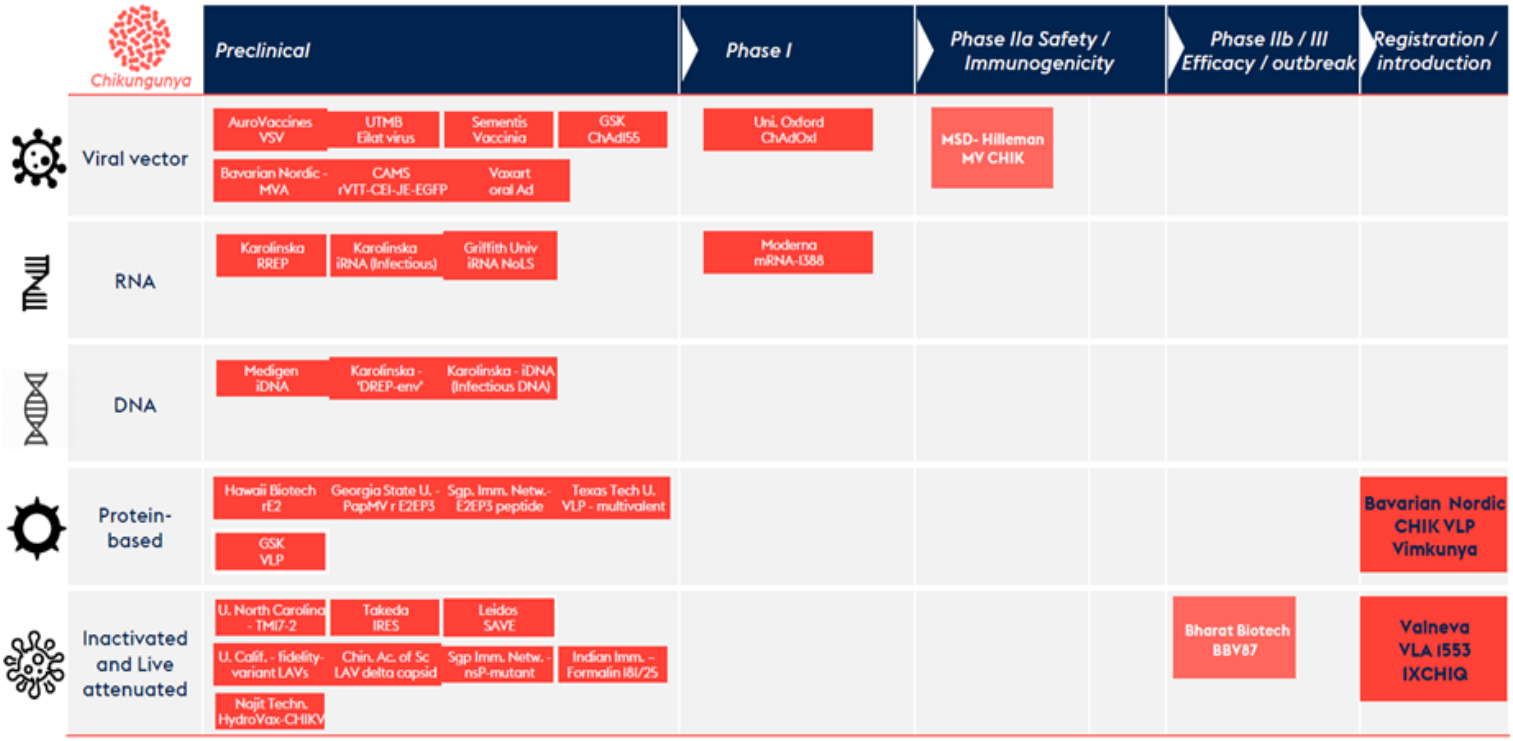
Dos vacunas, (VLA1533/IXCHIQ – Valneva) y (CHIK VLP/Vimkunya – Bavarian Nordic) han demostrado resultados prometedores, habiendo recibido aprobación en varios países para viajeros y personas con mayor riesgo, pero ninguna de ellas ha sido precalificada por la OMS ni se ha autorizado ampliamente en países de ingresos bajos y medios, donde la carga de la enfermedad es mayor.

La primera vacuna contra el chikungunya IXCHIQ (Valneva) recibió la autorización de la Administración de Alimentos y Medicamentos de los Estados Unidos (FDA) en 2023 y de la Agencia Europea de Medicamentos (EMA) y Health Canada en 2024.

Debido a la dificultad para llevar a cabo estudios de eficacia y efectividad en el terreno, la aprobación de ambas vacunas se ha basado en datos inmunológicos que demuestran que inducen respuestas inmunitarias fuertes y duraderas.

De acuerdo al documento presentado por CEPI en la "Actualización del seminario web EPI-WIN de la OMS sobre el brote de enfermedad por el virus de Chikungunya" realizado en mayo de 2025, las vacunas IXCHIQ (virus vivo atenuado) y Vimkunya (partícula similar al virus) ya están en fase de registro e introducción.

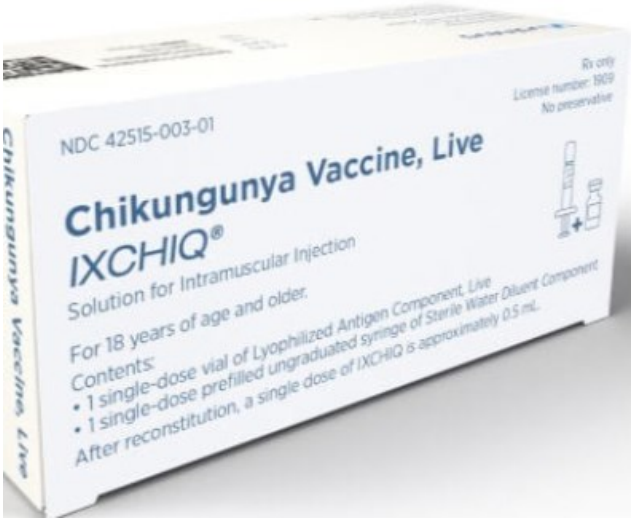
Del resto de las vacunas en desarrollo, algunas se encuentran en fase 2 de ensayo clínico: BBV87 (virus inactivado) y MV-CHIK (con vector viral); otras en fase 1 (ChAdOx/Oxford y mRNA-1388/Moderna) y en fase preclínica otras más que utilizan diversas plataformas: ARNm, ADNc, LAV, inactivadas, adenovirus, vectores virales y VLP.



Panorama del desarrollo de la vacuna contra el chikungunya. CEPI may/2025

Ixchiq (Valneva)

Aprobada por la EMA actualmente en personas de 12 a 64 años de edad. Es una vacuna de virus atenuados producidos en células Vero que se administra por vía IM en dosis única. Inicialmente, en junio de 2024, se aprobó para personas de 12 o más años de edad.



En mayo de 2025, la EMA estableció una pausa en el uso de Ixchiq en personas de 65 o más años, pero en julio pasado se informó de que esta restricción se cancelaría, aunque esta modificación aún no se recoge en la ficha técnica.

En junio de 2025, Valneva publicó datos de inmunogenicidad y seguridad de esta vacuna en niños de 1 a 11 años de edad (estudio de fase 2), y más recientemente datos de persistencia de anticuerpos a los cuatro años en más del 95 % de los vacunados adultos.

En agosto de 2025, la FDA suspendió la licencia de esta vacuna. La decisión se basó en graves preocupaciones de seguridad relacionadas con la vacuna, que parece estar causando una enfermedad similar al chikungunya en los receptores de la vacuna. Se registró una muerte por encefalitis directamente atribuible a la vacuna y se han notificado más de 20 eventos adversos graves que incluyen 21 hospitalizaciones y 3 muertes. Debido a ello, la FDA considera que esta vacuna no es segura y que su administración continuada al público representaría un peligro para la salud.

Según una publicación en la revista The Lancet estos hechos no han sido suficientemente explicados por la agencia estadounidense y algunos expertos han destacado la necesidad de contar con más información sobre la seguridad de esta vacuna.

Vimkunya (Bavarian Nordic)

Vimkunya es una vacuna recombinante que contiene las proteínas C de la cápside y E1 y E2 de la envoltura del virus CHIKV Senegal cepa 37997. Estas proteínas se ensamblan formando partículas similares a virus (virus-like particle, VLP) que no son infecciosas. No contiene material genético. Se administra por vía IM en dosis única.

Fue aprobada por la EMA y por la FDA para su uso en personas a partir de 12 años de edad en febrero de 2025. Recientemente se han publicado resultados de inmunogenicidad y seguridad en adolescentes y adultos y en mayores de 65 años.

Papel de las vacunas en el control del chikungunya

Debido a la limitada información disponible sobre la epidemiología y de la carga subyacente de la infección por el virus CHIKV, así como del impacto real de la enfermedad, pesa una gran incertidumbre sobre el papel que pueden jugar las vacunas. No obstante, se estima que el chikungunya es una grave amenaza para la salud pública en gran parte del mundo, por lo que el desarrollo de medidas de vigilancia clínica y virológica, y el control de la población de mosquitos vectores, son objetivos prioritarios que necesitan más atención y financiación.

El Programa Mundial contra Mosquitos pretende introducir suficientes A. aegypti infectados con la bacteria Wolbachia para proteger a 100 millones de personas del dengue. Pero este plan protegería solo parcialmente frente al chikungunya.

Se espera que una vacuna frente al CHIKV eficaz tendría, en un marco teórico, el potencial de reducir el riesgo de infección a nivel individual, y de proteger a las poblaciones del impacto económico de los brotes, que puede ser considerable debido a la naturaleza duradera y debilitante de las secuelas crónicas. La OMS, CEPI, Gavi y otras entidades siguen impulsado el desarrollo de vacunas frente al virus CHIKV.

No obstante, tomar decisiones respecto a estas vacunas va a ser sumamente difícil. A. Wilder-Smith, de la London School of Hygiene & Tropical Medicine, ha comentado: "Si se produce un brote de chikungunya este año, se sabe que no habrá otro en 10 años, quizás más. Por lo tanto, tal vez la vacuna deba ser de uso reactivo, en cuyo caso se necesita tener una reserva".

Sin embargo, se ha constatado que el chikungunya también es capaz de hacerse endémico, como ha ocurrido en Brasil, África Oriental e India. En espera de hallar respuestas, lo que todos los expertos destacan es la importancia de intensificar la vigilancia. La misma autora citada antes ha añadido: "Tenemos que saber cuánto chikunguña hay y dónde se concentra, para poder tomar decisiones informadas sobre la prevención y el control, y la mejor manera de usar las vacunas". Tal vez una campaña de vacunación que actualmente se desarrolla en Reunión (Francia, Océano Índico) pueda aportar información que aclare algunos de estos aspectos.

Con todo, debe destacarse que la lucha contra la enfermedad causada por el virus CHIKV debe formar parte de estrategias globales que contemplen el establecimiento de prioridades por regiones, fortalecimiento de la vigilancia entomológica y virológica, las acciones sobre los vectores, y la participación de las comunidades afectadas, entre otros aspectos.

Fuentes:

CEPI. *Chikungunya*. Disponible en https://cepi.net/chikungunya

Claire Smalley, Jesse H. Erasmus, Charles B. Chesson, David W.C. Beasley. *Status of research and development of vaccines for chikungunya*. Disponible en https://www.sciencedirect.com/science/article/pii/S0264410X16300731?ref=cra_js_challenge&fr=RR-1

Talha Burki. *Chikungunya's global resurgence*. Disponible en https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01745-3/abstract

European Centre for Disease Prevention and Control. *World Mosquito Day 2025: Europe sets new records for mosquito-borne diseases*. Disponible en https://www.ecdc.europa.eu/en/news-events/world-mosquito-day-2025-europe-sets-new-records-mosquito-borne-diseases

Clara Maure, Kanat Khazhidinov, Hyolim Kang, Megan Auzenbergs, Pascaline Moyersoen, Kaja Abbas, et al. *Chikungunya vaccine development, challenges, and pathway toward public health impact*. Disponible en https://www.sciencedirect.com/science/article/pii/S0264410X24011654?via%3Dihub

CEPI. *Chikungunya Vaccine Development Landscape. WHO EPI-WIN Webinar Update on Chikungunya virus disease outbreak*. May 2025.

Manual Merck. *Vacuna contra el chikungunya*. Disponible en https://www.merckmanuals.com/es-us/professional/enfermedades-infecciosas/vacunaci%C3%B3n/vacuna-contra-el-chikungunya

European Medicines Agency. *Ixchiq Chikungunya vaccine (live)*. Disponible en https://www.ema.europa.eu/en/medicines/human/EPAR/ixchiq

European Medicines Agency. *Ficha técnica o resumen de las características del producto IXCHIQ*. Disponible en https://www.ema.europa.eu/es/documents/product-information/ixchiq-epar-product-information_es.pdf

European Medicines Agency. *Ixchiq: temporary restriction on vaccinating people 65 years and older to be lifted*. Disponible en https://www.ema.europa.eu/en/documents/referral/ixchiq-article-20-procedure-ixchiq-temporary-restriction-vaccinating-people-65-years-older-be-lifted_en.pdf-0

Valneva. *Valneva Reports Positive Six-Month Antibody Persistence and Safety Phase 2 Results in Children for its Single-Shot Chikungunya Vaccine IXCHIQ®*. Disponible en https://valneva.com/press-release/valneva-reports-positive-six-month-antibody-persistence-and-safety-phase-2-results-in-children-for-its-single-shot-chikungunya-vaccine-ixchiq/

U.S. Food & Drug. *FDA Update on the Safety of Ixchiq (Chikungunya Vaccine, Live)*. Disponible en https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/fda-update-safety-ixchiq-chikungunya-vaccine-live

Richard Bouhet. *More data needed on the FDA's decision to suspend Ixchiq*. Disponible en https://www.thelancet.com/action/showPdf?pii=S1473-3099%2825%2900552-3

European Medicines Agency. *Ficha técnica o resumen de las características del producto VIMKUNYA*. Disponible en https://www.ema.europa.eu/es/documents/product-information/vimkunya-epar-product-information_es.pdf

European Medicines Agency. *Vimkunya Chikungunya vaccine (recombinant, adsorbed)*. Disponible en https://www.ema.europa.eu/en/medicines/human/EPAR/vimkunya

Jason S Richardson, Deborah M Anderson, Jason Mendy, Lauren C Tindale, Sufia Muhammad, Tobi Loreth, et al. *Chikungunya virus virus-like particle vaccine safety and immunogenicity in adolescents and adults in the USA: a phase 3, randomised, double-blind, placebo-controlled trial*. Disponible en https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)00345-9/abstract

Lauren C Tindale, Jason S Richardson, Deborah M Anderson, Jason Mendy, Sufia Muhammad, Tobi Loreth, et al. *Chikungunya virus virus-like particle vaccine safety and immunogenicity in adults older than 65 years: a phase 3, randomised, double-blind, placebo-controlled trial*. Disponible en https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)00372-1/abstract

Our World in Data. How Wolbachia bacteria could help us tackle some of the world's most neglected tropical diseases. Disponible en https://ourworldindata.org/wolbachia-neglected-tropical-diseases

Alimuddin Zumlaa, Francine Ntoumic, Guiseppe Ippolito. Chikungunya virus disease returns to Europe: a turning point for the global arboviral landscape. Disponible en https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01458-8/abstract

Noticias en la Web

Discover more about the project and the 100 Days Mission

Dec 22. Accelerating biotechnology to transform Europe's emergency response capability, this is the ambition driving SPEEDCELL, a four-year project co-funded by the European Union and led by HIPRA. By developing faster, more efficient cell-line–based production technologies, SPEEDCELL is helping pave the way for a future in which essential vaccines and biological products can be made available in record time.

At the heart of this effort is a clear goal: enabling Europe to deliver critical medical measures within 100 days of detecting a new health threat. This vision, known as the EU's 100-Day Mission, emerged after the COVID-19 pandemic and aims to ensure a stronger, more agile and better-prepared Europe.

Laura Ferrer Soler, R&D Director of HIPRA Human Health Division, emphasizes how SPEEDCELL is designed to meet this challenge. She explains that the project accelerates key development steps and strengthens HIPRA's production capabilities, showcasing the organisation's scientific and technological robustness.

By being fully executed by HIPRA group companies, SPEEDCELL leverages integrated expertise to build a faster, more resilient development and manufacturing platform for biotechnological products. Through innovation, process optimisation and advanced cell-line technologies, SPEEDCELL is expanding Europe's capacity to react swiftly when new health emergencies arise.

The project not only improves the speed at which biological solutions can be produced but also reinforces Europe's strategic autonomy and preparedness for the future.

Fuente: Speedcell. Disponible en https://n9.cl/lhz2t

GC Biopharma Secures IND Approval for Phase 1 Clinical Trial of COVID-19 mRNA Vaccine in Korea

Dec 22. GC Biopharma (006280.KS), a leading global biopharmaceutical company, announced today that Ministry of Food and Drug Safety (MFDS) in South Korea has approved the Investigational New Drug (IND) application for the Phase 1 clinical trial of "GC4006A", mRNA (messenger RNA) vaccine candidate for COVID-19.

Following the IND submission in September, the approval was granted in a short timeframe. The company expects to accelerate development in alignment with the Korean government's policy initiative to localize mRNA vaccine. GC Biopharma plans to submit Phase 2 IND in the second half of 2026.

GC4006A is a COVID-19 vaccine candidate developed using GC Biopharma's proprietary mRNA-LNP (Lipid Nanoparticle) platform.

mRNA vaccines are regarded as a critical technology that extends beyond a single infectious disease, as they enable rapid responses to emerging pathogens and viral variants in future pandemics.

Meanwhile, GC Biopharma was recently selected as a recipient of Phase 1 clinical research support under the Korea Disease Control and Prevention Agency (KDCA)'s 'mRNA Vaccine Development Support Project for Pandemic Preparedness'.

"This IND approval represents a meaningful milestone, demonstrating the robustness and competitiveness of our mRNA platform", said Jaewoo Lee, Head of the Regulatory Science & Product Development Division at GC Biopharma. "We will continue to explore the applicability of the platform technology across various therapeutic areas, including vaccines."

GC Biopharma's mRNA-LNP platform enhances both the level and durability of protein expression by applying its proprietary UTR1) patents, codon2) optimization technology, and LNP with advanced delivery efficiency. GC Biopharma is the first company in Korea to independently execute the entire process of mRNA vaccines from candidate discovery to manufacturing and production.

1) Untranslated Region, Regions positioned before and after the codon that play a role in controlling mRNA stability and protein expresión.

2) The portion of mRNA to produce proteins.

About GC Biopharma

GC Biopharma (formerly known as Green Cross Corporation) is a biopharmaceutical company headquartered in Yong-in, South Korea. The company has over half a century of experience in the development and manufacturing of plasma derivatives and vaccines, and is expanding its global presence with successful US market entry of Alyglo® (intravenous immunoglobulin G) in 2024. In line with its mission to meet the demands of future healthcare, GC Biopharma continues to drive innovation by leveraging its core R&D capabilities in engineering of proteins, mRNAs, and lipid nanoparticle (LNP) drug delivery platform to develop therapeutics for the field of rare disease as well as I&I (Immunology & Inflammation).

To learn more about the company, visit https://www.gcbiopharma.com/eng/

Fuente: abc27 News. Disponible en https://n9.cl/1i9fm5

Vaccinating Boys Against HPV Could Eliminate Cervical Cancer

Dec 23. Not enough young men are getting vaccinated against the human papillomavirus (HPV), and in some nations, it may be undermining the elimination of cervical cancer.

If more boys receive the Gardasil vaccine, researchers at the University of Maryland in the US think it could save numerous lives from HPV-associated cancers, including cervical, anal, penile, and oral cancers.

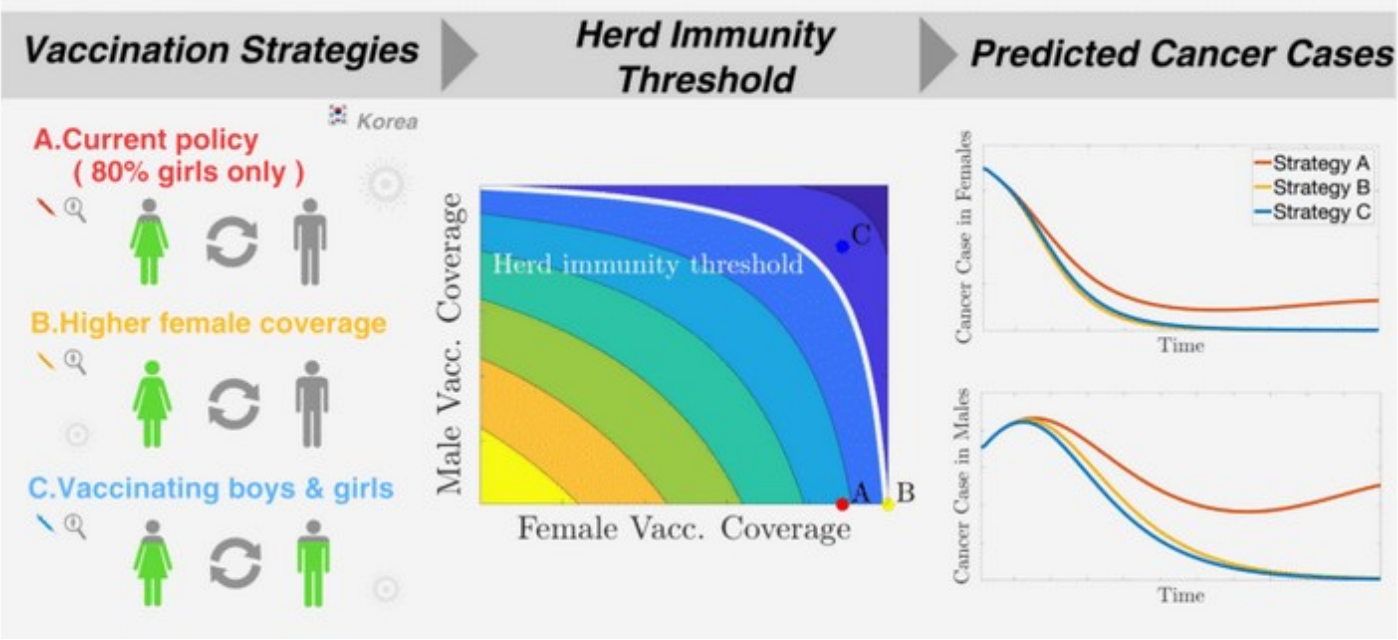
The team's new mathematical model shows that in a nation such as South Korea, where only girls are vaccinated against HPV, current coverage is insufficient to achieve herd immunity against cancer-driving strains.

