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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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Preparándonos para la próxima pandemia

En Tokio, se ha creado un nuevo centro de investigación para transformar las lecciones aprendidas de la COVID-19 en protección futura. Aquí, destacados científicos en virología, inmunología, inteligencia artificial, ingeniería, sociología y medicina clínica colaboran, creando un entorno donde las ideas fluyen con naturalidad desde el descubrimiento hasta la aplicación.

"Para la próxima pandemia, lo que importa es cuán preparado estará el mundo y con qué rapidez la ciencia pueda ofrecer soluciones que salven vidas."

«Nuestra misión es simple: salvar al mundo de las enfermedades infecciosas», afirma Yoshihiro Kawaoka, profesor de virología y director del nuevo centro de la Universidad de Tokio.

«Al reunir a mentes brillantes de diversas disciplinas, fomentamos el talento, impulsamos el descubrimiento y construimos la infraestructura para el desarrollo rápido de vacunas. La lección de la COVID-19 es clara: la rapidez y la confianza salvan vidas, y estamos trabajando para que ese futuro sea posible», añade.

Implementación de las lecciones

Decidido a actuar en función de las lecciones aprendidas, el gobierno japonés implementó una estrategia nacional en 2021 para garantizar que el país esté mucho mejor preparado para la próxima pandemia.

Un investigador estudia el comportamiento de las células inmunitarias durante una infección viral mediante un sistema de imagen de dos fotones in vivo. Crédito: Universidad de Tokio.

Parte de esta estrategia, gestionada por la Agencia Japonesa para la Investigación y el Desarrollo Médico (AMED), consistía en establecer centros de investigación y desarrollo de vacunas de primer nivel en todo Japón. El Centro de Preparación para Pandemias, Infecciones e Investigación Avanzada de la Universidad de Tokio (UTOPIA), fundado en 2022 y dirigido por Kawaoka, es el centro insignia de esta iniciativa.

Uno de los principales objetivos de la estrategia es aumentar la capacidad para desarrollar una vacuna en los 100 días posteriores a la identificación de un nuevo patógeno viral. Esto se alinea con la Misión de los 100 Días, una iniciativa de salud global que busca implementar pruebas de diagnóstico, tratamientos efectivos y vacunas en los 100 días posteriores a la identificación de una nueva amenaza de pandemia viral.

«En colaboración con otros centros a nivel nacional, estamos creando un proceso unificado que abarca desde el descubrimiento de antígenos hasta la evaluación clínica temprana y la preparación para la fabricación», afirma Kawaoka.

Kawaoka es uno de los virólogos más influyentes del mundo, con una trayectoria dedicada al estudio de la influenza, el virus del Ébola y el SARS-CoV-2. Estableció un método para generar virus de la influenza a partir de plásmidos y contribuyó a descifrar los genes que hicieron tan letal la gripe española de 1918, transformando nuestra comprensión de las enfermedades virales.

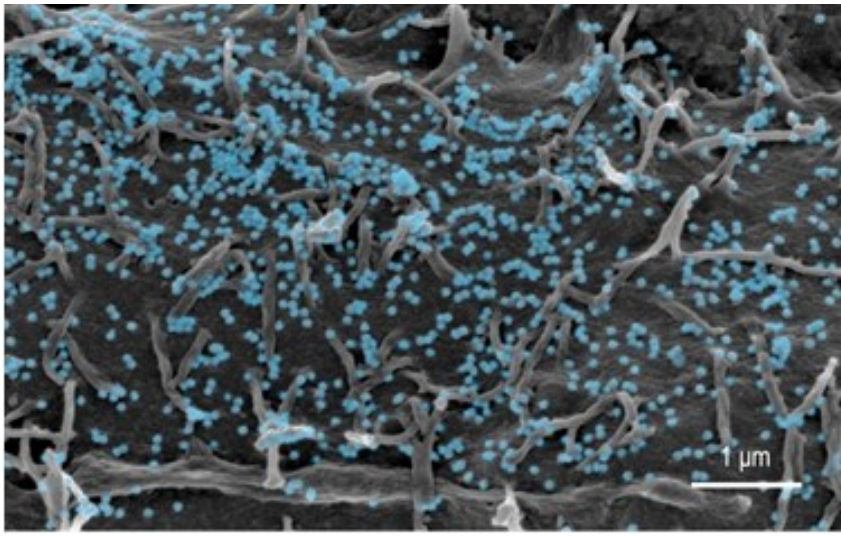
Durante el brote de Ébola de 2014-2016, su equipo impulsó el desarrollo de vacunas experimentales que entraron en ensayos clínicos. Y cuando irrumpió la COVID-19, su laboratorio se centró rápidamente en el SARS-CoV-2, desarrollando modelos animales e identificando nuevas variantes. Su trayectoria ejemplifica la misión de UTOPIA: convertir el descubrimiento en protección real.