Vaccinating 65 percent of boys in the nation could change that.

"Vaccinating boys reduces the pressure of having to vaccinate a large proportion of females," says

mathematician and senior author Abba Gumel. "It makes elimination more realistically achievable."

Gumel and his team's simulations suggest that if South Korea's HPV vaccination program were expanded to include boys, the nation could eliminate HPV-related cancers in about 70 years.



The researchers modeled different HPV vaccination and cervical cancer screening strategies in South Korea. (Society for Mathematical Biology)

The new model was calibrated using cancer data from South Korea, but it could also be used to assess the effectiveness of other national vaccination programs.

Gumel predicts that in a nation such as the US, approximately 70 percent coverage among men and women would be sufficient to achieve herd immunity.

HPV is an exceptionally contagious virus that can be sexually transmitted or transmitted through skin or fluid. It is behind virtually every case of cervical cancer, which kills more than 300,000 people globally each year.

The first HPV vaccine was licensed in 2006, and it was initially rolled out to protect people from dangerous strains of HPV that can lead to cervical cancer.

At first, pharmaceutical companies marketed the vaccination as a preventative medicine specifically for women, and sure enough, the vaccine has proved incredibly effective at preventing cervical cancer. In the past two decades, cervical cancer cases have dropped by almost 90 percent in some regions.

But there are still more lives to save, men included. The persistent 'gender bias' in HPV vaccination policies and public health messaging needs to be addressed for further gains, some researchers argue.

Today, scientists know that both men and women are at risk from HPV-linked cancers, including anal, penile, vaginal, and head and neck cancers. Yet in many nations around the world, far fewer young men are getting their jabs – a massive sex discrepancy that public health advisors want to fix.

In South Korea, for instance, the new model found that the nation is unlikely to eliminate cervical cancer unless more boys get the vaccine.

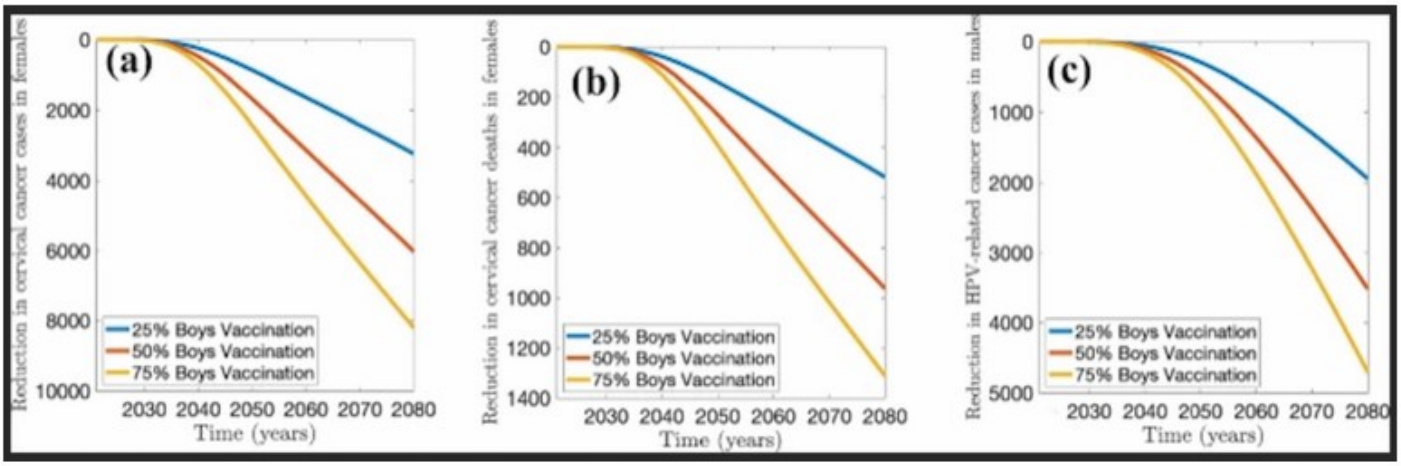
According to simulations, 99 percent of all young women would need to be immunized under the nation's current vaccination program to achieve herd immunity.

Right now, the percentage of young women vaccinated is at 88 percent, which means HPV and related cancers can still persist in the population.

All that could change, however, if boys got vaccinated, too. If 65 percent of males in the nation were vaccinated, and current female rates hold steady, the new models show that South Korea could reach herd immunity.

If vaccination coverage among females were to drop slightly to 80 percent, the elimination of cervical cancer could still be achieved in South Korea if 80 percent of males were also immunized.

In the past 20 years, South Korea's cases of HPV-related male cancer have tripled. If more boys get vaccinated, it could prevent future deaths from these cancers as well.



Modeling showed that vaccinating more boys in South Korea could reduce the cumulative (a) cervical cancer cases in females, (b) cervical cancer-induced deaths in females, and (c) HPV-related cancer cases in males, by 2080. (Park et al., Bull. Math.Biol., 2025)

In light of these results, the authors of the study argue that young boys aged 12 to 17 should be vaccinated alongside young girls and older women who may have missed the vaccine when they were younger.

Recent evidence suggests that vaccinating older individuals can still provide some protection against this highly transmissible virus.

By some estimates, if the world can achieve widespread HPV vaccination coverage and expand cervical screenings, scientists predict we could eliminate cervical cancer in 149 out of all 181 countries by the turn of the century.

Increasing vaccination rates among boys may be key to achieving those goals.

"We do not have to be losing 350,000 people globally to cervical cancer each year," Gumel says.

"We can see an end to HPV and HPV-related cancers if we improve the vaccination coverage."

The study was published in the *Bulletin of Mathematical Biology*.

Fuente: SCIENCEALERT. Disponible en https://n9.cl/7x0gdq

Why Is a 100-Year-Old Vaccine Still Our Only Defense Against the World's Deadliest Infectious Disease?

Dec 23. Tuberculosis (TB), the world's oldest infectious disease, is also one of its deadliest. In 2024 alone, TB killed about 1.23 million people — more than the combined tolls from malaria and HIV/AIDS combined.

But unlike the urgent flashes of panic that accompany other global health crises, such as COVID-19 and Ebola, TB rarely dominates headlines anymore, nor does it trigger emergency responses from policymakers. Instead, the disease kills steadily as a constant hum in the background of global health, killing more than a billion people since record keeping began in 1882.

That invisibility reflects the disease's frustrating story. Today, TB is both preventable and curable, relegated to a memory of a bygone era in most wealthy nations. Yet it overwhelmingly continues to impact low- and middle-income countries. Millions of new cases emerge worldwide each year, but the world hasn't met a new, approved vaccine since 1921 — and we need one. The only existing one, Bacille Calmette-Guérin (BCG), remains a powerful line of defense for infants and young children, but it offers little protection for adolescents and adults.

The result is a staggering paradox: the world's oldest infectious disease, against which humanity is armed with effective treatments and basic preventive tools, also remains its deadliest.

Let's break down exactly how progress has been so slow, but also why, for the first time in years, scientists are cautiously optimistic that this century-long stalemate may finally be breaking.

Alkhalifi, 7, reads information after receiving tuberculosis (TB) treatment at the Sememi Public Health Center in Indonesia in July 2023. In 2023, UNICEF Indonesia trained health workers on pediatric TB management and screening. © UNICEF/UNI437409/Dwi Prasetya

What is Tuberculosis?

Tuberculosis is caused by Mycobacterium tuberculosis, a bacterium that spreads through the air. It can be transmitted when an infected person coughs, sneezes, or even breathes. It's astoundingly common. Nearly one in four people globally (or around two billion people) carry dormant TB bacteria in their bodies.

That statistic can sound apocalyptic, but most people who carry M. tuberculosis never actually get sick. In many cases, the immune system walls the bacteria off successfully. But for roughly 5–10% of people, the infection eventually turns active, allowing it to damage the lungs or spread to the brain, bones, and other organs with devastating consequences. Every year, that means about 10 million people develop active TB.

It wasn't until the mid-20th century that antibiotics transformed TB from a near-certain death sentence into a curable illness. In wealthy countries with robust health systems, new diagnostics and drug regimens, combined with improvements in housing, nutrition, and working conditions, pushed TB out of everyday life.

In much of the world however, the disease never went away. More than 95% of those cases occur in low- and middle-income countries, where the conditions TB thrives in are the most common — these conditions include crowded and poorly ventilated housing, prevalence of malnutrition and chronic illness, and health systems stretched to their limits.

A Vaccine Enters the Scene, But No Cure-All

The BCG vaccine was a genuine scientific triumph when it was introduced in 1921. Developed from a weakened strain of bovine tuberculosis, it dramatically reduced deaths from severe childhood TB. Today, roughly 100 million newborns receive the BCG vaccine each year, saving countless young lives.

But BCG alone could never eliminate TB. For one, its protection wanes with age, offering little to no reliable defense for adolescents and adults — the very populations most likely to spread the disease (babies don't get out as much, as it turns out). Its effectiveness also varies widely by geography, working better in some regions and not as well near the equator for reasons scientists still don't fully understand.

As a result, global TB control has relied heavily on treatment rather than prevention. Standard antibiotic regimens, commonly known as the RIPE protocol, can cure most cases of TB relatively cheaply when taken correctly over six months or more. These drugs have saved millions of lives. But they are lengthy, demanding, and can't take on increasingly common strains of drug-resistant TB alone.

In other words, most of the world has spent the last century fighting the equivalent of an ongoing pandemic with tools from a different era.

What Makes TB It So Hard to Vaccinate Against?

Developing any vaccine is difficult. But developing one for tuberculosis has proven especially challenging.

First, scientists still don't fully understand what kind of immune response actually protects humans from TB — a major challenge when designing vaccine trials. Unlike diseases such as measles or

smallpox, those recovering from TB are still susceptible to reinfection. That means even after successful treatment, patients can still catch it again.

Second, the bacterium itself is unusually resilient. Unlike fast-spreading bacteria like E. coli, M. tuberculosis grows creepingly slowly. Inside the body, it shields itself in a thick, fatty cell wall, hiding asymptomatically for years or even decades as it waits for a weak link in the body's immune system. Whether because of malnutrition, HIV, diabetes, or other reasons, the balance can eventually tip and dormant TB erupts into active disease — but all that time undetected gives TB an edge in eluding typical treatments, eventually giving rise to drug resistant strains.

These biological complexities help explain why TB vaccine development is riddled with challenges. But they don't explain why so many people die when treatment options exist.

One Disease, Two Realities

To understand why TB is largely forgotten in high-income countries while a deadly threat elsewhere, we have to look beyond biology and at global health systems.

The contrast is stark. In the US and Europe, governments once deployed mobile X-ray units to detect TB early, invested heavily in prevention, and rapidly expanded access to treatment. In many poorer countries, care has been rationed, diagnostics have fallen behind, and entire categories of patients — particularly those with drug-resistant TB — have at times been deemed too expensive to treat.

As TB declined in wealthy nations, so did the urgency to eliminate it totally. The disease largely impacts communities with the fewest resources and the least influence over global research agendas and funding decisions. As a result, investment in TB research and development has lagged far behind the scale of the crisis.

A Long Overdue Turning Point?

Today, TB vaccine development remains underfunded. Experts estimate about $800 million per year is needed to move promising candidates through clinical trials and into real-world use.

But there's a big reason to hope for that to change. For the first time in generations, the TB vaccine pipeline is no longer empty. More than a dozen vaccine candidates are currently in development, using approaches ranging from protein subunits to mRNA.

The furthest along of these is M72/AS01E, a vaccine candidate developed by biopharma company GSK in partnership with the Gates Medical Research Institute. In an encouraging 2019 study, M72 demonstrated roughly 50% efficacy in preventing active TB among infected adults — an unprecedented breakthrough.

If successful, M72 could become the first new TB vaccine in over a century, and the first designed specifically to protect adolescents and adults. Its impact could be transformative, potentially preventing tens of millions of cases and millions of deaths over the coming decades. However, recent cuts to global health budgets threaten to slow progress just as this long-awaited achievement appears within reach.

What It Will Take to Change TB's Story

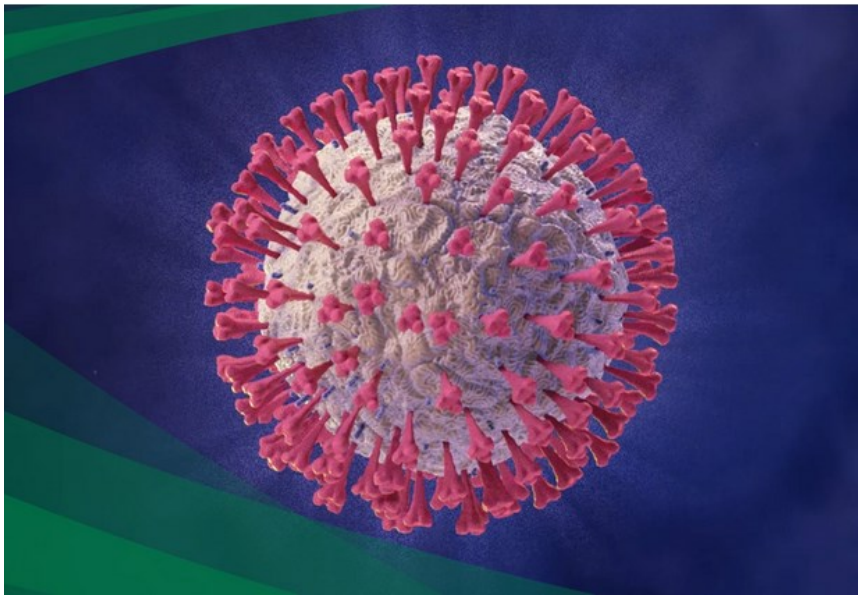
It's estimated that even a moderately effective TB vaccine could save millions of lives and generate enormous economic benefits by reducing treatment costs and protecting livelihoods. More importantly, it could help close one of the most striking gaps in global health care based on income.

It's important to remember that TB hasn't survived because it's unbeatable, but because it's tolerated — and largely unseen by those with the fortune to call it history. A world where no one dies of TB is beyond possible. We already know how to cure the disease, how to prevent its spread, and hopefully someday soon, we'll have vaccines that stop it before it starts for everyone.

The century-long delay in developing a new TB vaccine reflects global priorities, not scientific limits. The breakthroughs now on the horizon offer a rare opportunity to correct that agenda. Whether the world chooses to seize it will make the difference for millions.

Fuente: GLOBAL CITIZEN. Disponible en https://n9.cl/gy3i9

ARTES METAVAX - Vaccine Technology



Dec 24. The vaccine development platform of ARTES is based on enveloped Virus-Like Particles (eVLPs) derived from the recombinant duck hepatitis B virus surface antigen (dS) or capsid-like Virus-Like Particles (cVLPs) derived from the core hepatitis B antigen.

These VLP technologies in combination with our efficient and proven microbial expression platforms provide the optimal solution for the development of cost-effective, safe and effective recombinant subunit vaccine. Our goal is to fullfill 100% of our customers' requirements.

Virus-Like Particle

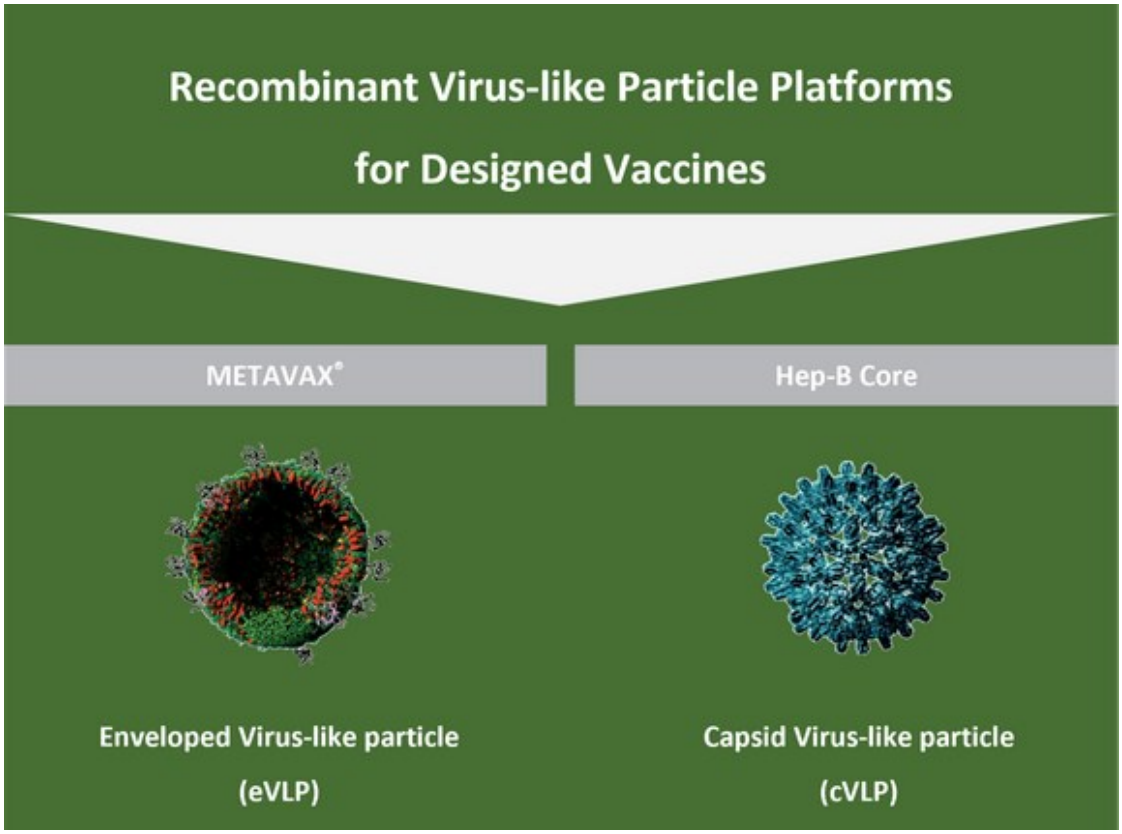
Virus-Like Particles (VLPs) are nanoscale structures that self-assemble and mimic the structure of native viruses without being infectious. Due to their stability, size, and multivalence, VLPs are excellently suited as a basis for vaccines. They provide a safer alternative to attenuated or inactivated vaccines. They are able to induce potent cellular and humoral immune responses and can be produced recombinantly in microbial expression systems without the risk of contamination with infectious viruses. Another possibility is to use them as a packaging tool for nucleic acids and drug substances, as they can transport agents.

VLP Vaccine Development Platform

Our vaccine platform technologies enable efficient expression, folding and presentation of the target antigen on the surface of chimeric VLPs. These nanostructures improve recognition and uptake by antigen-presenting cells, leading to a strong immune response against the respective target antigen in the target organism.

The ARTES technology platform has proven itself in various development projects for our customers.

Preclinical studies have demonstrated the safety, tolerability and high immunogenicity of adjuvant-free vaccine candidates for diseases such as swine flu, malaria, HIV and Lyme disease.



METAVAX® – enveloped Virus-Like Particles

Designed for the development of novel, highly immunogenic nanoparticle subunit vaccines in human and animal health.

Our platform METAVAX®, efficiently expresses, folds, and presents your target antigen on the surface of VLPs. It has been successfully utilized in various vaccine development projects for both human and animal targets.

Features of METAVAX®:

- well suited for human and veterinary vaccines.
- presentation of large target antigens and conformational epitopes.
- versatile expression of targets as e.g. N- or C-terminal fusion proteins.
- rapid feasibility studies by generic processes and analytics.

Hep-B Core – capsid Virus-Like Particles

Development of vaccine candidates based on proprietary antigen presentation by Virus-Like Particles. We offer two different presentation forms for the development of capsid Virus-Like Particles (cVLPS): the traditional single chain HB Core and a novel Hep-B Core scaffold (SplitCore). This ensures optimal integration and presentation of structurally different antigens.

Features of Hep-B Core:

- self-assembling into protein-only capsid VLPs (no host lipids).
- with or without nucleic acid binding domain for modulation of the immunogenicity (adjuvant effect of nucleic acid).
- for presentation of epitopes and antigens up to 50 kDa.

- supports drug delivery applications (encapsulation of actives).
- produced in yeast or in E. coli at high productivity rates.
- platform for presentation of large proteins, structurally complex and dimeric proteins.

Fuente: ARTES Biotechnology. Disponible en https://n9.cl/4ufzs

Dynavax Technologies acquired by Sanofi

Dec 24. Sanofi has acquired Dynavax Technologies for $2,200,000,000, a move designed to expand its footprint in the infectious disease vaccine market.

This corporate acquisition signals a strategic investment by Sanofi into a commercial-stage biopharmaceutical company known for its innovative vaccine development.

Dynavax Technologies specializes in developing and commercializing vaccines aimed at protecting against infectious diseases.

The company's key commercial products include HEPLISAV-B® vaccine, an adjuvanted hepatitis B vaccine approved for adults in the U.S., the European Union, and the United Kingdom.

Additionally, Dynavax developed the CpG 1018® adjuvant, a component utilized in HEPLISAV-B and various adjuvanted COVID-19 vaccines.

The acquisition also brings a Phase 1/2 shingles candidate into Sanofi's development pipeline.

The acquisition is strategic for Sanofi as it strengthens its vaccine portfolio with established, commercialized products and proprietary adjuvant technology.

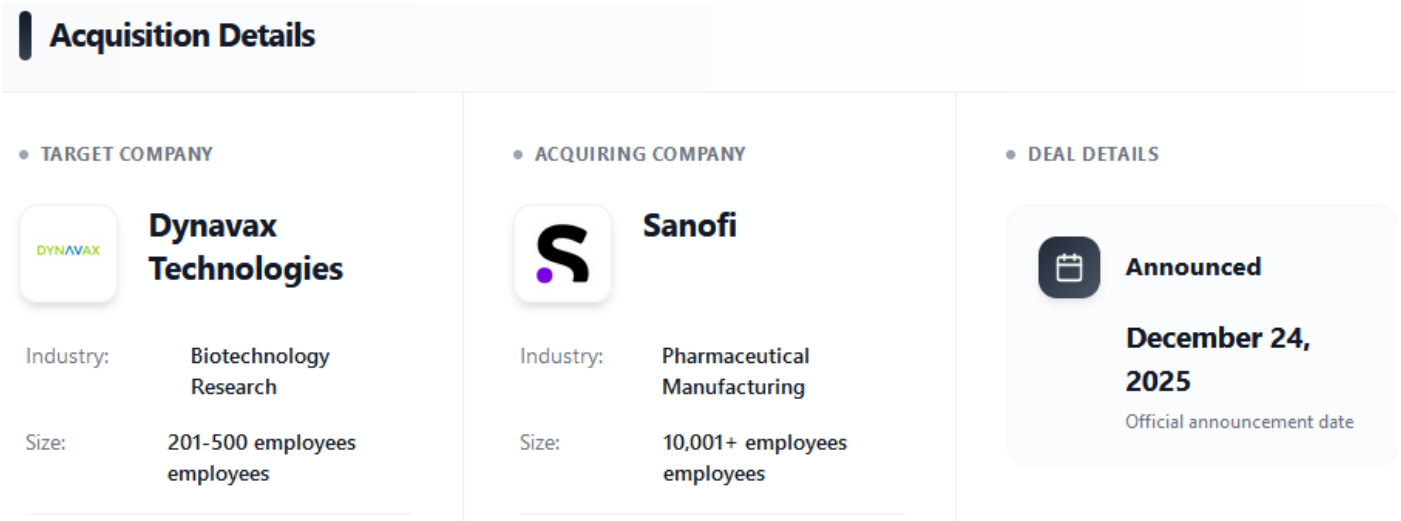
Dynavax's expertise in innovative vaccine solutions and its existing market presence with HEPLISAV-B provide immediate value and complement Sanofi's global capabilities in pharmaceuticals and vaccines.

This move is expected to enhance Sanofi's offerings in preventative medicine.

Expected synergies from this acquisition include leveraging Sanofi's extensive research, development, and global distribution network to further scale and commercialize Dynavax's vaccine assets.

The integration aims to accelerate the development of future vaccine candidates and expand access to critical preventative treatments worldwide.

The combined entity is poised to strengthen its commitment to addressing global public health challenges through a more robust and diversified vaccine pipeline.



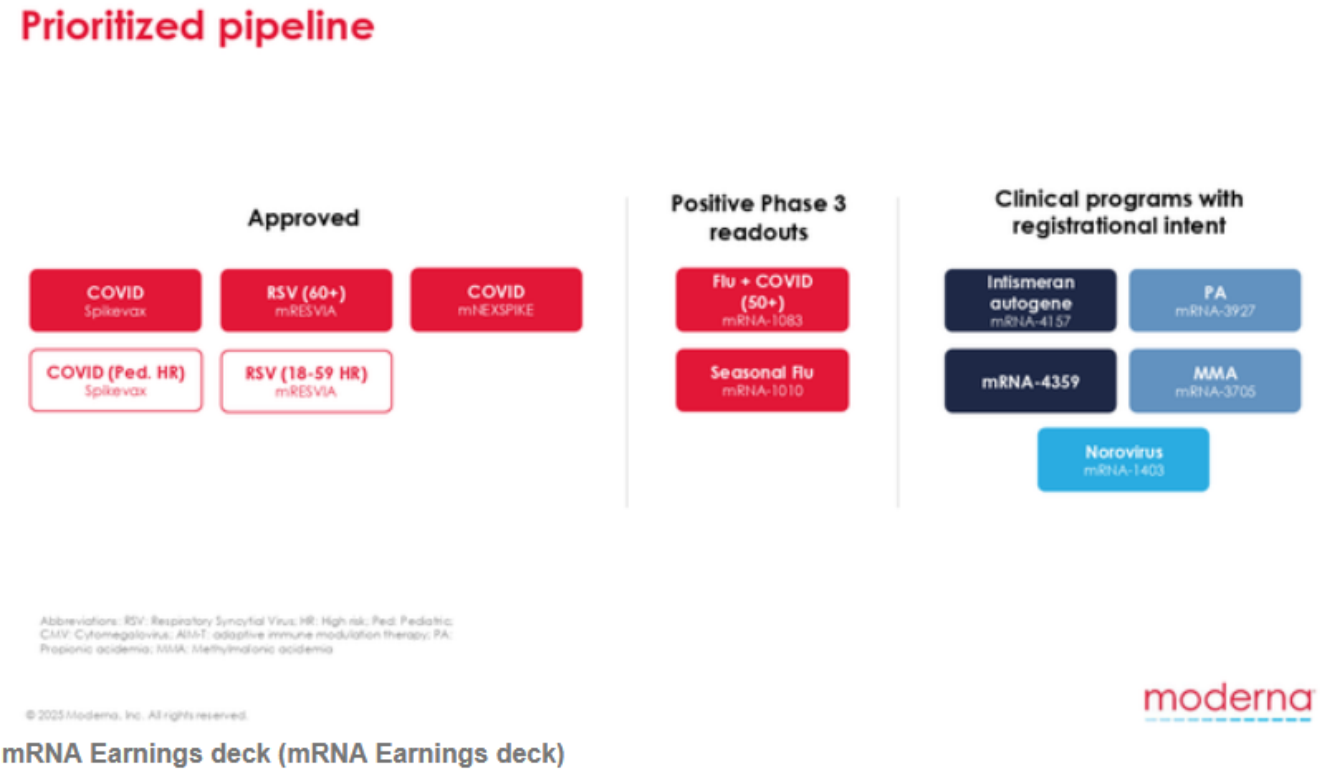
Fuente: Leads On Trees. Disponible en https://n9.cl/pc6md

Moderna: On Transition From Pandemic Windfall To Multi-Product Platform, Initiating At Neutral

Dec 25. I initiate Moderna (MRNA) with a hold rating with a target price of $25, which is under the current trading stock price. I believe Moderna remains one of the most advanced global mRNA platforms, with three approved commercial vaccines, a broad pipeline, and meaningful cash reserves. I view the current risk-reward as balanced but not compelling enough to initiate a position.

Near-term commercial execution in the respiratory vaccine is improving. Cost discipline seems to be ahead of the plan according to the recent earnings; however, I see structural uncertainties across COVID demand durability, pricing dynamics, and regulatory timelines (namely, Robert Francis Kennedy and Trump risk) for upcoming launches, and the inherently long gestation nature of the oncology and rare disease pipeline development and commercial success.

Moderna's Key Asset Overview



mRNA Earnings deck (mRNA Earnings deck)

Of note, the three approved commercial products are Spikevax (the original COVID vaccine), mNEXSPIKE (an updated COVID vaccine), and mRESVIA (an RSV Vaccine). The company is guiding that there are 30+ developmental candidates across respiratory, latent viruses, oncology, and rare metabolic diseases, with 37 active clinical studies.

1. The COVID franchise (Spikevax and mNEXSPIKE) remains Moderna's largest contributor (95%+) and accounts for $971M in Q3 2025 product sales. Although the 2025 US vaccination season is tracking within expectations (~26 million doses), the company is projecting a 20-40% decline in cumulative retail vaccinations in 2025. This decline is likely driven by weaker public enthusiasm, payer pressure, and non -annual boosters amongst younger patients. COVID-19 vaccines are no longer a "must-have" vaccine, and demand is increasingly a winner-take-all in the >65 age segment, with minimal uptake in patients under 50. I think the key issue is that COVID demand remains structurally unpredictable, influenced by variant evolution, payor policies, and public willingness to vaccinate annually. I do not see a clear return

to pandemic-level volumes with long-term steady-state demand below the current consensus.

2. RSV Vaccine (mRESVIA): mRESVIA is approved in 40 countries for adults 60 and above, and in 31 countries for high-risk adults 18-59. The launch began in Q3 2024, with $4M 9M2025 sales (a very early launch print, and I believe investors shouldn't read too much from this). There are competitors like Pfizer (Abrysvo), GSK (Arexvy), and Moderna, which entered as a third large player. I see RSV as a multi-billion dollar market, but payor management, seasonal dynamics, and unclear product differentiation (limited comparative real-world effectiveness data - but some advantage around reactogenicity, strong safety data from Moderna's COVID safety history, and convenient one-shot immunization) remain key questions. As such, I see mRESVIA contributing meaningfully to mRNA's valuation (potentially surpassing COVID sales by 2027-2028 with COVID franchise sales further abating), but not at a scale achieved by the early incumbents.
3. Upcoming respiratory (Flu) launches (key 2026 catalysts): Flu (mRNA-1010) is filing across the US, EU, Canada, and Australia. The ph3 immunogenicity sub-analyses have been presented at ESWI (data showing non-inferiority and some incremental relative efficacy improvement in the high risk subgroups, albeit the superiority over standard quadrivalent vaccine remains unproven), potentially ushering Moderna into the $10B+ global flu vaccine market dominated by egg-based vaccines. For commercial success, I believe incremental improvements in vaccine efficacy vs. the standard of care are needed to gain needle-moving market share. Flu + COVID combination (mRNA 1083) may potentially get approved in the EU and Canada in 2026. EMA review is currently ongoing, US refiling is pending FDA guidance. I think the commercial rationale here is strong, as it offers two-to-one convenience, but regulatory complexity is greater, and US regulators have asked for additional clarity. I believe the current political climate is not ideal, given the current administration and Robert Francis Kennedy's anti-vaccine stance. Net-net, I assign a moderate probability to 2026 approval in ex-US, with a combination vaccine providing a substantial medium-term value driver for the stock but also carrying material regulatory risk.

Pipeline Overview: Some Interesting Assets on the Horizon, but Without Risk

Although I think Moderna's pipeline is broad and well diversified, it's not without meaningful execution risk. For example, Moderna's CMV franchise failed to meet the primary endpoint in phase 3, and Moderna discontinued the congenital indication, which represented a major setback considering the CMV franchise was one of Moderna's highest peak sales opportunities.

Key Pipeline Assets Deep Dive

Norovirus (mRNA-1403) vaccine program: the phase 3's insufficient case accrual has delayed the readout. As such, additional enrollment for the 2025 and 2026 seasons would be needed. One risk I see is that case-driven studies historically carry a greater degree of timing uncertainty.

Rare disease portfolio: MMA (mRNA-3705) is fully enrolled, with positive cumulative data published at ICIEM, and propionic acidemia (mRNA-3927) registrational trials are currently ongoing. Of note, the company previously explored other metabolic indications (i.e., PKU, GSD1a in preclinical stages years earlier), however, the current clinical franchise centers around MMA and PA, both are life-threatening organic acidemias driven by single-enzyme deficiencies. The two programs utilize lipid nanoparticle (LNP) formulation and are delivered intravenously through repeat dosing, mRNA-encoded replacement enzyme therapy.

This is Moderna's first non-vaccine therapeutic to reach registration studies. This interests me personally, as

mRNA therapeutics for metabolic disease can offer high biological plausibility. Still, I believe the key pushback from investors would be questions about durability and long-term safety, which remain unproven for chronic, multi-dose therapy.

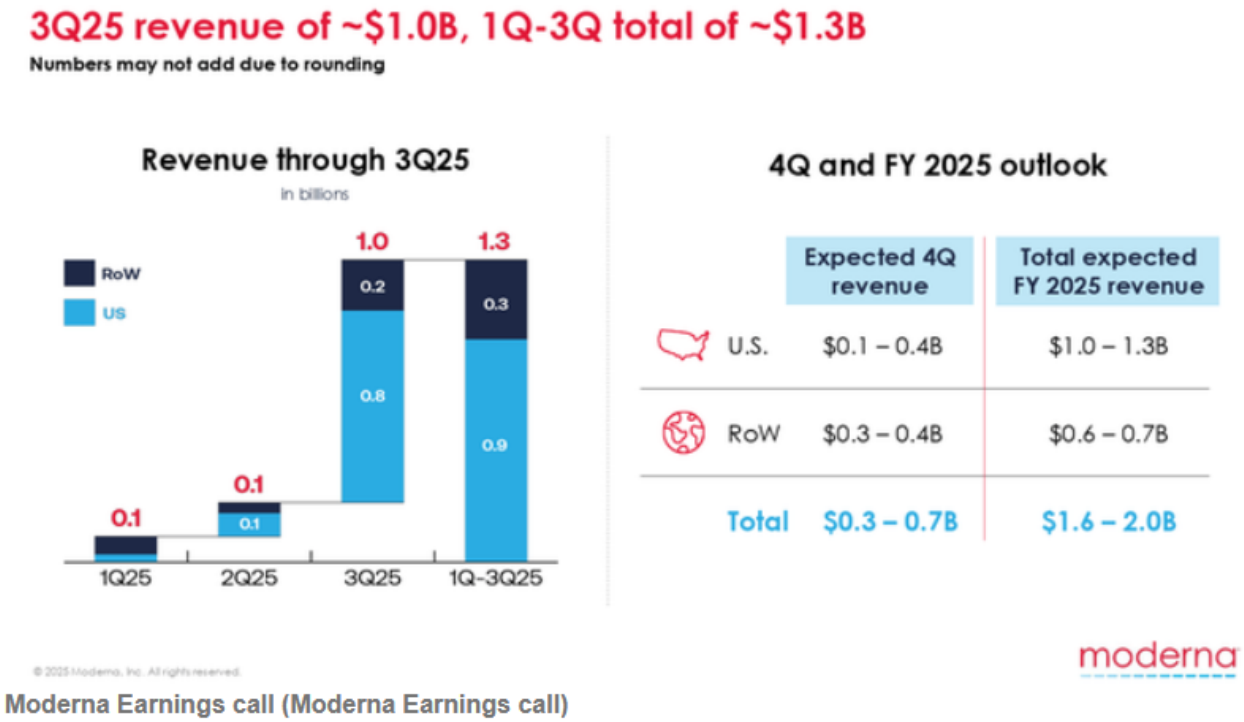
Oncology programs: Here, I believe oncology assets are the most significant long-term value driver for Moderna. The oncology franchise has clear blockbuster potential. However, I believe the regulatory pathway for personalized mRNA therapies is complex, and furthermore, the scalability of manufacturing for individualized neoantigen therapy remains unproven at commercial volumes at the moment. Furthermore, I see event-driven trials may create significant uncertainty around timelines. Net-net, I see the oncology pipeline as a long-dated call option for speculative investors.

Intismeran (mRNA-4157) is a personalized cancer vaccine that Moderna has partnered with Merck on previously. The asset is fully enrolled for a phase 3 adjuvant melanoma study. The two phase 3 NSCLC adjuvant studies are enrolling (with/without neoadjuvant treatment), and additional programs in RCC, bladder cancer, and first-line metastatic settings are currently ongoing. I believe the proof-of-concept from the 2023 KEYNOTE-942 update demonstrated promising RFS and OS trends. The current phase 3 trials are event-driven, and I expect that readouts are likely in 2026-2027.

mRNA-4359: are T-cell engagers. The phase 1b data publication (from ESMO 2025) showed an early sign of activity with acceptable safety. The two phase-2 cohorts (i.e., melanoma and metastatic NSCLC) are currently enrolling.

Financials: Highly COVID-driven

From a high-level revenue perspective, Q3 2025 revenue was $1Bn, which is down 45% YoY, and 9M 2025 revenue was $1.26B, down from $2.270B in 9M 2024. Importantly, 95%+ of the sales are driven by the COVID-19 franchise, which shows how concentrated Moderna's portfolio is. I believe the decline reflects the post-pandemic normalization of COVID demand and the delayed launch of new products. The company has guided $1.6Bn-2Bn, which I believe is consistent with improving seasonality (but leaving notable Q4 dependence).



Fuente: Seeking Alpha. Disponible en https://n9.cl/15b7a

En 2026 los niños recibirán dos vacunas costosas de forma totalmente gratuita

26 dic. En la ceremonia de clausura del concurso para comprender el programa ampliado de inmunización de Vietnam, celebrada el 26 de diciembre en Hanói, el Sr. Duong Chi Nam, subdirector del Departamento de Prevención de Enfermedades del Ministerio de Salud , declaró que estas vacunas se implementarán inicialmente a pequeña escala, en zonas específicas y entre grupos prioritarios. Tras evaluar su eficacia, el Ministerio de Salud informará al Gobierno para que considere su expansión a nivel nacional.

"Según el plan, en 2026 se incluirán dos vacunas, la antineumocócica y contra el VPH, en el programa ampliado de inmunización infantil. Se trata de dos vacunas costosas, cuyo costo oscila entre 1 y 2 millones de dongs por dosis."

A partir de 2026, un programa piloto proporcionará vacunas gratuitas contra el VPH y el neumococo a los niños.

Para 2030, se prevé que el Programa Ampliado de Inmunización incorpore tres nuevas vacunas. En concreto, en 2026 se implementará un programa piloto para la vacuna antineumocócica y la vacuna contra el VPH. Para 2030, se incorporará una vacuna contra la influenza.

Según el plan, la vacuna neumocócica se lanzará a partir del primer trimestre de 2026, mientras que se espera que la vacuna contra el cáncer de cuello uterino comience en el tercer o cuarto trimestre de 2026, ya que se trata de una vacuna importada y requiere más tiempo para completar los procedimientos de licitación, importación y prueba.

En consecuencia, entre 2026 y 2028, institutos especializados han seleccionado cuatro provincias (Tuyen Quang, Quang Ngai, Dak Lak y Vinh Long) para poner a prueba el programa de vacunación gratuita contra el VPH para niñas de 11 años.

Actualmente, el Ministerio de Salud ha asignado al Instituto Central de Higiene y Epidemiología la tarea de revisar, evaluar y proponer áreas específicas y grupos objetivo para su implementación. Se han importado varios lotes de vacunas y se encuentran en proceso de control de calidad, según la normativa vigente, antes de su uso.

"Nos comprometemos a implementar esto de forma cautelosa, sistemática, segura y eficaz, con base en la ciencia y la práctica", afirmó el Sr. Nam.

Según los precios actuales del mercado, las vacunas antineumocócicas cuestan entre 1 y 2 millones de dongs por dosis; las vacunas contra el VPH cuestan entre 1 y 3 millones de dongs por dosis. Incluir estas dos vacunas en el programa gratuito de vacunación permitirá que más niños tengan acceso a estas costosas vacunas, protegiéndolos en la comunidad.

Una cobertura de vacunación insuficiente podría provocar el regreso de enfermedades infecciosas.

Según el subdirector del Departamento de Prevención de Enfermedades, la experiencia práctica de la implementación de programas de vacunación durante las últimas tres décadas muestra que, en el caso de muchas enfermedades infecciosas, como el sarampión, el número de niños no vacunados tiende a acumularse cada año, con un promedio de entre el 5 y el 10%.

Después de unos 3 a 5 años, el riesgo de un brote es muy claro. Por lo tanto, además de las vacunaciones rutinarias, es esencial organizar campañas de vacunación complementarias para fortalecer la inmunidad comunitaria.

Las campañas de vacunación contra el sarampión de los últimos años han demostrado una eficacia muy clara. Con un presupuesto adecuado y mecanismos proactivos, el Ministerio de Salud, junto con otros ministerios, sectores y localidades, puede implementarlas con prontitud, a diferencia del enfoque reactivo anterior, afirmó el Sr. Nam.

En consecuencia, para 2030, todas las vacunas del programa ampliado de inmunización tienen como objetivo lograr una tasa de cobertura del 95% o más en todo el país, en todas las zonas, desde las comunas hasta los barrios.

"Este es un gran desafío, especialmente en zonas de difícil acceso, remotas y con poblaciones fluctuantes. Actualmente, el Ministerio de Salud está coordinando con el Centro Central de Comunicación y Educación en Salud para desarrollar un plan de comunicación para el período 2026-2030 con el fin de sensibilizar y generar consenso entre la población para lograr este objetivo", afirmó el Sr. Nam.

Fuente: VIETNAM.VN. Disponible en https://n9.cl/t9hly

AI, CRISPR, and mRNA Driving Biotech's Smartest Decade Yet

Dec 27. As biotech evolves from early-stage experimentation to industrialized innovation, the sector's momentum has never been greater.

- AI-driven drug discovery, CRISPR, and mRNA technologies are attracting record investment, reshaping the pharmaceutical landscape with significant scientific and financial influence.
- Asia leads in AI-driven drug discovery, with $267 billion raised, surpassing the U.S. and Europe, driven by talent, regulatory support, and long-term funding.
- CRISPR gene editing shows rapid growth with a 33.5% CAGR, driven by strong U.S. investment and numerous IPOs, highlighting its commercial potential.
- mRNA technology, initially spotlighted by COVID-19, is expanding into new therapeutic areas, with the U.S. leading funding efforts, showcasing its scalability and impact.

According to global pharmaceutical investment trends data from FounderNest, an AI-powered market intelligence platform, AI-driven drug discovery, CRISPR gene editing, and mRNA vaccine development are attracting record levels of capital and rapidly scaling their teams. These technologies are collectively driving the next generation of pharmaceutical breakthroughs.

The merging of AI and biotech reached new heights in 2025, and as the year closes, it may well be remembered as the one when biotech's smartest decade really began. Our latest analysis of the sector shows that AI-driven drug discovery, CRISPR gene editing, and mRNA vaccine development are emerging as three of the fastest growing areas of pharma innovation.

Despite lean teams with median employee counts ranging from just 16 to 31, the 1,200 companies we looked at across these areas collectively command more than $666 billion in disclosed funding. This funding highlights a key trend in biotech this year: small, focused teams are achieving outsized scientific and financial influence.

AI-powered drug discovery: Asia surges ahead

We identified more than 530 companies in AI-enabled drug discovery. These firms, averaging seven years old, demonstrate remarkable efficiency and scalability. With a median funding of $18.6 million across three rounds, nearly half have already secured institutional investment. Total funding in the sector now exceeds $420 billion, a figure that signals AI-driven discovery is no longer a speculative venture but a magnet for both venture and strategic capital.

Interestingly, Asia has emerged as the unexpected leader in global innovation. Companies there have collectively raised $267 billion, outpacing $121.7 billion in the U.S. and $28.8 billion in Europe. It seems Asia's biotech sector is becoming a new center for innovation, fueled by deep talent pools, strong regulatory support, and increasing access to long-term funding that enables companies to scale and pursue ambitious drug discovery programs.

Investor confidence remains strong despite broader market volatility, with a five-year compound annual growth rate (CAGR) of 8.5% in total funding. For innovation teams and M&A strategists, this trend underscores a critical takeaway: AI-driven drug discovery is transitioning from experimental pipelines to industrialized, high-throughput discovery engines.

CRISPR: Biotech's fastest-growing segment

CRISPR-based gene editing continues to capture the imagination, and capital, of the life sciences sector. We tracked 359 active CRISPR companies with a median age of eight years. Total disclosed funding has reached $84.5 billion, with more than half of these companies raising at least one institutional round. Median funding per company across three rounds is $30 million, reflecting deep investor confidence in the technology and its commercial potential.