Un paso adelante

Pero hay cosas que podemos hacer incluso antes del primer día de una pandemia. Kei Sato, profesor de virología de sistemas de la Universidad de Tokio y miembro de UTOPIA, está adoptando un enfoque proactivo para abordar nuevos patógenos. En lugar de esperar a que aparezcan en la población humana, su equipo busca activamente nuevos virus en animales de campo, con especial atención a los coronavirus en países asiáticos.

Esto podría permitir identificar y estudiar posibles amenazas antes de que se propaguen a los humanos, lo que daría a los científicos una ventaja inicial a la hora de prepararse para la próxima pandemia.

"En mi laboratorio, nuestro objetivo es identificar nuevos virus potencialmente peligrosos en la naturaleza", afirma Sato. "Posteriormente, podemos determinar su secuencia genética y caracterizar sus propiedades en el laboratorio. Finalmente, realizamos análisis bioinformáticos. Esto nos permite aprender mucho sobre estos virus antes de que infecten a los humanos".



Micrografía electrónica de barrido de partículas del virus SARS-CoV-2 (azul) en la superficie de una célula. Crédito: Universidad de Tokio.

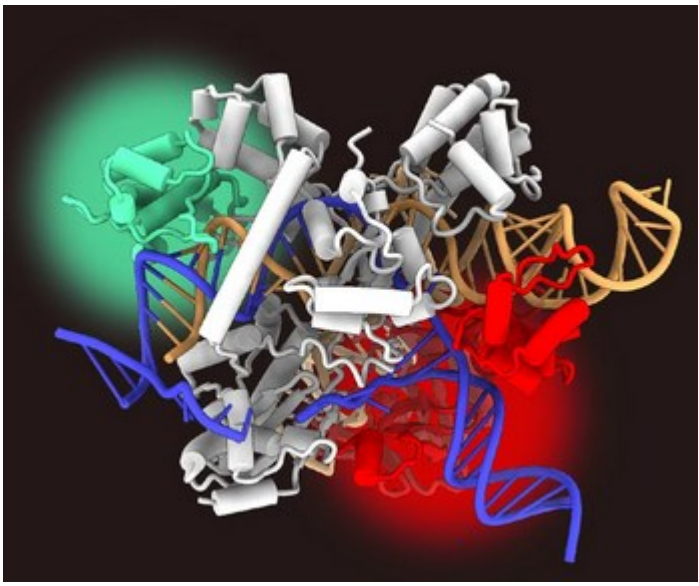
Como parte de estos esfuerzos para identificar e interceptar futuras amenazas, Sato y otros investigadores de UTOPIA están desarrollando herramientas predictivas basadas en inteligencia artificial (IA) destinadas a pronosticar la evolución de los virus. La pandemia de COVID-19 puso de manifiesto que los virus son un objetivo en constante cambio, con nuevas variantes que surgen a medida que se propaga el virus SARS-CoV-2.

La capacidad de predecir la evolución de los virus permitirá a los científicos diseñar vacunas que ofrezcan una protección más amplia. El modelo denominado «CoVFit», desarrollado por el equipo de Sato, es capaz de predecir el potencial epidémico de las variantes del SARS-CoV-2 basándose en las secuencias de sus proteínas de espiga.