The US remains the dominant force, contributing $73.5 billion across 575 rounds, while Europe and Asia account for $5.3 billion and $4.7 billion, respectively (1). The five-year CAGR of 33.5% underscores the field's rapid growth, a pace fueled by more than 40 initial public offerings and the emergence of scaled players with more than 100 employees.

mRNA vaccines: From pandemic pivot to industrialized production

The mRNA sector, originally spotlighted by COVID-era vaccines, has grown into a fully capitalized, industrialized domain. We looked at 359 active mRNA vaccine companies with a median age of 11 years. These companies have collectively raised $162.4 billion, with median funding per company of $39.4 million across three rounds, reflecting the high capital intensity of scaling from R&D to industrial-scale production.

The US dominates funding, with $102.2 billion across 373 rounds, followed by Europe ($38.4 billion) and Australia ($19.1 billion). With a five-year CAGR of 28.8%, mRNA technology is not just expanding its infectious disease portfolio, it is setting the stage for new vaccines, oncology therapeutics, and other precision biologics, showcasing the technology's scalability and growing impact on biotech innovation.

Structural patterns and the road ahead

Despite differing therapeutic modalities, AI, CRISPR, and mRNA companies share several structural patterns. They operate in lean teams, demonstrate sustained growth trajectories, and attract increasingly globalized funding. Together, they define what is driving modern pharma: AI accelerates discovery, CRISPR enables precision editing, and mRNA platforms scale rapidly for industrialized production.

Looking ahead to 2026, the data show a market in which AI-enabled platforms will increasingly integrate multi-modal datasets, from genomics to real-world evidence, further reducing timelines for drug discovery and target validation (1). At the same time, CRISPR applications are expected to extend beyond rare genetic diseases, encompassing synthetic biology, agriculture, and even cellular therapies for oncology. Meanwhile, mRNA industrialization will continue to advance, with modular, scalable manufacturing platforms enabling rapid pivoting to emerging pathogens and novel therapeutic areas. Together, these trends signal a biotech sector that is not only more agile and scalable but also capable of rapidly translating innovative science into real-world therapies.

In short, we are entering a decade when smart, data-driven biotech companies—small in team size but massive in potential impact—will define the pace and direction of global pharmaceutical innovation. Biotech's smartest decade is here, and AI, CRISPR, and mRNA are leading the way.

Fuente: BioPharm International. Disponible en https://n9.cl/411xc

ONU declara al 2025 como año clave para la salud global

28 dic. La ONU califica al 2025 como año clave para la salud global, marcado por la adopción del primer acuerdo sobre pandemias que refuerza la cooperación internacional y el multilateralismo frente a amenazas sanitarias.

Aprobado en la 78va. Asamblea Mundial de la Salud, el Acuerdo sobre Pandemias, junto con las enmiendas al Reglamento Sanitario Internacional, busca garantizar una respuesta más rápida, equitativa y eficaz ante futuras emergencias sanitarias y promueve un acceso más justo a vacunas, medicamentos y diagnósticos.

También 2025 se consolidó como un periodo de importantes avances y complejos desafíos para la salud global y para la Organización Mundial de la Salud (OMS), según expresó su director general, Tedros Adhanom.

La OMS respondió a 48 emergencias en 79 países y territorios, incluidos contextos de conflicto y crisis prolongadas como Gaza, Sudán y Ucrania. Esas intervenciones contemplaron apoyo a sistemas colapsados de salud, atención de urgencia y coordinación internacional para proteger a las poblaciones más vulnerables, de acuerdo con datos de la agencia sanitaria.

Con apoyo de la OMS, los países ampliaron programas de inmunización contra enfermedades como meningitis, polio, rotavirus y virus del papiloma humano (VPH), y contra este último ya 86 millones de niñas fueron vacunadas.

Fuente: Noticias VENEVISION. Disponible en https://n9.cl/b43f9

UASLP avanza en el desarrollo de prototipos de vacunas contra zika y dengue

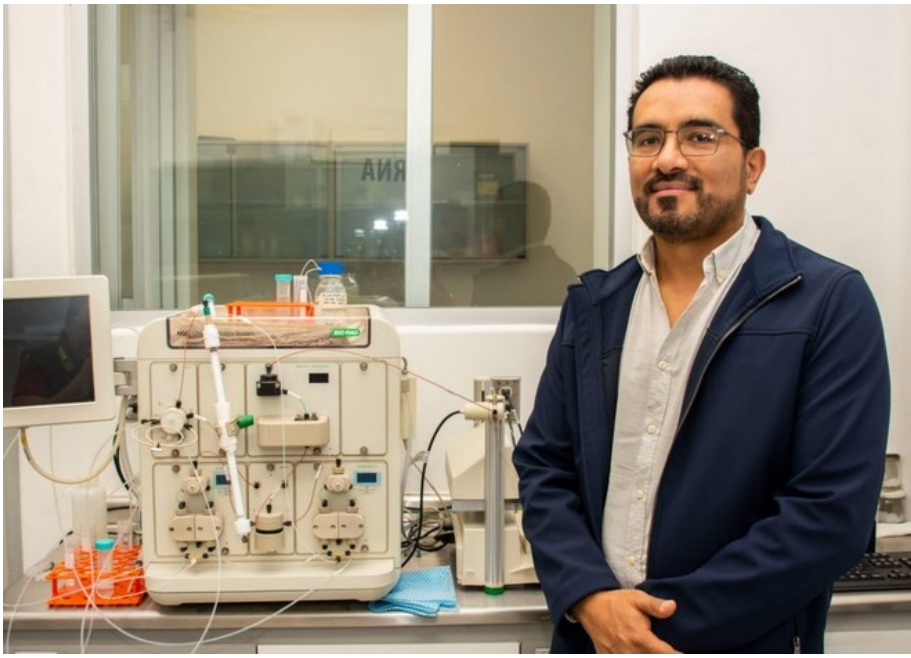
28 dic. En el tema del desarrollo de vacunas en la Universidad Autónoma de San Luis Potosí (UASLP), el doctor Sergio Rosales Mendoza informó que trabajan en prototipos contra zika y dengue, enfermedades transmitidas por un mosquito que, al picar, introduce un virus que desencadena un proceso infeccioso en el organismo.

Las investigaciones se realizan en la Facultad de Ciencias Químicas y en el Centro de Investigación en Ciencias de la Salud y Biomedicina (CICSaB), donde labora el docente universitario. En entrevista, explicó que el dengue puede evolucionar a dengue hemorrágico, condición con impacto clínico serio, que puede llevar a la hospitalización o dejar secuelas.

"El dengue se presenta en miles de casos a nivel nacional y constituye un problema de salud relevante que genera hospitalización, gastos y secuelas en el paciente", comentó.

Respecto al zika, indicó que es una infección de menor prevalencia, pero en mujeres embarazadas ocasiona un desarrollo defectuoso del sistema nervioso central del bebé, con consecuencias severas. Debido a la importancia de ambas enfermedades, investigadores de la UASLP se han enfocado en el desarrollo de vacunas, señaló.

En este proyecto participan especialistas como el doctor Mauricio Comas García, virólogo; el doctor Omar González Ortega, experto en bioprocesos; además de estudiantes de posgrado de la Facultad de Ciencias Químicas.



El doctor Rosales recordó que, después de la pandemia por COVID-19, se logró un primer prototipo de vacuna y, posteriormente, decidieron iniciar el trabajo con zika. En 2022, con la experiencia previa, el prototipo avanzó de manera rápida. Actualmente se encuentran en la etapa final de validación en ratones para avanzar a modelos más avanzados.

El desarrollo preclínico implica formular la vacuna y evaluarla en ratones para determinar seguridad, ausencia de efectos adversos y eficacia, es decir, que el sistema inmune genere una respuesta específica hacia el virus y logre protección.

"Como parte del experimento, simulamos la infección bajo regulación del Comité de Ética. Después monitoreamos en los ratones vacunados signos como pérdida de peso, apetito o incluso mortalidad. También cuantificamos la presencia del virus en el organismo, un parámetro clave para determinar si fue neutralizado o si la infección progresó. En esta fase resulta esencial analizar distintas dosis para confirmar la efectividad", explicó.

El investigador de la Facultad de Ciencias Químicas y del CICSaB comentó que este año cerrará con un avance relevante, ya que los resultados en ratones mostraron un nivel alto de protección. Este hallazgo permitió publicar el estudio en la revista Vaccines, de reconocido prestigio. "Estos resultados respaldan el desarrollo; además, gestionamos que la vacuna sea evaluada por colaboradores en Asia en primates, que representan mejor la respuesta inmune humana", agregó.

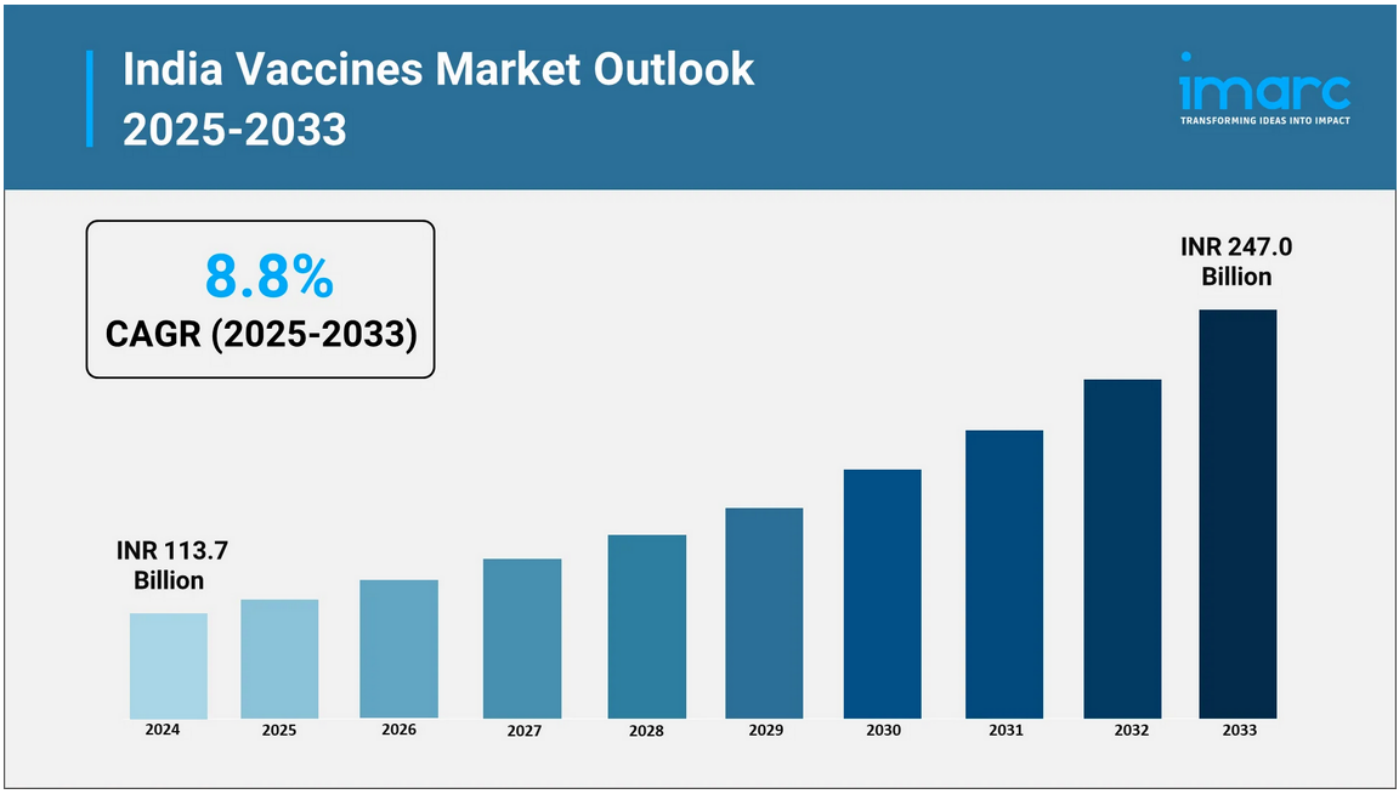
El financiamiento para estos prototipos proviene de la Secretaría de Ciencia, Humanidades, Tecnología e Innovación (Secihti), y del Consejo Potosino de Ciencia y Tecnología (Copocyt), lo que ha permitido adquirir equipamiento y fortalecer la experiencia en este tipo de desarrollos. Para 2026 se contempla la evaluación en primates y concluir la siguiente etapa en colaboración con la industria farmacéutica, añadió.

Fuente: Noticias de la Universidad Autónoma de San Luis Potosí. Disponible en https://n9.cl/z3uhqw

How Government Policies Are Driving the India Vaccines Industry

Dec 29. The Indian vaccines industry holds an unparalleled position globally, often celebrated as the pharmacy of the world due and its massive production scale and capabilities. It reached INR 113.7 Billion in 2024 according to IMARC Group and it is projected to grow at a CAGR of 8.8% from 2025-2033. This status is not a matter of chance, but the result of decades of strategic planning, significant public-sector investment, and most importantly, proactive and comprehensive Government policies. These policies have effectively engineered a virtuous cycle, helping create a vast, reliable domestic market while simultaneously fostering an enabling environment for innovation, quality manufacturing, and global competitiveness.

The Government of India's role extends beyond mere regulation; it acts as the single largest purchaser, a primary funding source for R&D, and a strategic facilitator for international collaboration, ensuring the sector's continuous, robust growth.



Large-Scale Immunization Programs: The Bedrock of Routine Vaccination Demand

The engine room of the Indian vaccines market is the guaranteed, continuous, and vast demand generated by the nation's public health commitments. Government-led immunization programs are the single most powerful driver, ensuring high routine vaccination coverage for both children and, increasingly, adults. This predictable demand volume is the foundation upon which the industry builds its capacity.

The Universal Immunization Programme (UIP)

The Universal Immunization Programme (UIP) is among the largest and most extensive public health campaigns globally. By committing to provide essential vaccines free of cost to millions of pregnant women and newborns every year, the UIP ensures a foundational, large, and non-volatile procurement market for domestic manufacturers. This guaranteed volume allows companies to confidently make long-term capital investments in scaling up production and adhering to international quality standards.

The Government's strategic expansion of the UIP—incorporating newer, often more complex and expensive vaccines like the Pneumococcal Conjugate Vaccine (PCV) and the Rotavirus Vaccine—not only addresses crucial public health needs but also systematically broadens the market opportunity for sophisticated, next-generation vaccine manufacturers within the country.

Strategic Outreach and Demand Generation

To ensure equitable access and coverage, the Government launches focused, time-bound initiatives designed to reach the last mile. Campaigns such as Mission Indradhanush specifically target unvaccinated and partially vaccinated children and pregnant women in hard-to-reach areas. As of December 2024, Mission Indradhanush has achieved remarkable results, vaccinating a cumulative total of 5.46 crore children and 1.32 crore pregnant women across all phases.

By relentlessly chasing high coverage goals, the Government systematically converts potential public health need into realized vaccine uptake. These campaigns also enforce rigorous supply chain management, logistics, and cold chain maintenance, thereby strengthening the entire distribution infrastructure that the industry relies upon for domestic success and, critically for demonstrating capability to international buyers.

The digital health infrastructure, significantly boosted by the successful model of the CoWIN platform, is now being repurposed for routine immunization and broader health management through platforms like U-WIN. By December 2024, over 711 million Ayushman Bharat Health Accounts (ABHA) had been created, enabling seamless integration of digital health records.

This digitalization brings efficiency, accountability, and better inventory management, further stabilizing the demand signal for manufacturers.

Market Size & Growth Opportunity: Catalyzing India’s Global Leadership

Government policies have been instrumental in transforming India from a recipient nation into a global manufacturing hub for vaccines, earning its reputation as a global leader in both volume and affordability.

Policy Support for Global Manufacturing Prowess

India's early commitment to self-reliance and indigenous manufacturing through deliberate policy choices has led to its current strength. Indian manufacturers now supply a substantial majority of the global vaccine needs procured by major international health bodies, including UNICEF, the Pan American Health Organization (PAHO), and Gavi, the Vaccine Alliance. This global penetration is facilitated by the Government's support in achieving pre-qualification by the World Health Organization (WHO), a gold standard that opens international markets.

Financial Incentives and Investment Promotion

Policies like the Production Linked Incentive (PLI) Scheme are specifically designed to catalyze growth in the pharmaceutical and biotech sectors, with a significant positive spillover effect on vaccine manufacturing. By offering financial incentives based on incremental production and sales, particularly for high-value and new-generation biological products, the PLI scheme encourages both domestic and foreign companies to make substantial investments in setting up or expanding high-tech manufacturing facilities within India. This directly promotes scale, reduces manufacturing costs, and enhances the nation's competitive edge globally.

Furthermore, supportive policies related to Foreign Direct Investment (FDI) and easing business operations make India an attractive destination for global vaccine companies seeking to establish manufacturing or research bases in the region.

Fueling Innovation: New Vaccine Formulations Emerging

The future competitiveness of the Indian vaccines industry rests on its ability to transition from being primarily a volume producer of traditional vaccines to a leader in developing cutting-edge formulations. Government support, particularly in funding and regulatory streamlining, is accelerating the emergence of new generation vaccines for diseases such as influenza, dengue, Human Papillomavirus (HPV), and those utilizing novel platforms like mRNA and viral vectors.

Directed R&D and Academic Collaboration

Key Government bodies, notably the Department of Biotechnology (DBT) and the Indian Council of Medical Research (ICMR), play a pivotal role in channeling research grants and public funding into critical areas of vaccine science. This includes supporting translational research, product development consortia, and establishing Centers of Excellence in vaccinology. By de-risking the early stages of R&D, the Government encourages private sector participation in high-risk, high-reward projects.

Regulatory Streamlining and Crisis Acceleration

The experience gained during recent public health crises demonstrated the Government's capacity to create accelerated and adaptive regulatory pathways for rapid vaccine development, testing, and approval. This flexibility, when applied judiciously, encourages manufacturers to fast-track their novel formulations. Furthermore, the commitment to indigenization pushes companies to develop domestic solutions for public health needs, leading to significant advances in vaccines that are thermally stable and adapted for tropical climates.

Improving Export Quality and Domestic Adoption

The success in developing new formulations directly translates to improved exports by providing high-value products to developed and emerging markets, further enhancing India's global reputation. Domestically, the integration of these sophisticated, new vaccines into the national health system, even if phased, ensures that the domestic population benefits from the latest advancements, creating a sophisticated and continuously evolving market.

Growth in Private Vaccination Clinics and Pharmacy Tie-ups:

While Government procurement dominates, robust regulatory and infrastructural support is simultaneously enabling the growth of a sophisticated private market catering to non-UIP and adult vaccination needs, especially in urban and semi-urban areas.

Expanding Access to Adult and Travel Vaccines

The private sector, comprising dedicated vaccination clinics, large hospital chains, and increasingly, strategic pharmacy tie-ups, provides faster access to specialized vaccines such as seasonal influenza shots, travel vaccines, zoster, and adult-specific pneumococcal vaccines. This growth is facilitated by clear regulatory guidelines regarding vaccine storage, prescription, and administration protocols for private providers.

Formalizing Private Healthcare Integration

Government policies that acknowledge and integrate the private sector into the broader vaccination strategy—particularly for non-UIP vaccines and during booster campaigns—are key. The digital backbone established during large-scale campaigns is a foundational asset that helps the private sector manage inventory, track beneficiaries, and adhere to standardized clinical and reporting procedures. This formality increases consumer trust and facilitates faster uptake of adult and optional vaccines.

The rising awareness among urban populations about preventive healthcare, coupled with Government health communication campaigns, also fuels this segment's growth.

Top Companies in India Vaccines Market: Policy Beneficiaries and Drivers

The policy environment has nurtured a set of globally competitive domestic companies that form the core of India's vaccine production capability. These firms are both the beneficiaries of the supportive Government policies and the primary drivers of the sector's growth.

These key players leverage large-scale, cost-efficient manufacturing, strong R&D capabilities, and deep market access knowledge:

- GlaxoSmithKline
- Sanofi Aventis
- Serum Institute of India
- Panacea Biotec
- Pfizer
- Novartis
- VHB Lifesciences
- Zydus Cadila
- MSD

The success of these companies is intrinsically linked to policies that provide a large domestic purchase guarantee, facilitate global quality certifications (WHO pre-qualification), and offer financial incentives for capacity expansion. Their ability to deliver high-quality, high-volume, and affordable vaccines is what truly secures India's position as a global vaccine leader.

Conclusion:

The evolution of the India vaccines industry is a compelling case study in policy-driven industrial and public health success. The Government has strategically engineered demand through its massive immunization programs, minimized risk for manufacturers through guaranteed procurement, and incentivized future growth through R&D funding and schemes like the PLI. This proactive approach has not only met the critical public health needs of its own vast population but has also cemented India's strategic importance as a reliable, high-volume supplier to the world. As the industry matures, the focus will continue to shift towards high-end innovation, ensuring India's sustained leadership in the global fight against infectious diseases.

Fuente: IMARC GROUP. Disponible en https://n9.cl/z6wes

Las vacunas actualizadas reducen las muertes por COVID-19, que sigue causando casos graves

31 dic. Seis años después de que se reportaran los primeros casos de neumonía en Wuhan, China, la COVID-19 ya no es una emergencia sanitaria internacional, pero sigue siendo un riesgo significativo para la salud pública, advirtió este miércoles la Organización Mundial de Salud (OMS).

El virus SARS-CoV-2 continúa causando hospitalizaciones y muertes en la región europea, aunque las vacunas actualizadas siguen siendo altamente efectivas para prevenir la enfermedad grave, revelan estudios recientes de la oficina para Europa de la agencia sanitaria.

El 31 de diciembre de 2019 se publicaron los primeros reportes oficiales que marcaron el inicio de la

pandemia. Más de tres años después, en mayo de 2023, la OMS declaró el fin de la Emergencia de Salud Pública de Importancia Internacional, tras un saldo estimado de más de 6,9 millones de muertes en el mundo. Sin embargo, los datos recientes muestran que la COVID-19 no ha desaparecido.

Desde el fin de la pandemia, la oficina para Europa de la OMS ha trabajado con ministerios de salud de países del este de la región -mediante la red EuroSAVE- para fortalecer la vigilancia de infecciones respiratorias graves.

Los estudios muestran la importancia de vacunarse

Un estudio de la dependencia analizó casi 4000 hospitalizaciones por infecciones respiratorias agudas registradas entre mayo de 2023 y abril de 2024, es decir, durante el primer año posterior al fin oficial de la pandemia. Los resultados indican que cerca del 10% de los pacientes hospitalizados tenían COVID-19. Más de dos tercios eran mayores de 60 años y una proporción similar presentaba al menos una enfermedad crónica, grupos para los cuales la OMS recomienda la vacunación anual actualizada.

"El virus SARS-CoV-2 sigue causando hospitalizaciones y decesos en la región europea pese a que las vacunas actualizadas son altamente efectivas para prevenir la enfermedad grave, dice la oficina regional de la agencia sanitaria de la ONU, reiterando la importancia de la revacunación para adultos mayores y grupos de alto riesgo."

Pese a ello, solo el 3% de los pacientes hospitalizados había recibido una vacuna contra la COVID-19 en los doce meses previos. Además, el impacto de la enfermedad siguió siendo severo: el 13% de los pacientes con COVID-19 requirió ingreso a unidades de cuidados intensivos y el 11% murió.

Otro estudio de EuroSAVE comparó, durante el periodo 2022–2024, a pacientes hospitalizados por COVID-19 con los ingresados por influenza. Los resultados mostraron que los pacientes con COVID-19 presentaron con mayor frecuencia desenlaces graves, como necesidad de oxígeno, ingreso a cuidados intensivos y muerte, en comparación con los casos de gripe.

“Si bien la COVID-19 ya no causa la propagación masiva que vimos durante la pandemia, sigue provocando un número considerable de hospitalizaciones y muertes”, señaló Mark Katz, epidemiólogo de la OMS/Europa. “El impacto del virus parece ser tan grave como el de la influenza, e incluso en algunos casos mayor”.

Vacunas actualizadas

En cuanto a la efectividad de las vacunas actualizadas, un estudio realizado en Kosovo durante tres años reveló que una dosis recibida en los seis meses previos fue 72% efectiva para prevenir hospitalizaciones y 67% efectiva para evitar cuadros más graves, incluidos el ingreso a cuidados intensivos y la muerte. Otro análisis, que incluyó datos de seis países y territorios, encontró que la vacunación reciente redujo en 60% el riesgo de hospitalización.

A pesar de estos resultados, los datos muestran una baja cobertura vacunal entre los grupos de alto riesgo, e incluso la falta de disponibilidad de vacunas en algunos países. “La mayoría de los pacientes hospitalizados eran adultos mayores o personas con enfermedades crónicas, justamente quienes deberían recibir refuerzos anuales”, explicó Silvia Bino, epidemióloga del Instituto de Salud Pública de Albania.

Ante este escenario, la OMS reiteró la importancia de la revacunación para adultos mayores, personas con comorbilidades, individuos inmunocomprometidos, mujeres embarazadas y personal de salud.

Fuente: Noticias ONU. Disponible en https://n9.cl/f6dhy

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A single ultra-low dose self-amplifying RNA rabies vaccine confers rapid and complete protection in mice.

Zhao D, Chen G, Wang S, Suo Y, Ye Q, Xing R, Yang Y, Li Z, XuelianWang, Zhou R, Ma L, Cao S, Wu X, Hu Y, Xiong C, Wang Y.Vaccine. 2025 Dec 26;73:128150. doi: 10.1016/j.vaccine.2025.128150. Online ahead of print.PMID: 41455183

Role of prior HPV infection and CD4 T-cell count in modulating cellular immune responses to a three-dose nonavalent HPV vaccine schedule in PWH receiving ART.

Tortellini E, Guardiani M, Carraro A, Ansaldo L, Corazza S, De Maria SG, Garattini S, Barresi M, Belvisi V, Zingaropoli MA, Dominelli F, Falvino C, Mengoni F, Tavelli A, Giambi C, Mastroianni CM, Del Borgo C, Marocco R, Lichtner M.BMC Med. 2025 Dec 24;23(1):689. doi: 10.1186/s12916-025-04504-1.PMID: 41444940

Tunable wrinkled topographies direct dendritic cell maturation and immune phenotypes.

Chavda A, Zhou X, Tokmedash MA, Moon JJ, Min J.Acta Biomater. 2025 Dec 30:S1742-7061(25)00957-2. doi: 10.1016/j.actbio.2025.12.050. Online ahead of print.PMID: 41478520

Analysis of MHC class II-bound CyHV-2 peptides in *Carassius gibelio* using mass spectrometry.

Xu C, Yu F, Ye J, Xue M, Huang Z, Jiang N, Meng Y, Fan Y, Kong W, Zheng Y, Zhou Y.J Virol. 2025 Dec 29:e0187025. doi: 10.1128/jvi.01870-25. Online ahead of print.PMID: 41459947

Emergence of novel QX-type IBV in China: molecular insights into unique S protein cleavage sites, antigenic drift, and enhanced pathogenicity (2025).

Zhang J, Ren J, Wu W, Yang Q, Wang T, Huang X, Zhou J, Wang Y, Yin H, Liao M, Jia W.BMC Vet Res. 2025 Dec 30. doi: 10.1186/s12917-025-05224-7. Online ahead of print.PMID: 41462311

Evaluation of the impacts of COVID-19 infection and vaccination on the outcomes of assisted reproductive technology (ART) cycles.

Shamlou Ahmadi F, Moini A, Arabipoor A, Zolfaghari Z, Ebrahimi B, Ghaffari F.Zygote. 2025 Dec 22:1-10. doi: 10.1017/S0967199425100245. Online ahead of print.PMID: 41423724

Test-negative designs with various reasons for testing: statistical bias and solution.

Yu M, Liu TH, Li KQ, Jewell N, Tchetgen Tchetgen E, Small D, Shi X, Wang B.Epidemiology. 2025 Dec 29. doi: 10.1097/EDE.0000000000001940. Online ahead of print.PMID: 41474934

Complex chronic adverse events following immunization: a systemic critique and reform proposal for vaccine pharmacovigilance.

Kenny TA.Ther Adv Drug Saf. 2025 Dec 24;16:20420986251395925. doi: 10.1177/20420986251395925. eCollection 2025.PMID: 41466718

Aminopeptidase H11: from molecular characterization to vaccine development.

Ye L, Liu H, Hu M.Trends Parasitol. 2025 Dec 26:S1471-4922(25)00359-9. doi: 10.1016/j.pt.2025.12.006. Online ahead of print.PMID: 41455645

Impact of maintenance immunosuppression regimen on anti-SARS-CoV-2 antibody and cellular kinetics in kidney transplant recipients receiving ChAdOx1 as primary vaccination.

Reis JS, Souza RM, Tedesco-Silva H, Requião-Moura L, Pestana JM, Foresto RD.Braz J Infect Dis. 2025 Dec 24;30(1):104604. doi: 10.1016/j.bjid.2025.104604. Online ahead of print.PMID: 41448096

An integrated microfluidic system for automated extraction of *in vitro* transcribed mRNAs *via* probe-coated magnetic beads.

Gurme ST, Su YT, Koparde B, Wang LH, Lee GB.Lab Chip. 2025 Dec 23. doi: 10.1039/d5lc00938c. Online ahead of print.PMID: 41431383

[Introduction of WHO position paper on herpes zoster vaccines (2025 edition)].

Xu ST, Feng LZ, Guo X, Suo LD, He HQ.Zhonghua Yi Xue Za Zhi. 2025 Dec 23;106(2):101-105. doi: 10.3760/cma.j.cn112137-20250821-02141. Online ahead of print.PMID: 41429601

Pneumococcal Serotype Distribution and Outcomes in Cancer Patients with Community-Acquired Pneumonia: A Prospective Study Using the 15-Valent Pneumococcal Conjugate Vaccine Serotype Specific Urinary Antigen Detection Assay.

Cintrón M, Gali V, Li Y, Jani K, Cander S, Kaltsas A, Kamboj M, Seo SK, Papanicolaou GA, Lee YJ.Int J Infect Dis. 2025 Dec 28:108360. doi: 10.1016/j.ijid.2025.108360. Online ahead of print.PMID: 41468971

New-Onset Vitiligo and Change in Disease Status Following COVID-19 Vaccination and COVID-19 Infection-An Online Survey.

Islam R, Frew J, Kok C, Gupta M.Australas J Dermatol. 2025 Dec 22. doi: 10.1111/ajd.70027. Online ahead of print.PMID: 41431160

The association of helminth infection against antimalarial antibody responses in malaria infection and vaccination: a systematic review and meta-analysis.

Pinandyo SH, Ali S, Aurelio B, Amoah AS, Kaisar MMM.Vaccine. 2025 Dec 24;73:128125. doi: 10.1016/j.vaccine.2025.128125. Online ahead of print.PMID: 41447780

Cross-species blood transcriptional correlates of BCG-mediated protection against tuberculosis include innate and adaptive immune processes.

Bridges K, Awany D, Gela A, Mwambene TD, Kurtz SL, Baker RE, Elkins KL, Sassetti CM, Scriba TJ, Lauffenburger DA.JCI Insight. 2025 Nov 11;10(24):e194450. doi: 10.1172/jci.insight.194450. eCollection 2025 Dec 22.PMID: 41217848

Ferritin-based hybrid protein particle vaccine combining M2e antigen of influenza A virus and S-protein tandem epitopes of SARS-CoV-2.

Song X, Chen Z, Zheng Y, Li Z, Yu R, Zhang C.Int J Biol Macromol. 2025 Dec 22;339(Pt 1):149867. doi: 10.1016/j.ijbiomac.2025.149867. Online ahead of print.PMID: 41443448

Heterogeneity in vaccination attitudes and behavior within an outwardly homogenous religious group: a cross-sectional study of the Ultra-Orthodox Jewish population in Safed, Israel.

Jacobson A, Spitzer S, Edelstein M.Int J Equity Health. 2025 Dec 30. doi: 10.1186/s12939-025-02752-4. Online ahead of print.PMID: 41469885

The Integrated Knowledge, Dissemination, and Action Framework: A Model for Community-Engaged Translation, Dissemination, and Action.

Uphold H, Warren B, Cabine K, Franzen S, Michaels K, French Turner T, Lewis EY, Starrs L, Ramirez Y, Sadler R, Harris A, Zimmerman M, Grodzinski A, Mehdipanah R, Anthony JC, Key KD, Vega IE, Drahota A.Health Promot Pract. 2025 Dec 24:15248399251394668. doi: 10.1177/15248399251394668. Online ahead of print.PMID: 41439535

First identification of occult hepatitis B infection among ethnic minority students in Thai Nguyen, Vietnam.

Ha VN, Cao LC, Dang TH, Thao DTP, Huyen DT, Hien TTT, Huyen TTT, Vu NX, Dung NT, Cuong DV, Song LH, Toan NL, My TN, Velavan TP.BMC Infect Dis. 2025 Dec 23. doi: 10.1186/s12879-025-12347-7. Online ahead of print.PMID: 41430652

IFN-gamma and IL-4 correlate with protection induced by an attenuated malaria vaccine.

Robinson TM, Bolton JS, Duncan EH, Bergmann-Leitner ES, Mura M.NPJ Vaccines. 2025 Dec 24;10(1):268. doi: 10.1038/s41541-025-01308-5.PMID: 41444489

The use of recommended vaccinations among patients with chronic diseases in relation to attitudes toward vaccination and anxiety levels.

Lewandowska A, Lewandowski T, Rudzki G, Próchnicki M, Bartosiewicz A, Stryjkowska-Góra A, Góra T, Zych B, Laskowska B, Bielec A, Bida B.BMC Infect Dis. 2025 Dec 24;25(1):1741. doi: 10.1186/s12879-025-12169-7.PMID: 41444942

Older Adults With Cognitive Impairment Can Correct COVID-19 Health-Related Misconceptions.

DeCaro RE, Marin A, Waskow E, Vives-Rodriguez A, Di Crosta A, La Malva P, Turk KW, Palumbo R, Budson AE.Health Sci Rep. 2025 Dec 30;9(1):e71519. doi: 10.1002/hsr2.71519. eCollection 2026 Jan.PMID: 41480626

Human antibody targeting of coronavirus spike S2 subunit is associated with protection mediated by Fc effector functions.

Muthuraman K, Jackman M, Liang Y, Garrett ME, Cui H, Nguyen LVH, Ivanochko D, Ye C, Pino PA, Hicks A, Maingot B, Yusko E, Benzeno S, Martínez-Sobrido L, Torrelles JB, Gilbert AE, Rubin BER, Keitany G, Jetha

A, Julien J-P.J Virol. 2025 Dec 23;99(12):e0152325. doi: 10.1128/jvi.01523-25. Epub 2025 Nov 12.PMID: 41222229

Systematic Determinants of Global COVID-19 Burden: Longitudinal Time-Series Analysis Using Big Data-Driven Artificial Intelligence.

Cao Z, Han W, Zhang X, Zhang C, Zeng J, Chen Y, Long H, Chen J, Du X.J Med Internet Res. 2025 Dec 29;27:e79745. doi: 10.2196/79745.PMID: 41461077

Clade-Specific Influences of Glycans on the Interactions between HIV-1 Envelope and Broadly Neutralizing Antibodies.

Arandhara M, Kumar Y, Dixit NM, Maiti PK.J Chem Inf Model. 2025 Dec 22;65(24):13296-13314. doi: 10.1021/acs.jcim.5c01051. Epub 2025 Sep 16.PMID: 40958474

Recombinant duck enteritis virus harboring the hemagglutinin genes of influenza virus rapidly induces specific cellular immunity in ducks.

Zhao Y, Ma Q, Jiao C, Liu J, Zhang X, Chen P, Wen Z, Jiang Y, Zeng X, Deng G, Shi J, Li Y, Tian G, Chen H, Liu J.J Virol. 2025 Dec 30:e0201425. doi: 10.1128/jvi.02014-25. Online ahead of print.PMID: 41467842

Recombinant Listeria expressing the HPV multivalent E6E7 protein has a broader spectrum of anti-tumor effects against cervical cancer.

Gan S, Tang J, Qin S, Ou Q, Chen Z, Chen Z, Wang C.BMC Cancer. 2025 Dec 26. doi: 10.1186/s12885-025-15476-z. Online ahead of print.PMID: 41454319

Changing pace of human papillomavirus vaccination among U.S. adolescents and young adults: the National Health and Nutrition Examination Survey, 2007-August 2023.

Zhang AJ, Nguyen JT, Hong AS, Taing K, Nguyen DQ.Cancer Causes Control. 2025 Dec 27;37(1):6. doi: 10.1007/s10552-025-02083-3.PMID: 41454961

Differentiating mpox infection and vaccination using a validated multiplex orthopoxvirus IgG serology assay.

Reed JC, Downs C, McAllister K, Mauer C, McClurkan CL, Wilson D, Holzhauer K, Dickerson JA, Cannon CA, Babu TM, Golden MR, Koelle DM, Greninger AL.J Clin Microbiol. 2025 Dec 29:e0154825. doi: 10.1128/jcm.01548-25. Online ahead of print.PMID: 41459934

Lipid nanoparticle encapsulated TLR3 agonist adjuvant elicits potent T cell immunity against cancer and viruses.

Ko KH, Lee SH, Choi YH, Kang SM, Yang HS, Lee SM, Jo EB, Bae HS, Hong SB, Kim DH, Cha SB.NPJ Vaccines. 2025 Dec 23. doi: 10.1038/s41541-025-01349-w. Online ahead of print.PMID: 41436456

Transcriptomic profiling reveals early immune activation and metabolic remodeling in lymphoid tissues following in ovo Marek's disease virus mRNA vaccination in chickens.

Shoja Doost J, Yitbarek A, Wootton SK, Behboudi S, Sharif S.Vet Immunol Immunopathol. 2025 Dec 26;292:111052. doi: 10.1016/j.vetimm.2025.111052. Online ahead of print.PMID: 41468646

Humoral and T-cell immune responses to coronavirus disease 2019 vaccines in patients with hematological malignancies.

Makino H, Fukuhara S, Okinaka K, Shibata M, Hattori D, Sasaki H, Makita S, Iwaki N, Munakata W, Yagishita S, Shiotsuka M, Kobayashi O, Yanagida M, Irino Y, Hamada A, Yamamoto N, Goto Y, Izutsu K, Katsuya Y.Jpn J Clin Oncol. 2025 Dec 29:hyaf207. doi: 10.1093/jjco/hyaf207. Online ahead of print.PMID: 41459808

Genomic insights into the expansion of meropenem-resistant GPSC1-CC320 Streptococcus pneumoniae serotype 19A isolates from children under 5 years of age with invasive infections, 2018-2024.

Lee J, Park J, La TM, Hyeon JY, Kim H, Ko SY, Kim DH, Yoo J, Kim J.PLoS One. 2025 Dec 30;20(12):e0325870. doi: 10.1371/journal.pone.0325870. eCollection 2025.PMID: 41468439

Prediction of factors influencing adults' likelihood of accepting any COVID-19 vaccination and their willingness to pay - a nation-wide discrete choice experiment among the general public from India.

Raj JP, Mani T, Joy M, Pandit S, Godbole C, Bendkhale S, Soni D, Lakshmanan J, Gogtay NJ.BMC Public Health. 2025 Dec 30;25(1):4369. doi: 10.1186/s12889-025-25658-w.PMID: 41469632

Using protection motivation theory to explain intentions to vaccinate against tick-borne encephalitis.

Eitze S, Maslov V, Otten L.BMC Public Health. 2025 Dec 23;25(1):4345. doi: 10.1186/s12889-025-25470-6.PMID: 41436977

Complete gene sequence diversity, amplification, and natural selection of the Plasmodium vivax Duffy binding protein locus.

Putaporntip C, Kuamsab N, Tia T, Takashima Y, Jongwutiwes S.Malar J. 2025 Dec 22. doi: 10.1186/s12936-025-05756-1. Online ahead of print.PMID: 41430616

Large differences in MMR and DTaP-IPV vaccination coverage among primary schools by denomination, the Netherlands, 2024.

Pijpers J, van Roon A, van den Hof S, van Gaalen R, de Melker H, Hahné S.Vaccine. 2025 Dec 23;72:128137. doi: 10.1016/j.vaccine.2025.128137. Online ahead of print.PMID: 41442888

Acute malaria dysregulates specialized lymph node macrophages to suppress vaccine-elicited protection against the Ebola virus.

Elliff J, Grady L, O'Donnell KL, Messingham C, Rogers KJ, Akther J, Thurman A, Vijay R, Pezzulo A, Randall T, Marzi A, Butler NS, Maury W.mBio. 2025 Dec 30:e0279625. doi: 10.1128/mbio.02796-25. Online ahead of print.PMID: 41467787

Purification and immunogenicity of Nipah virus-like particles from insect cells.

Bezeljak U, Jerman A, Kobal T, Lokar Kosmač M, Birsa E, Kolenc M, Déri D, Pályi B, Kis Z, Peterka M.BMC Biotechnol. 2025 Dec 31. doi: 10.1186/s12896-025-01095-w. Online ahead of print.PMID: 41476213

B-Raf kinase blockade protects airway epithelial cells against respiratory syncytial virus infection and modulates interferon responses.

Cerato JA, Serda M, Olumade T, Duan W, Thanikachalam S, Salih R, Madlangsakay MIR, Moraes TJ, Santer DM, Zahedi RP, Coombs KM, Porto BN.ERJ Open Res. 2025 Dec 22;11(6):00307-2025. doi: 10.1183/23120541.00307-2025. eCollection 2025 Nov.PMID: 41438855

Hepatitis B virus (HBV) revaccination in MSM and were born in the nationwide neonatal HBV vaccination era: A randomized clinical trial.

Huang YC, Yang CJ, Li CW, Sun HY, Huang SH, Kuo PH, Liu WC, Su YC, Ko WC, Hung CC.Int J Infect Dis. 2025 Dec 23:108330. doi: 10.1016/j.ijid.2025.108330. Online ahead of print.PMID: 41448530

Structural basis for collagen recognition by the *Streptococcus pyogenes* M3 protein and its involvement in biofilm.

Wojnowska M, Wajima T, Yelland T, Ludewig H, Hagan RM, McCurry OF, Watt G, Hamaia SW, Bihan D, Malcor JD, Bonna A, Bergsten H, Palma Medina LM, Svensson M, Oppegaard O, Skrede S, Arnell P, Hyldegaard O, Farndale RW, Norrby-Teglund A, Schwarz-Linek U.Elife. 2025 Dec 22;14:RP105539. doi: 10.7554/eLife.105539.PMID: 41424245

Evolution of Bovine Herpesvirus-1 infection prevalence and infection dynamics in Irish dairy herds following an IBR hyperimmunisation vaccination protocol.

Duffy R, Gavin T, Couper A, Quille J, McLaughlin D, Hanly E, McGrath C, Gordon D, Clerkin P, Berga MS, Tomás HS.Ir Vet J. 2025 Dec 23. doi: 10.1186/s13620-025-00328-w. Online ahead of print.PMID: 41437296

Serum Arginase-1 is a predictive biomarker for melanoma patients and a surrogate indicator of systemic myeloid cell fitness.

Brand M, Adamik J, Wang H, Sember SE, Muzzio JL, Buffo MJ, Sander CA, Kirkwood JM, Ferris RL, Butterfield LH, Vujanovic L.Oncoimmunology. 2025 Dec 31;14(1):2595764. doi: 10.1080/2162402X.2025.2595764. Epub 2025 Dec 10.PMID: 41369171

Insights into infectious laryngotracheitis virus vaccine-mediated protection: A comparative assessment of eye drop and vent brush vaccination methods.

Mumu TT, Tran TT, Walkden-Brown SW, Andronicos NM, Gerber PF.Avian Pathol. 2025 Dec 23:1-37. doi: 10.1080/03079457.2025.2609583. Online ahead of print.PMID: 41432643

Multiomic Immune Profiling of Pediatric Transplant Recipients Identifies Cell States Associated with Vaccine Response.

Wedel J, Tang Y, Alsairafi B, Do V, Maslyar M, Fleming R, Schwartz MA, Gerdemann U, Albanese A, Mitsialis V, Collen LV, Nishitani M, Bresnahan M, Saccocia G, Bearup R, Okoroafor I, Siegel SJ, Wachter F, Waters K, Weichert-Leahey N, Clarke NJ, Mandl KD, Kean LS, Snapper SB, Briscoe DM, Horwitz BH.Clin J Am Soc Nephrol. 2025 Dec 24. doi: 10.2215/CJN.0000000949. Online ahead of print.PMID: 41442217

A novel TamA + LtgC bivalent vaccine induces potent immunogenic and bactericidal antibodies against Neisseria gonorrhoeae.

Noori Goodarzi N, Ajdary S, Torkamaneh M, Aminharati F, Pourmand MR, Badmasti F.Med Microbiol Immunol. 2025 Dec 29;215(1):4. doi: 10.1007/s00430-025-00866-8.PMID: 41460430

Affinity maturation and light-chain-mediated paratope diversification anticipates viral evolution.

Dingus J, Yoo DK, Kumar S, Wang Y, Kibria MG, Saghaei S, Allahyari Z, Chen JW, Caputo NM, Hwang J, Chen B, Wesemann DR.Cell Rep. 2025 Dec 30;45(1):116800. doi: 10.1016/j.celrep.2025.116800. Online ahead of print.PMID: 41474620

Genetic diversity and phylogenetic characteristics of human adenovirus strains 40/41 circulating in Yantai, China, during 2017-2019.

Niu P, Du P, Sun Z, Yao X, Zhao Y, Cheng P, Yang Q, Zhang Z, Ma X, Wang J.Appl Environ Microbiol. 2025 Dec 23;91(12):e0098325. doi: 10.1128/aem.00983-25. Epub 2025 Nov 25.PMID: 41288354

Prospective Multi-Institutional Study of A Provider-Free Educational Intervention to Increase Point-of-Care Adult HPV Vaccination Uptake.

Rodriggs TM, Bloom JC, Mwaura A, Akhtar S, Al-Inaya Y, Centanni R, Sjogren E, Demo M, Faden DL.Otolaryngol Head Neck Surg. 2025 Dec 26. doi: 10.1002/ohn.70092. Online ahead of print.PMID: 41451690

Tiny packages, big potential: bacterial membrane vesicles in vaccinology.

Varol A, Aydın Ş, Adıgüzel A, Özdemir S.Microb Cell Fact. 2025 Dec 30. doi: 10.1186/s12934-025-02908-5. Online ahead of print.PMID: 41469689

Human papillomavirus genotype distribution in cervical intraepithelial neoplasia grade 2+ from childhood vaccinated women: The Trial23 cohort study.

Nonboe MH, Napolitano G, Schroll JB, Andersen B, Christiansen S, Frandsen AP, Pedersen H, Lynge E, Bonde J, Høgdall E.Vaccine. 2025 Dec 23;73:128142. doi: 10.1016/j.vaccine.2025.128142. Online ahead of print.PMID: 41442869

Recombinant attenuated Salmonella vaccine promotes CD8(+) T cell-dependent antitumor immunity via IFN-gamma-induced IRF-1-mediated upregulation of IL-7.

Jeong JH, Kim DJ, Kim CW, Han Y, Jang AR, Park JH, Tae N, Ahn JH, Cho J, Choi SS, Kweon MN, Kim DH, Ko HJ.Cell Biosci. 2025 Dec 29;15(1):169. doi: 10.1186/s13578-025-01510-x.PMID: 41462488

A self-assembled Pirococcus abyssi exosome complex displaying outer membrane proteins of Leptospira interrogans elicits protective immunity against leptospirosis.

de Oliveira NR, Maia MAC, Bunde TT, Pedra ACK, Nogueira JD, Maiocchi LV, Seixas Neto ACP, Faim LM, Pizani MAC, Arancibia PCM, Bohn TLO, Dellagostin OA.Vaccine. 2025 Dec 23;73:128159. doi: 10.1016/j.vaccine.2025.128159. Online ahead of print.PMID: 41442861

Safety and immunogenicity of a single dose of a JN.1 variant COVID-19 vaccine in previously vaccinated adults: Primary analysis report of a phase 3 open-label trial.

Alves K, Kouassi A, Nelson J, Plested JS, Kalkeri R, Zhu M, Cloney-Clark S, Cai Z, Ahmed A, McKnight I, Mallory RM, Noriega F.Vaccine. 2025 Dec 26;73:128164. doi: 10.1016/j.vaccine.2025.128164. Online ahead of print.PMID: 41455184

Letter to the editor: Public health impact and cost-effectiveness of the adjuvanted RSVPreF3 vaccine for respiratory syncytial virus prevention among adults aged 50 years and older in Germany.

Stemler J, Herrmann S, Cornely O, Mellinghoff S.Expert Rev Vaccines. 2026 Dec;25(1):2606334. doi: 10.1080/14760584.2025.2606334. Epub 2025 Dec 24.PMID: 41416361

Immunogenicity analyses and indirect ELISA application of a chimeric virus-like particle presenting a highly conserved peptide of Akabane virus Gc protein.

Wang J, Wei F, Yu R, Chen D, Wu S.Virol J. 2025 Dec 30. doi: 10.1186/s12985-025-03045-6. Online ahead of print.PMID: 41469706

Genotype distribution and multisite prevalence of human papillomavirus among men who have sex with men (MSM) in North India.

Dash A, Khunger N, Muralidhar S, Srivastava P, Mehrotra K, Goyal A.Int J STD AIDS. 2025 Dec 23:9564624251410467. doi: 10.1177/09564624251410467. Online ahead of print.PMID: 41432068

Natural syndemic infection between African swine fever virus (ASFV) and porcine reproductive and respiratory syndrome virus (PRRSV) leads to shifting of ASFV tissue tropism to lungs with exacerbated presentation of the disease.

Balakrishna CB, Rajkhowa TK, Jayappa K, Risatti GR.Infect Genet Evol. 2025 Dec 30:105872. doi: 10.1016/j.meegid.2025.105872. Online ahead of print.PMID: 41478517

"Three of a Kind?" Unmasking the Clinical Burden of Human Metapneumovirus and Parainfluenza Virus Compared to Respiratory Syncytial Virus in Hospitalized Adults: A Pre-COVID-19 Multicenter Cohort Study.

Davido B, Mamona C, Gault E, Annane D, Beaune S, Dumoulin J, de Truchis P, Saleh-Mghir A, Lemarié B, Loubet P.Int J Infect Dis. 2025 Dec 26:108353. doi: 10.1016/j.ijid.2025.108353. Online ahead of print.PMID: 41456769

Prostate tumor immune microenvironment changes following immunotherapy shared by patients who developed anti-tumor response or immune-related adverse events.

Rastogi I, McNeel DG.Oncoimmunology. 2025 Dec 31;14(1):2595788. doi: 10.1080/2162402X.2025.2595788. Epub 2025 Dec 11.PMID: 41378786

Immunogenicity of a bivalent recombinant adenovirus expressing VP1 proteins of bovine norovirus and bovine nebovirus in mice and calves.

Chen T, Chu J, Song X, Yu Q, Deng G, Zeng J, Yu C, Zhang B.BMC Microbiol. 2025 Dec 24;25(1):798. doi: 10.1186/s12866-025-04542-y.PMID: 41444873

mRNA vaccines targeting Leptospira immunoglobulin-like proteins confer partial protection in a hamster model of leptospirosis.

Techawiwattanaboon T, Leekitcharoenphon R, Alameh MG, Boonkea S, Sangkanjanavanich N, Nakornpakdee Y, Ajimathorn Y, Prompetchara E, Ketloy C, Buranapraditkun S, Palaga T, Kanthawong S,

Heyes J, Weissman D, Ruxrungtham K, Patarakul K.Vaccine. 2025 Dec 25;73:128099. doi: 10.1016/j.vaccine.2025.128099. Online ahead of print.PMID: 41453244

Psychosocial and digital predictors of Hepatitis B vaccination uptake in healthcare workers: insights from a Nigerian tertiary hospital.

Aremu SO, Adamu AI, Ngwai YB, Barkhadle AA.Trop Med Health. 2025 Dec 31;53(1):198. doi: 10.1186/s41182-025-00893-4.PMID: 41476203

Clinical features, epidemiology, treatment, and prognosis of multicentre pediatric pneumococcal meningitis in China from 2019 to 2021.

Jian B, Shen G, Liu J, Li W, Li Z, Tan K, Zhou K, Deng H, Li J, Bi J, Jing S, Zhu C, Zhang X, Wang Y, Li J, Chen B, Dong F, Zhao S, Wang L, Ning X, Zhu L, Li L, Huang C, Jia L, Wang F, Deng J, Shan M, Cai H, Liu S, Jiang T, Wang Y, Zhou Y, Liang J, Ye L, Lu X, Sun J, Zhao Q, Wang H, Zhang B, Yao K, Yang Y, Liu G.BMC Infect Dis. 2025 Dec 24;25(1):1739. doi: 10.1186/s12879-025-12049-0.PMID: 41444504

Effectiveness of a reactive oral cholera vaccination during a cholera outbreak at the Douala New-Bell Central Prison in Cameroon.

Bekolo CE, Wetie Tchakoutio PL, Endalle Esso L, Ewane L, Ateudjieu J.PLoS Negl Trop Dis. 2025 Dec 29;19(12):e0013870. doi: 10.1371/journal.pntd.0013870. Online ahead of print.PMID: 41460926

Emergence of antibiotic-resistant pneumococcal serotypes causing invasive pneumococcal disease in children, Spain.

Llorente J, Sempere J, Llamosí M, Pérez-García C, Úbeda A, Vidal-Alcántara EJ, Sanz JC, Domenech M, Yuste J.Antimicrob Agents Chemother. 2025 Dec 31:e0153025. doi: 10.1128/aac.01530-25. Online ahead of print.PMID: 41474341

Rapidly Progressive Disseminated Bacillus Calmette-Guérin Infection (BCGitis) in a 3-Month-Old Infant Without Immunodeficiency: A Case Report.

Perillo NQ, Heliodoro T, De Camargo LA, Gomes Avelino MA, Bahmad F Jr.Am J Case Rep. 2025 Dec 29;26:e949742. doi: 10.12659/AJCR.949742.PMID: 41457504

A Novel Trained Immunity Adjuvant Derived From Commensal Bacteria Potentiates Liposome-Hydrogel Cancer Vaccine Against Breast Tumors.

Zhou CK, Zhang JG, Peng ZR, Luo XY, Zhang L, Wang TL, Wan WQ, Yang HX, Chen W, Yang YJ.Adv Healthc Mater. 2025 Dec 29:e04705. doi: 10.1002/adhm.202504705. Online ahead of print.PMID: 41462518

Synthesis of Carbohydrate Derivatives in multicomponent reactions: Approaches and applications.

Andrade IMG, Lima Filho EO, Desmarais MOL, Valadão CLF, Forezi LDSM, da Silva FC.Carbohydr Res. 2025 Dec 29;561:109809. doi: 10.1016/j.carres.2025.109809. Online ahead of print.PMID: 41477934

Development of Sensitive and Specific Indirect ELISA Tests for the Detection of Antibodies Against Bovine Leukemia Virus in Serum and Milk Samples.

Addiego A, Carrión F, Olivero-Deibe N, Fló M, Rammauro F, Ibañez N, da Silva Silveira C, Riet-Correa F, Tomé-Poderti L, Pritsch O, Bianchi S.J Virol Methods. 2025 Dec 23:115335. doi: 10.1016/j.jviromet.2025.115335. Online ahead of print.PMID: 41448254

Reprogramming *Listeria monocytogenes* flavin metabolism to improve its therapeutic safety profile and broaden innate T-cell activation.

Chevée V, Lobanovska M, Rivera-Lugo R, Güereca L, Feng Y, Anaya-Sanchez A, Garcia Castillo J, Huckins AM, Lemmens EE, Rae CS, Hardy JW, Carrington R, Kotula JW, Portnoy DA.mBio. 2025 Dec 31:e0365225. doi: 10.1128/mbio.03652-25. Online ahead of print.PMID: 41474325

Development and characterization of a recombinant attenuated duck adenovirus B2 vector expressing the vp3 gene of short beak and dwarfism syndrome virus.

You G, Jiang D, Cheng X, Zeng L, Xiao S, Zhu X, Wang S, Chen S, Chen S.Vet J. 2025 Dec 26;315:106542. doi: 10.1016/j.tvjl.2025.106542. Online ahead of print.PMID: 41456834

Identification of a Novel HIV-1 Circulating Recombinant Form (CRF184_BC) Among Heterosexual Populations Along the China-Myanmar Border Region.

Chen M, Chen H, Ma Y, Jia M, Ding W.AIDS Res Hum Retroviruses. 2025 Dec 22. doi: 10.1177/08892229251410288. Online ahead of print.PMID: 41468039

Low Rate of Documented Measles Immunity in a Large Urban HIV Clinic.

Andrews HS, Blanchard HL, Yang S, Utay NS.Clin Infect Dis. 2025 Dec 24;81(5):980-982. doi: 10.1093/cid/ciaf278.PMID: 40435318

AS-IV exhibits anti-SADS-CoV effects through the inhibition of the MAPK/JNK signaling pathway mediated by the S1 protein.

Liu S, Zeng Y, Guo D, Huang J, Li X, Zhang G.Vet Microbiol. 2025 Dec 29;313:110858. doi: 10.1016/j.vetmic.2025.110858. Online ahead of print.PMID: 41477941

Developing an implementation plan to improve vaccine uptake in pulmonary medicine: An institutional approach through the American Thoracic Society vaccine initiative.

Stout NL, Rudisill TM, Halbritter K, Ahmed H, Mph HD, Thompson J, Al-Saeed N, Alawad S, Rahman A, Stansbury R.Vaccine. 2025 Dec 26;73:128138. doi: 10.1016/j.vaccine.2025.128138. Online ahead of print.PMID: 41455186

Predictors of COVID-19 vaccination intention among students in Ghana: An application of the Health Belief Model and Theory of Planned Behaviour.

Ahmed H, Gohoho M, Bosoka SA, Agyemang GS, Ziema SA, Alorwu J, Annobil I, Charles-Unadike VO.PLOS Glob Public Health. 2025 Dec 29;5(12):e0005561. doi: 10.1371/journal.pgph.0005561. eCollection 2025.PMID: 41460888

Effect of BCG vaccination on the progression of latent tuberculosis infection to active disease in contacts: a systematic review and meta-analysis.

Cai S, Yan T, Yang Y, Guo X, Li X, Chen H, He J, Xia Y, Zhou Y, Tan Q, Cun X, Zhou G.BMC Infect Dis. 2025 Dec 24. doi: 10.1186/s12879-025-12318-y. Online ahead of print.PMID: 41444517

Recombinant Bacillus subtilis spores expressing SARS-CoV-2 spike protein induced humoral, mucosal, and cellular immunity in mice.

Hazan A, Saperi AA, Zulkifli N, MatRahim NA, Tiong V, Lee HY, AbuBakar S.Sci Rep. 2025 Dec 24;15(1):44552. doi: 10.1038/s41598-025-28250-9.PMID: 41444793

Prior exposure of airway epithelial cells to mycobacteria reduces subsequent Mycobacterium tuberculosis infection and resulting inflammation.

Barclay AM, Ninaber DK, Walburg KV, Hiemstra PS, Ottenhoff THM, van der Does AM, Joosten SA.J Innate Immun. 2025 Dec 31:1-19. doi: 10.1159/000550118. Online ahead of print.PMID: 41474654

Development of an Indirect ELISA Based on the PEDV S Protein and Evaluation of Its Correlation With Neutralizing Antibody and Immune Protection.

Ma G, Hu G, Ren G, Ma W, Zhang S, Shen H, Liu Y, Li B.Transbound Emerg Dis. 2025 Dec 28;2025:6185969. doi: 10.1155/tbed/6185969. eCollection 2025.PMID: 41473409

Dietary nano-chromium picolinate enhances interferon-gamma expression in heat-stressed broilers vaccinated against Newcastle disease.

Hajializadeh F, Talebi A, Jozani RJ.Res Vet Sci. 2025 Dec 26;200:106044. doi: 10.1016/j.rvsc.2025.106044. Online ahead of print.PMID: 41468791

Intramuscular All-Trans Retinoic Acid-Adjuvanted Nanovaccine Elicits Robust Mucosal and Systemic Immunity Against *Helicobacter pylori*.

Xu J, Sun M, Wang N, Shi Y, Liu Y, Tan R, Zhou S, Guo G, Liu K.Int J Nanomedicine. 2025 Dec 28;20:15847-15861. doi: 10.2147/IJN.S557242. eCollection 2025.PMID: 41488860

Immunoinformatics-driven design of a multi-epitope vaccine targeting non-typhoidal Salmonella's type IV secretion system VirB4, VirB5, and VirB6 proteins.

Garrido-Palazuelos LI, Khan HA, Ameer T, Sarabia-Torres D, Guerra-Meza O, Aguirre-Sánchez JR.Int J Biol Macromol. 2025 Dec 30;339(Pt 2):149973. doi: 10.1016/j.ijbiomac.2025.149973. Online ahead of print.PMID: 41478472

Evaluation of glucose metabolism, endocrine, and renal functions following vaccination in post-COVID-19 individuals: a longitudinal retrospective single-center cohort study.

Gür C, Kumaş Solak S.BMC Infect Dis. 2025 Dec 29;25(1):1757. doi: 10.1186/s12879-025-12179-5.PMID: 41466230

Annual vaccination with BNT162b2 in Germany can avoid substantial clinical and economic burden of COVID-19 disease.

Barber A, Roiz J, Greenall S, Church E, Schmetz A, Riebel S, Yang J, Witzke O, Gandjour A.J Med Econ. 2026 Dec;29(1):16-28. doi: 10.1080/13696998.2025.2604970. Epub 2025 Dec 27.PMID: 41454846

Chinese Yam Polysaccharide-Loaded Aluminum Hydroxide Nanoparticle-Stabilized Pickering Emulsion as an Adjuvant to Enhance Immune Responses for the H9N2 Vaccine.

Zhang Z, Zhao Q, Xu P, Zhu Y, Yang R, Liu W, Zhao Q, Shi W, Gu P.Mol Pharm. 2025 Dec 31. doi: 10.1021/acs.molpharmaceut.5c01531. Online ahead of print.PMID: 41476168

Genetic Characterization of Enteroviruses Associated with Hand, Foot, and Mouth Disease in Yunnan Province, China, 2023.

Liu X, Cun J, Jiang L, Fu X, Gu W, Yoshida H, Tian B.Jpn J Infect Dis. 2025 Dec 26. doi: 10.7883/yoken.JJID.2025.172. Online ahead of print.PMID: 41485904

Nasopharyngeal pneumococcal carriage in Indian children following 10-valent PCV (PNEUMOSIL®) introduction through India's universal immunization program: A post licensure cross-sectional study.

Sethna V, Apte A, Sanghavi S, Tang Y, Poonawalla C, Dhere R, Dayma G, Kawade A, Nerlekar R, Jadhav A, Tuttle R, Hausdorff WP, Bavdekar A.Vaccine. 2025 Dec 23;73:128129. doi: 10.1016/j.vaccine.2025.128129. Online ahead of print.PMID: 41442867

A phase 2 study of GI-6207 in patients with recurrent medullary thyroid cancer.

Del Rivero J, Donahue RN, Marte JL, Gramza A, Bilusic M, Cordes L, Karzai F, Schlom J, Gulley JL, Madan RA.Oncologist. 2025 Dec 30:oyaf429. doi: 10.1093/oncolo/oyaf429. Online ahead of print.PMID: 41467761

Epidermal resident memory T cell fitness requires antigen encounter in the skin.

Weiss ES, Hirai T, Li H, Liu A, Baker S, Magill I, Gillis J, Zhang YR, Ramcke T, Kurihara K; ImmGen Consortium OpenSource T cell Project; Masopust D, Anandasabapathy N, Singh H, Zemmour D, Mackay LK, Kaplan DH.Elife. 2025 Dec 30;14:RP107096. doi: 10.7554/eLife.107096.PMID: 41468295

Comparative N-glycoproteomics Characterization of N-glycoproteins of H3N8 Viruses Produced in Chicken Embryos versus MDCK Cells.

Wang H, Zhang Z, Zhang X, Zhao L, Liu X, Ye Q, Tan WS.ACS Omega. 2025 Dec 17;10(51):62727-62736. doi: 10.1021/acsomega.5c07490. eCollection 2025 Dec 30.PMID: 41487208

Micellar co-delivery of KRAS-mutant inhibitors and TLR7/8 agonists synergizes targeted therapy and immunotherapy in lung cancer.

Miao S, Sun Y, Qu Y, Zhu L, Zhong Z, Meng F.Acta Biomater. 2025 Dec 24:S1742-7061(25)00952-3. doi: 10.1016/j.actbio.2025.12.045. Online ahead of print.PMID: 41453423

Prevalence of serum HBV markers and management of occupational exposure to HBV among healthcare workers in a tertiary hospital.

Xu Y, Li L, Wang J, Wan Y, Li J, Zhang L.BMC Infect Dis. 2025 Dec 25. doi: 10.1186/s12879-025-12450-9. Online ahead of print.PMID: 41449341

Working together: a multi-component intranasal vaccine provides synergistic protection against COVID-19.

Breznik JA, Verschoor CP.Signal Transduct Target Ther. 2025 Dec 22;10(1):408. doi: 10.1038/s41392-025-02508-0.PMID: 41423682

Coumarin-stavudine (d4T) novel hybrid ProTides with dual-functionality and enhanced anti-HIV activity.

Kandil SB, Jones KS, Pannecouque C, Westwell AD.Eur J Med Chem. 2025 Dec 30;304:118543. doi: 10.1016/j.ejmech.2025.118543. Online ahead of print.PMID: 41485274

Engineered dengue virus NS1 mRNA-lipid nanoparticle induces therapeutic IgG production that lacks autoantibody activity and neutralizes NS1 entry in liver cells.

Das S, Begum F, Ghora S, Ray U.Vaccine. 2025 Dec 23;73:128147. doi: 10.1016/j.vaccine.2025.128147. Online ahead of print.PMID: 41442864

Age-Specific Prevalence of Multiple Human Papillomavirus Infections in a Clinical Cohort of Men: A Cross-Sectional Study in Shenzhen, China.

Liu H, Duan S, Chu W, Yang R, Wei L, Zhang S.Emerg Microbes Infect. 2025 Dec 22:2608402. doi: 10.1080/22221751.2025.2608402. Online ahead of print.PMID: 41427928

Corrected and republished from: "Clinical validation of an RSV neutralization assay and analysis of cross-sectional sera associated with 2021-2023 RSV outbreaks to investigate the immunity debt hypothesis".

Piliper EA, Reed J, Greninger AL.Microbiol Spectr. 2025 Dec 23:e0173925. doi: 10.1128/spectrum.01739-25. Online ahead of print.PMID: 41433208

Initial different human papillomavirus infection statuses and subsequent infection risk: a decade-long longitudinal study.

Zheng H, Gao M, Xu H, Cai J, Wu Z, Gu Y.J Health Popul Nutr. 2025 Dec 26. doi: 10.1186/s41043-025-01202-9. Online ahead of print.PMID: 41454363

Implantable artificial lymph node enables rapid in vivo neoantigen-specific T-cell generation and expansion for improving antitumor immunity.

Cai Z, Lin K, Dong X, Li Z, Chen G, Guo L, Mou P, Chen P, Huang J, Li L, Liu X, Tang R, Zeng Y.J Immunother Cancer. 2025 Dec 31;13(12):e013043. doi: 10.1136/jitc-2025-013043.PMID: 41475843

T and B cell responses following primary COVID-19 vaccination with CoronaVac and two heterologous BNT162b2 booster doses.

Wangteeraprasert A, Pongcharoen S, Ngoenkam J, Makanut S.mSphere. 2025 Dec 23;10(12):e0072225. doi: 10.1128/msphere.00722-25. Epub 2025 Nov 18.PMID: 41251472

Rapid establishment and validation of a PMAxx-RT-qPCR method for infectious titer detection of freeze-dried live attenuated hepatitis A vaccine (H(2) Strain).

Wang Y, Gao Y, Wang W, Liu Q, Li Y, Zeng H, Chen L, Cheng C, Wu F.J Virol Methods. 2025 Dec 23;341:115333. doi: 10.1016/j.jviromet.2025.115333. Online ahead of print.PMID: 41448253

Convergent mutation trajectories convert functional self-tolerance in IGHV4-34 B cells to genetic tolerance encoded in the antibody.

Jara CJ, Zachariah S, Jackson KJL, Peters TJ, Masle-Farquhar E, Burnett DL, Lam E, Faulks M, Russell A, Miosge L, Smith S, Tscharke DC, Brink R, Goodnow CC, Reed JH.Proc Natl Acad Sci U S A. 2025 Dec 23;122(51):e2522257122. doi: 10.1073/pnas.2522257122. Epub 2025 Dec 18.PMID: 41410768

Evaluation of hepatitis B vaccine effectiveness among fully vaccinated healthcare workers in Ethiopia.

Adugna A, Amare GA, Muche Y, Getinet M, Melkamu A, Dilnessa T, Malik T, Belew H, Jemal M, Abebaw D.BMC Infect Dis. 2025 Dec 25. doi: 10.1186/s12879-025-12348-6. Online ahead of print.PMID: 41449368

Alcohol use disorder and risk of incident COVID-19 infection: A nested case-control study in Taiwan.

Yen YF, Lai YJ, Su SS, Kuo CJ.Addiction. 2025 Dec 24. doi: 10.1111/add.70309. Online ahead of print.PMID: 41437811

The impact of the COVID-19 pandemic on HIV, malaria, tuberculosis and childhood vaccination services in Guinea: an interrupted time series analysis.

Diallo A, Sidikiba S, Cissé AS, Camara M, Kaba M, Diallo BD, Carlos-Bolumbu M, Sako FB, Delamou A.BMJ Glob Health. 2025 Dec 23;10(12):e021439. doi: 10.1136/bmjgh-2025-021439.PMID: 41436186

Design and Application of a Multi-Epitope ACE2 Antigen for Detection of Autoantibodies in Post-COVID-19 Diagnosed Type 1 Diabetes.

Marzban M, Ahmadi N, Sotoodehnejadnematalahi F, Gholami A.Immunol Lett. 2025 Dec 30:107127. doi: 10.1016/j.imlet.2025.107127. Online ahead of print.PMID: 41478466

Transcriptional investigation of immune gene expression dynamics in Rohu (Labeo rohita) in response to killed Flavobacterium columnare vaccine.

Akash JS, Bedekar MK, Rajendran KV, Tripathi G, Valsalam A, Krishna G.Mol Biol Rep. 2025 Dec 29;53(1):236. doi: 10.1007/s11033-025-11398-y.PMID: 41460362

A Novel Prophylaxis Strategy Using Ecotin as A Promising Adjuvant for Fc-RBD Fusion Protein Vaccine of SARS-CoV-2.

Sun Y, Zheng R, Li D, Fang Y, Zhang L, Yang X, Yu W, Tu Y, Lu D, Li T, Luo D, Wang H.Immunology. 2025 Dec 28. doi: 10.1111/imm.70092. Online ahead of print.PMID: 41456870

High-Dose vs Standard-Dose Influenza Vaccine in Older Adults With Atrial Fibrillation: A Prespecified Analysis of the DANFLU-2 Trial.

Espersen C, Johansen ND, Modin D, Loiacono MM, Harris RC, Dufournet M, Larsen CS, Larsen L, Wiese L, Dalager-Pedersen M, Claggett BL, Bartholdy KV, Bernholm KF, Borchsenius JIH, Davidovski FS, Davodian LW, Dons M, Duus LS, Fussing FH, Reimer Jensen AM, Landler NE, Femerling Langhoff AC, Lassen MCH, Nielsen AB, Ottosen CI, Sengeløv M, Skaarup KG, Solomon SD, Landray MJ, Gislason GH, Køber L, Sivapalan P, Martel CJ, Jensen JUS, Biering-Sørensen T.J Am Coll Cardiol. 2025 Dec 23;86(25):2651-2655. doi: 10.1016/j.jacc.2025.09.1578. Epub 2025 Nov 26.PMID: 41295941

Influence of area-level social vulnerability on all-cause pneumonia, all-cause acute otitis media, and invasive pneumococcal disease incidence among Medicaid-enrolled children.

Mohanty S, Barna M, Cassell K, Cossrow N, Fiduccia PC, Smith-Howell E, McGuinn VC, Evans A, Keshaviah A, Shanmugam P, Chatrath S, Delannoy C, Feemster KA, Weissburg L, Zurovac J.Pneumonia (Nathan). 2025 Dec 25;17(1):35. doi: 10.1186/s41479-025-00186-8.PMID: 41444934

Improving Vaccination Rates by Connecting Families to Community Resources.

Arthur J, Terhaar AS, Huang J, LaBarge G, Barnidge E.Clin Pediatr (Phila). 2025 Dec 29:99228251404282. doi: 10.1177/00099228251404282. Online ahead of print.PMID: 41466401

Zeolitic Imidazolate Frameworks Allows for the Thermal Stabilization of Live Viral Vaccine in the Absence of Lyophilization.

Talbot A, de Koning Ward TF, Bruce K, Singh R, Sutton A, Doherty C, Layton D.ACS Omega. 2025 Dec 9;10(50):61339-61354. doi: 10.1021/acsomega.5c05733. eCollection 2025 Dec 23.PMID: 41476566

Clinical and molecular characterization of a fulminant meningococcemia case in an adult caused by Neisseria meningitidis serogroup Y clonal complex 23 strain in China.

Liang Y, Xu L, Liu S, Liang Z, Lin B, Ye J, Nie S.Diagn Microbiol Infect Dis. 2025 Dec 24;114(3):117242. doi: 10.1016/j.diagmicrobio.2025.117242. Online ahead of print.PMID: 41483663

Prevalence and risk factors of stillbirths among pregnant women from twelve high-volume birthing facilities of Karachi, Pakistan: a longitudinal cohort study.

Siddiqi DA, Muneer MZ, Iftikhar S, Shah MT, Dharma VK, Miraj F, Mehmood M, Sodhar IA, Malik FR, Chandir S.BMC Pregnancy Childbirth. 2025 Dec 30. doi: 10.1186/s12884-025-08288-3. Online ahead of print.PMID: 41469596

Mapping the disparities in childhood immunization status and determinants in East Africa using ordinal logistic regression analysis.

Workie DL, Dires AA, Teklie AK, Wudu TK.Sci Rep. 2025 Dec 29;15(1):44727. doi: 10.1038/s41598-025-28853-2.PMID: 41462497

Immune memory assessment three years following a single dose of hepatitis a vaccine at 12, 13 or 19 months of age.

Febriani Y, Ursu MM, Sauvageau C, Kegbevi KB, Quach C, Desjardins M, Bestman-Smith J, Gilca V, Brousseau N.Vaccine. 2025 Dec 25;73:128144. doi: 10.1016/j.vaccine.2025.128144. Online ahead of print.PMID: 41453243

In silico profiling of the plasmodium knowlesi 32 kDa antigen: Diversity, epitope prediction, and structural modeling.

Saif A, Baruah P, Alghamdi JM, Acharyya R, Han JH, Lau YL, Ahmed MA.Infect Genet Evol. 2025 Dec 31:105871. doi: 10.1016/j.meegid.2025.105871. Online ahead of print.PMID: 41482080

HPV vaccination hesitancy and acceptance among parents in Saxony-Anhalt, Germany: the role of gender, awareness and fear.

Gennari P, Schlund D, Mészáros J, Ignatov A.BMC Public Health. 2025 Dec 23. doi: 10.1186/s12889-025-26061-1. Online ahead of print.PMID: 41437343

Safety of COVID-19 vaccines among pregnant individuals in Quebec, Canada: a population-based retrospective cohort study from the Canadian Immunization Research Network.

Kiely M, Diendere E, Dialahy I, Perrault-Sullivan G, Brousseau N, Wei SQ, Talbot D, Boutin A, Quach C, Jorgensen S, Boucoiran I.BMJ Open. 2025 Dec 23;15(12):e106494. doi: 10.1136/bmjopen-2025-106494.PMID: 41436261

Estimating Vaccine Effectiveness Against Symptomatic Infection From Its Effectiveness Against Asymptomatic Infection.

Shahar E.Clin Infect Dis. 2025 Dec 31:ciaf735. doi: 10.1093/cid/ciaf735. Online ahead of print.PMID: 41474455

A multinational cross-sectional study on human papillomavirus and cervical cancer knowledge, vaccination attitudes, and risk factors in the Middle East.

A Amer A, Altabbaa H, Sh Ramadan M, Abdul-Hafez HA, Said HS, Khan M, Al-Jabri MM, Haj-Salim DJ, Razzouk Q, A S Amer M, A Amer S; Data Collector Group.Sci Rep. 2025 Dec 29. doi: 10.1038/s41598-025-30866-w. Online ahead of print.PMID: 41461871

Research note: the putative nuclear localization signal of duck circovirus type 1 cap protein is critical for VLP assembly.

Lei X, Wei P, Wang D, Jiang Y, Yu W, Wang A, Wu Z, Zhu S.Poult Sci. 2025 Dec 28;105(2):106348. doi: 10.1016/j.psj.2025.106348. Online ahead of print.PMID: 41477965

Vaccine mandates impair voluntariness, even if consent-receivers do not.

Saunders B.J Med Ethics. 2025 Dec 24:jme-2025-111463. doi: 10.1136/jme-2025-111463. Online ahead of print.PMID: 41443994

Patentes registradas en Patentscope

Estrategia de búqueda: (Vaccine) AND DP:([22.12.2025 TO 31.12.2025]) *as the publication date 36 records.*

1.4670732VERFAHREN ZUR BEHANDLUNG VON TUMOREN MIT EINER KOMBINATION AUS ONKOLYTISCHEM VIRUSIMPFSTOFF UND IMMUNZELLEN

EP - 31.12.2025

Clasificación Internacional A61K 39/00Nº de solicitud 24777774Solicitante JOINT BIOSCIENCES SH LTDInventor/a ZHOU GUOQING

The invention relates to the technical field of biomedicine, and specifically to a method for treating tumors using a combination of an oncolytic virus vaccine and immune cells. The method specifically comprises the following steps: treating a tumor by using a combination of immune cells and an oncolytic virus vaccine; the oncolytic virus vaccine comprising a recombinant oncolytic virus expressing a tumor antigen, and used for targeting tumor cells; the immune cells are embedded in an antigen receptor paired with the tumor antigen, and are used for killing or destroying tumor cells of a target; and the recombinant oncolytic virus comprises an M protein, G protein, N protein, P protein, and L protein, following site-directed mutagenesis. The combination of the oncolytic virus vaccine and the immune cells for killing or destroying the tumor antigen is used for attacking and killing tumor cells, and the tumor antigen expressed by the oncolytic virus vaccine can not only guide the immune cells to reach the center of a target tumor tissue, but the combination of the oncolytic virus and immune cells to kill tumor cells achieves a curative effect where 1+1 is greater than 2, with a maximum tumor cell killing rate being able to reach 100%.

2.WO/2025/263563RSV FG CHIMERIC MRNA VACCINE

WO - 26.12.2025

Clasificación Internacional C12N 15/40Nº de solicitud PCT/JP2025/022055Solicitante KM BIOLOGICS CO., LTD.Inventor/a YAMAUE, Ryo

In the present invention, there is discovered a novel mRNA vaccine for preventing respiratory syncytial virus (RSV) infections, the mRNA vaccine being superior in terms of immunogenicity and pharmacological efficacy compared with RSV FG chimeric protein vaccines each comprising RSV F and G proteins and mRNA vaccines which have been produced on the basis of Japanese Patent No. 7253034 (Patent Document 7). In the present invention, an RSV FG chimeric mRNA vaccine is produced by inserting a highly conserved domain of the RSV G protein into a basic skeleton that is formed by linking a transmembrane region to an RSV F protein ectodomain. As a result of performing evaluation on immunogenicity and pharmacological efficacy, it has been confirmed that the immunogenicity and pharmacological efficacy of the RSV FG chimeric mRNA vaccine of the present invention are superior compared with those of the RSV FG chimeric protein vaccines and mRNA vaccines which have been produced on the basis of Patent Document 7.

3.WO/2025/265127IMMUNOGENIC TRIMERS

WO - 26.12.2025

Clasificación Internacional A61K 39/21Nº de solicitud PCT/US2025/034803Solicitante INTERNATIONAL AIDS VACCINE INITIATIVE, INC.Inventor/a WYATT, Richard, T.

The HIV-1 envelope glycoprotein (Env) is the sole neutralizing determinant on the viral surface. The Env gpl20 and gp41 subunits mediate receptor binding and membrane fusion. HIV- 1 neutralizing antibodies can be generated following immunization via expressing membrane-bound Env anchored on the cell-surface genetically using the natural HIV gp41 transmembrane (TM) spanning domain. Inventors used "native flexibly linked" (NFL) stabilized soluble trimers that are both near-native in conformation and cleavage-independent. The NFL construct was genetically fused to the HIV TM domain using a short linker or restoring the native membrane external proximal region to express the full HIV Env ectodomain on the plasma membrane. Both forms of cell-surface NFL trimers, without and with the MPER, displayed favorable antigenic profiles when

expressed from plasmid DNA or mRNA. Inoculation of rabbits with mRNA lipid nanoparticles (LNP) expressing membrane-bound stabilized HIV Env NFL trimers generated tier 2 neutralizing antibody serum titers in immunized animals.

4.4665313IMPFSTOFFZUSAMMENSETZUNG MIT EINEM SYSTEM ZUR ABGABE EINES INAKTIVIERTEN GESAMTEN BAKTERIUMS ÜBER KATIONISCHE POLYSACCHARIDNANOPARTIKEL OHNE ADJUVANS

EP - 24.12.2025

Clasificación Internacional A61K 9/51Nº de solicitud 24705168Solicitante VAXINANOInventor/a BETBEDER DIDIER

The invention relates to the field of vaccine compositions. The invention more particularly relates to a prophylactic vaccine composition that is intended for mammals and birds and comprises a killed whole bacterium, said bacterium being covered with a cationic agent, in particular cationic nanoparticles.

5.WO/2025/264825ELECTRON BEAM (EBEAM)-KILLED MULTI-BACTERIAL VACCINES

WO - 26.12.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/US2025/034205Solicitante BOARD OF TRUSTEES OF THE UNIVERSITY OF ARKANSASInventor/a ALRUBAYE, Adnan

The present disclosure pertains to an avian vaccine that includes a plurality of electron beam (eBeam) - treated bacteria. The present disclosure also pertains to methods of immunizing an avian subject by administering an avian vaccine of the present disclosure to the avian subject. The present disclosure also pertains to methods of making an avian vaccine of the present disclosure by exposing a plurality of bacteria to eBeam treatment.

6.WO/2025/263616EFFICIENT VACCINE

WO - 26.12.2025

Clasificación Internacional C12N 15/62Nº de solicitud PCT/JP2025/022314Solicitante VLP THERAPEUTICS JAPAN, INC.Inventor/a AKAHATA, Wataru

Provided herein is an isolated polynucleotide, which encodes alphavirus non-structural proteins nsp1, nsp2, nsp3 and nsp4 and a polypeptide comprises CD8+ T cell epitope. Provided herein is also a bivalent alphavirus replicon vaccine, which is a combination of a first polynucleotide which encodes alphavirus non-structural proteins nsp1, nsp2, nsp3 and nsp4 and an antigenic peptide and a second polynucleotide which encodes alphavirus non-structural proteins nsp1, nsp2, nsp3 and nsp4 and a CD8+ T cell epitope. The vaccine is useful against virus infection, especially, COVID-19 or SARS-CoV-2 infection, the treatment of a cancer and/or an inflammatory disease.

7.20250391576METHODS FOR PREDICTING AND SELECTING NEOANTIGENS

US - 25.12.2025

Clasificación Internacional G16H 50/50Nº de solicitud 19242354Solicitante Natera, IncInventor/a Robert

BURNS

A system and corresponding method are provided for identifying a subpopulation of cancer patients who are immunotherapy respondents. An effective method of assessing neoantigen presentation is provided. A vaccine composition is also provided. The vaccine composition is prepared by feeding data for a subject with a type of cancer into a predictive model and scoring neoantigens that occur in data for the subject for one or more parameters. One or more vaccine compositions to be administered to the subject are prepared for one or more somatic mutations for one or more neoantigens that satisfy an immune stimulation threshold.

8.20250387467SARS-COV-2 LACKING THE ENVELOPE PROTEIN AS AN ATTENUATED VACCINE VIRUS AGAINST COVID-19

US - 25.12.2025

Clasificación Internacional A61K 39/215Nº de solicitud 18881302Solicitante Wisconsin Alumni Research FoundationInventor/a Yoshihiro Kawaoka

An isolated nucleic acid comprising a recombinant coronavirus genome having a genetic modification that inhibits or prevents expression of coronavirus envelope (E) protein and/or M protein, a vaccine comprising the recombinant genome and methods of using the vaccine are provided.

9.20250387465RSV VACCINE AS WELL AS PREPARATION METHOD THEREOF AND USE THEREOF

US - 25.12.2025

Clasificación Internacional A61K 39/155Nº de solicitud 19245442Solicitante Beijing Genevax Biotechnology Co., Ltd.Inventor/a Xiliang Wang

Provided are an RSV vaccine as well as a preparation method therefor and the use thereof. A Pre-F related sequence of an RSV and ferritin nanoparticles are subjected to mutation design, and a Pre-F mutant protein and a ferritin mutant are fused and expressed in eukaryotic cells, so as to obtain ferritin-PreF fusion protein nanoparticles having multiple Pre-F displayed on the surfaces in a centralized manner, and the amino acid sequence of the ferritin-PreF fusion protein nanoparticles is any one of SEQ ID No. 20-27.

10.WO/2025/261392ENGINEERED GRAM-NEGATIVE ROD-SHAPED BACTERIUM AND USE THEREOF IN VACCINE

WO - 26.12.2025

Clasificación Internacional C12N 1/21Nº de solicitud PCT/CN2025/101711Solicitante SHANGHAI INSTITUTE OF IMMUNITY AND INFECTION, CHINESE ACADEMY OF SCIENCESInventor/a CHAO, Yanjie

Provided are a novel attenuating strategy for Klebsiella pneumoniae and a use thereof in a vaccine. Specifically, provided is an engineered Gram-negative rod-shaped bacterium. The gene of an endogenous phospholipid transfer system of the Gram-negative rod-shaped bacterium is knocked out, so that the pathogenicity of hypervirulent Klebsiella pneumoniae can be greatly reduced; and the attenuated strain can be used for preventing and/or treating Gram-negative rod-shaped bacterial infections or diseases related thereto, and inhibiting the expression of the gene or protein (such as one or more of MlaA, MlaB, MlaC, MlaD, MlaE, and MlaF) of the phospholipid transfer system, and can also be used for preventing and/or treating Gram-negative rod-shaped bacterial infections or diseases related thereto.

11.12502428IMMUNOTHERAPEUTIC COMPOSITION FOR PREVENTION OF OBESITY, NONALCOHOLIC

FATTY LIVER DISEASE AND HYPERTRIGLYCERIDEMIA, AND METHODS OF USE AND PREPARATION THEREOF

US - 23.12.2025

Clasificación Internacional A61K 39/395Nº de solicitud 19194986Solicitante Utopia Therapeutics Pvt Ltd.Inventor/a Uday Saxena

This disclosure provides a vaccine including a peptide with the amino acid sequence of SEQ ID NO:1; a nucleotide having the sequence of SEQ ID NO:2; or a ribonucleotide having the sequence of SEQ ID NO:3. In certain embodiments, the vaccine further comprises a buffer and/or an adjuvant.

12.4665389IMPFSTOFF GEGEN HÄMORRHAGISCHE KANINCHENKRANKHEIT UND VERWENDUNGEN DAVON

EP - 24.12.2025

Clasificación Internacional A61K 39/12Nº de solicitud 24703583Solicitante HIPRA SCIENT S L UInventor/a NADAL FULLA GUILLEM

The present invention relates to an immunogenic or vaccine composition which provides protection against rabbit hemorrhagic disease (RHD) caused by rabbit hemorrhagic disease virus of variant strain 1 (RHDV-1) and of variant strain 2 (RHDV-2) and uses thereof.

13.WO/2025/262123VETERINARY VACCINES AGAINST ENTERIC DISEASES

WO - 26.12.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/EP2025/067073Solicitante INTERVET INTERNATIONAL B.V.Inventor/a ROOSMALEN VAN, Markus, Hendrikus

The present invention relates to a combination vaccine comprising the antigens: a) *Cryptosporidium parvum* gp40; b) inactivated bovine rotavirus; c) inactivated bovine coronavirus; and d) *E. coli* fimbrial adhesins F5 and F41. In addition, the invention relates to methods for the preparation of the vaccine, methods for vaccinating ruminants against infection by *Cryptosporidium parvum*, bovine rotavirus, bovine coronavirus and *E. coli*, and to a kit-of-parts at least comprising a container comprising the at least one antigen according to the invention.

14.4667485IMPFSTOFF ZUR VERWENDUNG BEI DER PROPHYLAXE UND/ODER BEHANDLUNG EINER ERKRANKUNG

EP - 24.12.2025

Clasificación Internacional C07K 14/47Nº de solicitud 25196853Solicitante INPROTHER APSInventor/a HOLST PETER

The present invention relates to an adenoviral vector capable of encoding a virus-like particle (VLP), said VLP displaying an inactive immune-suppressive domain (ISD). The vaccine of the invention shows an improved immune response from either of both of the response pathways initiated by CD4 T cells or CD8 T cells.

15.WO/2025/262124ADJUVANTED VETERINARY VACCINES AGAINST ENTERIC DISEASES

WO - 26.12.2025

Clasificación Internacional A61K 39/012Nº de solicitud PCT/EP2025/067074Solicitante INTERVET INTERNATIONAL B.V.Inventor/a ROOSMALEN VAN, Markus, Hendrikus

The present invention relates to a vaccine composition comprising non live antigens from: a) *E.coli*; b) bovine rotavirus; c) bovine coronavirus; wherein the antigens are formulated in an adjuvant having a continuous phase that is aqueous. In addition, the invention relates to methods for the preparation of the vaccine composition and to methods for vaccinating ruminants against infection by bovine rotavirus, bovine coronavirus and *E. coli*.

16.20250387462LIPID NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS AND VACCINE FOR THE PREVENTION OF TUBERCULOSIS OR OTHER MYCOBACTERIAL INFECTIONS

US - 25.12.2025

Clasificación Internacional A61K 39/04Nº de solicitud 19244650Solicitante Akagera Medicines, Inc.Inventor/a Daryl C. Drummond

Aspects of the present disclosure provide for improved *Mycobacterium tuberculosis* vaccine compositions of ionizable lipid nanoparticles for the delivery of immunogenic nucleic acids to cells. Anionic phospholipids, including phosphatidylserine and phosphatidylglycerol are included in the lipid nanoparticles to increase the transfection efficiency in dendritic cells. In some embodiments, the incorporation of mono-unsaturated alkyl chain analogs in dimethylaminopropyl-dioxolane or heterocyclic ketal ionizable lipids in the formulation provided high levels of transfection in human dendritic cells, compared to other ionizable lipids in the same family, and demonstrated good stability to oxidative damage. Other aspects of the present disclosure provide mRNA that encodes for concatenated peptides encoding for multiple MHC-II tuberculosis epitopes, and optionally includes a second mRNA encoding for concatenated MHC-I tuberculosis epitopes.

17.WO/2025/260241ANTIGEN-ANTIBODY COMPLEX VACCINE FOR ENHANCING IMMUNE RESPONSE IN HEPATITIS B PATIENT AND PREPARATION METHOD THEREFOR

WO - 26.12.2025

Clasificación Internacional A61K 39/42Nº de solicitud PCT/CN2024/099879Solicitante FUDAN UNIVERSITYInventor/a YUAN, Zhenghong

Provided are an antigen-antibody complex vaccine for enhancing an immune response in a chronic hepatitis B patient and a preparation method therefor. Specifically, provided is an antigen-antibody complex for inducing an immune response in a chronic hepatitis B patient. The complex comprises a hepatitis B surface antigen and an anti-HBsAg monoclonal antibody, wherein the hepatitis B surface antigen binds to the anti-HBsAg monoclonal antibody. The complex can induce the immune response in the chronic hepatitis B patient, and can also prevent and/or treat chronic hepatitis B.

18.WO/2025/265101LIPID NANOPARTICLES FOR DELIVERY OF VACCINE FOR PREVENTION OF TUBERCULOSIS

WO - 26.12.2025

Clasificación Internacional A61K 39/04Nº de solicitud PCT/US2025/034670Solicitante AKAGERA

MEDICINES, INC.Inventor/a DRUMMOND, Daryl C.

Aspects of the present disclosure provides for improved mycobacterium tuberculosis vaccine compositions of ionizable lipid nanoparticles for the delivery of immunogenic nucleic acids to cells. Anionic phospholipids, including phosphatidylserine and phosphatidylglycerol are included in the lipid nanoparticles to increase the transfection efficiency in dendritic cells. In some embodiments, the incorporation of mono-unsaturated alkyl chain analogs in dimethylaminopropyl-dioxolane or heterocyclic ketal ionizable lipids in the formulation provided high levels of transfection in human dendritic cells, compared to other ionizable lipids in the same family, and demonstrated good stability to oxidative damage. Other aspects of the present disclosure provide mRNA that encodes for concatenated peptides encoding for multiple MHC-II tuberculosis epitopes, and optionally includes a second mRNA encoding for concatenated MHC-I tuberculosis epitopes.

19.WO/2025/264874MOSAIC ALPHAVIRUS-PSEUDOVIRUS FOR RNA GENE DELIVERY AND MULTIVALENT ANTIGEN DISPLAY

WO - 26.12.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2025/034280Solicitante VIRONGY BIOSCIENCES INC.Inventor/a HETRICK, Brian

An injectable, oral or nasal spray multivalent vaccine treats or prevents infection with a coronavirus, and/or influenza, and/or respiratory syncytial virus (RSV), or other viruses such as African swine fever virus (ASFV). The multivalent vaccine comprises a hybrid pseudovirus assembled from any of the following combinations of primary proteins: coronavirus S, and/or influenza HA and/or RSV fusion protein, and/or ASFV p12 plus any of the following secondary proteins from either: coronavirus N, M, and E, and/or Influenza NA,M1,M2 and NP and/or RSV Matrix, G, and Nucleocapsid, and/or ASFV p35, p27, p14. These hybrid pseudoviruses package an alphaviral vector carrying RNA encoding multiple receptor binding domain regions of the attachment or fusion proteins of these viruses, wherein the hybrid pseudovirus and alphaviral vector are combined in an injectable, oral, or nasal spray formulation.

20.WO/2025/264964VACCINES AGAINST *TENACIBACULUM FINNMARKENSE*

WO - 26.12.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/US2025/034443Solicitante ZOETIS SERVICES LLCInventor/a LUNHEIM, Ane Sandtrø

A vaccine comprising a *Tenacibaculum* antigen and methods of using said vaccine to protect salmonids against clinical signs of *Tenacibaculum* infection are provided.

21.4667015INAKTIVIERTE IMPFSTOFFZUBEREITUNG UND INFEKTIONSPRÄVENTIONSVERFAHREN

EP - 24.12.2025

Clasificación Internacional A61K 39/09Nº de solicitud 23922655Solicitante KYORITSU SEIYAKU CORPInventor/a UCHIYAMA AI

To isolate and identify a novel Lactococcus garvieae, and provide effective prevention means for diseases caused by the bacterium. Provided is an inactivated vaccine preparation against piscine streptococcosis

caused by Lactococcus garvieae, comprising inactivated cells of Lactococcus garvieae that are negative for agglutination with anti-type I serum and anti-type II serum in a viable state. Occurrence, transmission, and spread of new type of streptococcosis that cannot be prevented by conventional inactivated vaccines against Lactococcus garvieae can be effectively prevented.

22.4666074HÄMOLYSINANTIGENE UND IMPFSTOFFDARSTELLUNGEN FÜR BAKTERIELLE INFEKTIONEN

EP - 24.12.2025

Clasificación Internacional G01N 33/569Nº de solicitud 24757790Solicitante BAYLOR COLLEGE MEDICINEInventor/a XING YIKUN

Embodiments of the disclosure include methods of treating, preventing, reducing the risk of, delaying the onset of, and/or reducing the severity of an infection (including pathogenic) in an individual infected with a bacteria from the Gammaproteobacteria Class. In specific embodiments, the methods comprise the step of administering to the individual an effective amount of an immunogenic composition comprising a non-acylated/inactive form alphahemolysin (HlyA) and/or a non-acylated/inactive form, or functional fragment(s) of either. In specific embodiments, the individual is also provided a composition comprising SinH or a functional fragment thereof.

23.WO/2025/263617CONJUGATE OF CHOLESTEROL AND TLR7 AGONIST, AND DRUG COMPOSITION CONTAINING SAME

WO - 26.12.2025

Clasificación Internacional C07J 43/00Nº de solicitud PCT/JP2025/022316Solicitante SUMITOMO PHARMA CO., LTD.Inventor/a BAN, Hitoshi

The present invention relates to a conjugate of cholesterol and a TLR7 agonist that is useful as a drug, a pharmaceutically acceptable salt thereof, and a drug composition or cancer treatment vaccine containing the same as an active ingredient.

24.WO/2025/264937LIPID NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS AND VACCINES

WO - 26.12.2025

Clasificación Internacional A61K 9/1272Nº de solicitud PCT/US2025/034395Solicitante AKAGERA MEDICINES, INC.Inventor/a DRUMMOND, Daryl C.

Aspects of the present disclosure provides for improved vaccine compositions of ionizable lipid nanoparticles for the delivery of immunogenic nucleic acids to cells. Anionic phospholipids, including phosphatidylserine and phosphatidylglycerol are included in the lipid nanoparticles to increase the transfection efficiency in dendritic cells. In some embodiments, the incorporation of mono-unsaturated alkyl chain analogs in dimethylaminopropyl-dioxolane or heterocyclic ketal ionizable lipids in the formulation provided high levels of transfection in human dendritic cells, compared to other ionizable lipids in the same family, and demonstrated good stability to oxidative damage.

25.3247388REKOMBINANT HUMAN/BOVIN PARAINFLUENZAVIRUS 3 (B/HPIV3), DER UDTRYKKER ET

KIMÆRISK RSV/BPIV3 F-PROTEIN, OG ANVENDELSER DERAF

DK - 22.12.2025

Clasificación Internacional A61K 39/12Nº de solicitud 16702318Solicitante The United States of America, as represented by The Secretary, Department of Health and Human ServicesInventor/a COLLINS, Peter

Recombinant paramyxoviruses including a viral genome encoding a heterologous gene are provided. In several embodiments, the recombinant paramyxovirus is a recombinant parainfluenza virus, such as a recombinant PIV3 including a viral genome encoding a heterologous respiratory syncytial virus F ectodomain linked to the transmembrane domain and the cytoplasmic tail of the F protein from the PIV3. Nucleic acid molecules including the genome of a recombinant paramyxoviruses are also provided. The recombinant viruses may advantageously be used in vaccine formulations, such as for vaccines against parainfluenza virus and respiratory syncytial virus.

26.WO/2025/262270CULTURE MEDIA AND METHODS FOR CULTIVATING *BORDETELLA* BACTERIA

WO - 26.12.2025

Clasificación Internacional C12N 1/20Nº de solicitud PCT/EP2025/067371Solicitante INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALEInventor/a MIELCAREK, Nathalie

The present invention relates to culture media and methods for cultivating *Bordetella* bacteria, particularly for producing vaccines. In particular, the inventors investigated the effects of temperature and alkaline earth metals and transition metals compositions on the growth and virulence factor production of *B. pertussis* and *B. bronchiseptica.* They found that both bacteria grew better and expressed more antigens when cultured in MILNEZ medium at 35°C, which mimics the nasal environment of healthy individuals. They also showed that *B. pertussis* genes were differentially regulated by these conditions. Therefore, the present invention provides a new culture medium that mimics growth conditions in the nose. The new medium includes a source of carbon, nitrogen, salts, alkaline earth metals and specific transitions metals at concentrations close to those in mammalian nasal fluid cavity. The invention aims to improve the growth of *Bordetella* bacteria for vaccine production.

27.20250387471METHODS AND COMPOSITIONS FOR MODULATION OF IMMUNE RESPONSES

US - 25.12.2025

Clasificación Internacional A61K 39/385Nº de solicitud 18879670Solicitante THE UNIVERSITY OF CHICAGOInventor/a Aaron ESSER-KAHN

Aspects of the present disclosure relate to functionalized polymers and methods of use thereof. Certain aspects are directed to polymers comprising adjuvants for use in stimulating an immune response. In some cases, provided are polymers comprising inflammasome activators, in some cases also comprising a TLR agonist, which may be formulated in a pharmaceutical composition. Also disclosed are methods for improving vaccine efficacy and immunotherapy efficacy. Certain aspects relate to compositions and methods for stimulation of CD4+ and/or CD8+ T cell responses in a subject.

28.4670711LIPOSOM, VERFAHREN ZUR HERSTELLUNG EINES LIPOSOMS, INTRANASALE ZUSAMMENSETZUNG MIT EINEM LIPOSOM, VERFAHREN ZUR HERSTELLUNG EINER INTRANASALEN ZUSAMMENSETZUNG, KIT UND VERWENDUNG DER ZUSAMMENSETZUNG

EP - 31.12.2025

Clasificación Internacional A61K 9/127Nº de solicitud 23923231Solicitante ROSSI BERGMANN BARTIRAInventor/a DE JESUS SOUSA BATISTA ARIANE

This invention relates to liposomes having mucopenetrating action and rates of incorporation of a retinoid, for example retinoic acid (RA), greater than those obtained in solid lipid nanoparticles (0.1%), thus increasing the uptake thereof via the nasal mucosa, and to the method for preparing a liposome. The present invention also relates to an intranasal composition, for example a vaccine, comprising said liposome, which is more effective than existing vaccines, the method for preparing same and the use thereof for preventing illnesses.

29.WO/2025/260633RSV AND HMPV FUSION (F) PROTEIN AND USE THEREOF

WO - 26.12.2025

Clasificación Internacional C07K 19/00Nº de solicitud PCT/CN2024/137325Solicitante XIAMEN INNOVAX BIOTECH CO., LTD.Inventor/a HUANG, Wenjie

Provided are a truncated respiratory syncytial virus (RSV) F protein or a variant thereof, and a fusion protein comprising the truncated RSV F protein or the variant thereof, and a truncated human metapneumovirus (hMPV) F protein or a variant thereof. Also provided is uses of the fusion protein and a vaccine, immunogenic composition, kit, and pharmaceutical composition comprising the fusion protein in prevention and/or treatment of RSV and/or hMPV infections or diseases and/or symptoms caused by RSV and/or hMPV infections.

30.WO/2025/260848AN IMMUNOGENIC COMPOSITION FOR THE PREVENTION AND TREATMENT OF STAPHYLOCOCCUS AUREUS INFECTION

WO - 26.12.2025

Clasificación Internacional A61K 39/085Nº de solicitud PCT/CN2025/081731Solicitante NANJING CHENGSHI BIOMEDICAL TECHNOLOGY CO., LTD.Inventor/a HAN, Tiyun

The present invention relates to a novel immunogenic composition, fusion protein, recombinant vaccine, and molecular architecture design and application for the prevention and treatment of Staphylococcus aureus infection. The present invention provides a novel fusion molecular architecture comprising fusion proteins encoded by three genes, Tuf, SpxA, and Hu genes, or comprising fusion proteins encoded by two genes, Hla_H35L and EsxB genes. The present invention has discovered that the novel fusion molecule has good immunogenicity and can provide effective immunoprotective effects, and can clear Staphylococcus aureus colonization in some individuals, which can be used for the development of nucleic acid vaccines or subunit vaccines. The novel molecular architecture of the present invention can effectively enhance the expression level of fusion proteins, thereby further improving the immunoprotective effects. The present invention can be applied to the production and development of immune drugs for Staphylococcus aureus nucleic acid vaccines in humans and animals, and has broad application prospects.

31.4669349EPITOP AUS SARS-COV-2 N-PROTEIN, ANTIGEN MIT DEM EPITOP, VERWENDUNGEN DAVON UND VERFAHREN ZUM NACHWEIS VON CORONAVIRUSBEDINGTEN ERKRANKUNGEN

EP - 31.12.2025

Clasificación Internacional A61K 39/12Nº de solicitud 24721787Solicitante INST IMMUNOLOGII I TERAPII DOSWIADCZALNEJ IM LUDWIKA HIRSZFELDA POLSKIEJ AKADEMII NAUKInventor/a RAZIM AGNIESZKA

Epitopes originating from SARS-CoV-2 N protein, vaccine antigens specific for SARS-CoV-2 containing the epitopes useful in the treatment or prevention of disease caused by coronavirus as well as a method for detecting disease caused by coronavirus, in particular COVID-19, especially with an acute course, are disclosed.

32.4669759MULTICISTRONISCHER IMPFSTOFF UND VERFAHREN ZU SEINER HERSTELLUNG UND VERWENDUNG

EP - 31.12.2025

Clasificación Internacional C12N 15/861Nº de solicitud 24761096Solicitante OCUGEN INCInventor/a UPADHYAY ARUN KUMAR

The present disclosure provides multi ci str onic vaccines and method for producing and using the same in preventing infection or transmission, or reducing severity of disease caused by influenza and/or SARS-Cov-2 virus in a subject. Multicistronic vaccines of the disclosure can be administered via intramuscular, intranasal, or inhalation route. In one particular embodiments, the disclosure provides a recombinant adenovirus comprising at least two different extraneous oligonucleotides that are capable of stimulating an immune response in a subject. Each of the oligonucleotide independently comprises an oligonucleotide that encodes either influenza or SARS-Cov-2 virus antigens.

33.20250387472ADJUVANT AND VACCINE COMPOSITIONS

US - 25.12.2025

Clasificación Internacional A61K 39/39Nº de solicitud 19029595Solicitante Advanced BioAdjuvants, LLCInventor/a JAY D. GERBER

Methods are provided for preparing and delivering an adjuvant for vaccines including lecithin, polymer and one or more additives. The polymer is preferably polyacrylic acid-based. The additive is preferably one or more of a glycoside and a sterol. The method of preparation includes hydrating lecithin and a polymer in saline or water and mixing the lecithin and polymer to form the adjuvant. Additives can be included prior to or after hydration of the lecithin and polymer.

34.WO/2025/262023PROTEIN OLIGOMERS FOR ACTIVE IMMUNIZATION

WO - 26.12.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/EP2025/066857Solicitante HEIDELBERG BIOTECH GMBHInventor/a ABDOLLAHI, Amir

The present invention pertains to protein oligomers for active immunization. Specifically, the invention relates to protein oligomers comprising at least a first monomer and a second 5 monomer, said at least first and second monomer comprising, in N- to C-terminal order, at least one first RBD, an immunoglobulin Fc (Ig Fc), and at least one second RBD, wherein a) Ig Fc has enhanced affinity for the neonatal Fc receptor (FcRn) at mucosal pH, compared to wildtype Ig Fc; and b) RBD is a receptor binding domain from or derived from SARS-CoV-2 spike protein, wherein the receptor binding domain comprises the amino acid sequence of SEQ ID NO. 13, or a fragment thereof, or an amino acid sequence having at least 80%, 85%, 90%, or 95%

sequence identity to SEQ ID NO. 13. The invention further relates to a vaccine comprising said protein oligomer, preferably for use in active immunization and/or booster vaccination in a subject.

35.4669352ANTIKÖRPER GEGEN POX-VIREN

EP - 31.12.2025

Clasificación Internacional A61K 39/42Nº de solicitud 24759906Solicitante STATE OF ISRAEL ISRAEL INSTITUTE FOR BIOLOGICAL RESInventor/a MAZOR OHAD

The invention provides monoclonal antibodies which bind and neutralize pox viruses. The invention also provides pharmaceutical compositions comprising the antibodies, and combinations thereof, and their use in methods of prophylaxis, treatment, or amelioration of infections caused by pox viruses, and for reducing side effects of vaccinia-based vaccines.

36.WO/2025/260634RSV AND HMPV FUSION F PROTEIN AND USE THEREOF

WO - 26.12.2025

Clasificación Internacional C07K 19/00Nº de solicitud PCT/CN2024/137337Solicitante XIAMEN INNOVAX BIOTECH CO., LTD.Inventor/a HUANG, Wenjie

Provided are an epitope or epitope peptide of a respiratory syncytial virus (RSV) F protein, and a fusion protein containing the epitope or epitope peptide and a truncated F protein of human metapneumovirus (hMPV) or a variant of the truncated protein. Further provided are the use of the fusion protein and of a vaccine, an immunogenic composition, a kit, and a pharmaceutical composition containing same in preventing and/or treating RSV and/or hMPV infection or diseases and/or symptoms caused by RSV and/or hMPV infection.

Patentes registradas en United States Patent and Trademark Office (USPTO)

Estrategia de búqueda: *vaccine.ti. AND @PD>="20251222"<=20251231 14 records*

Document ID	Title	Inventor	Applicant Name
US 12508308 B2	Influenza mRNA vaccines	Jasny; Edith et al.	CureVac SE
US 20250387462 A1	LIPID NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS AND VACCINE FOR THE PREVENTION OF TUBERCULOSIS OR OTHER MYCOBACTERIAL INFECTIONS	Drummond; Daryl C. et al.	Akagera Medicines, Inc.
US 20250387472 A1	ADJUVANT AND VACCINE COMPOSITIONS	GERBER; JAY D. et al.	Advanced BioAdjuvants, LLC

US 20250387466 A1	COMPOSITIONS OF NUCLEIC ACID NANOSTRUCTURES FOR VACCINES AND METHODS OF USE THEREOF	Bathe; Mark et al.	Massachusetts Institute of Technology
US 20250387467 A1	SARS-COV-2 LACKING THE ENVELOPE PROTEIN AS AN ATTENUATED VACCINE VIRUS AGAINST COVID-19	Kawaoka; Yoshihiro et al.	Wisconsin Alumni Research Foundation
US 20250387465 A1	RSV VACCINE AS WELL AS PREPARATION METHOD THEREOF AND USE THEREOF	Wang; Xiliang et al.	Beijing Genevax Biotechnology Co., Ltd.,Genevax (Langfang) Biotechnology Co., Ltd.,Genevax (Hebei) Biotechnology Co., Ltd
US 20250387425 A1	NOVEL PERSONAL NEOANTIGEN VACCINES AND MARKERS	HU; Landian et al.	ANDA BIOLOGY MEDICINE DEVELOPMENT (SHENZHEN) CO., LTD.
US 12502423 B2	Vaccine immunogens	Hill; Adrian Vivian Sinton et al.	OXFORD UNIVERSITY INNOVATION LIMITED,FUNDÃÇAO OSWALDO CRUZ
US 12502426 B2	Inactivated piscine orthoreovirus vaccine	Bijlsma; Johanna Jacoba Elisabeth et al.	Intervet Inc.
US 12502425 B2	Multivalent virus like particle vaccines	Garg; Himanshu et al.	Texas Tech University System
US 12502427 B2	Extracellular vesicles for vaccine delivery	Moniz; Raymond J. et al.	LONZA SALES AG
US 12502475 B2	Anti-vibration device for transporting a substance such as a messenger RNA vaccine	Santin; Jean-Jacques et al.	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE,UNIVERSITE POLYTECHNIQUE HAUTS-DE-FRANCE
US 12502422 B2	Therapeutic mRNA vaccine for malignancies	Iversen; Patrick et al.	ONCOCINE LLC
US 12503493 B2	Rabbit haemorrhagic disease virus (RHDV) vaccines	Young; Alan John	VST LLC

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