«CoVFit es una herramienta basada en un modelo de lenguaje de proteínas que puede predecir la capacidad de propagación de una variante del SARS-CoV-2 directamente a partir de las secuencias de la proteína S», explica Kawaoka. «Puede identificar genotipos de alto riesgo poco después de su detección e informar sobre las actualizaciones de la vacuna».

«Los modelos basados en IA, como CoVFit, pueden representar una herramienta poderosa para prepararse para futuras pandemias, diseñar vacunas y evaluar el riesgo global», señala Sato.

Estructura molecular



Los avances en biología estructural están abriendo nuevas oportunidades para el progreso médico mediante la edición genómica de última generación.
Crédito: Universidad de Tokio

Un aspecto clave de UTOPIA es reunir a investigadores de diversas disciplinas en la lucha contra los patógenos. Osamu Nureki, profesor de biología estructural en la Universidad de Tokio, estudia fenómenos biológicos a nivel molecular para combatir los patógenos[5]. Considera que comprender los virus a nivel molecular es fundamental para determinar la mejor manera de protegernos contra ellos.

"Al utilizar técnicas de biología estructural para comprender los virus a nivel molecular, podemos descubrir el mecanismo que emplean y la mejor manera de contrarrestarlos", afirma Nureki. "Creo que no solo la inmunidad, sino también los transportadores de canales e incluso la edición genética pueden utilizarse para protegernos contra los patógenos".

Tras presenciar los efectos disruptivos de la COVID-19, Nureki reorientó su investigación. "Antes de la COVID-19, me centraba exclusivamente en la investigación básica", explica. "Pero la pandemia me hizo comprender la importancia de participar también en investigaciones con un enfoque práctico más inmediato".

Un proyecto de colaboración que entusiasma especialmente a Nureki se centra en un anticuerpo capaz de neutralizar cualquier flavivirus, la familia de virus que incluye el dengue, el Zika y el virus del Nilo Occidental.

Según afirma, los investigadores del Instituto Nacional de Enfermedades Infecciosas de Tokio "han descubierto este anticuerpo que puede neutralizar cualquier flavivirus, y ahora estamos estudiando la estructura molecular de un complejo en este anticuerpo", con el objetivo final de desarrollar una vacuna de amplio espectro contra los flavivirus.

Construyendo puentes

UTOPIA busca superar la brecha entre la academia y la industria mediante la creación de un proceso integral y fluido, que incluye un grupo especializado en cooperación clínico-industrial. Además, está estableciendo una instalación de buenas prácticas de fabricación (BPF) en la Universidad de Tokio, lo que facilitará la producción de fármacos en investigación y ayudará a cerrar la brecha entre el laboratorio y la clínica.

«A diferencia de Europa y Estados Unidos, Japón no cuenta con instalaciones de BPF en las universidades», explica Kawaoka. «Por lo tanto, en la Universidad de Tokio estamos desarrollando una instalación de BPF que acelerará el proceso de llevar un compuesto del laboratorio a la clínica».

En última instancia, la misión de UTOPIA es garantizar que la preparación de Japón para la próxima pandemia sea comparable a su preparación para otros desastres naturales. «El Centro UTOPIA es el núcleo dinámico de la estrategia revitalizada de Japón para la preparación ante pandemias», afirma Kawaoka, «y será un socio científico líder a nivel mundial para la comunidad investigadora global».

Fuente: Nature Portfolio. Disponible en https://goo.su/vKKAf

Noticias en la Web

RSV vaccine for older adults 92% protective against poor outcomes, real-world study estimates


Luis Requena / iStock

Oct 22. In its first year of use in the United States, the overall estimated effectiveness of the respiratory syncytial virus (RSV) vaccine against respiratory illness and severe disease in adults aged 60 years and older was 92%, a team led by researchers from Kaiser Permanente Southern California and vaccine maker Pfizer reported yesterday in Clinical Infectious Diseases.

The investigators used a test-negative case-control design to estimate the vaccine effectiveness (VE) of the RSVpreF (Abrysvo) vaccine against emergency department (ED) visits or hospitalizations among 696 older RSV patients, 6,540 healthy ("broad") controls, and 1,034 who tested positive only for a non –vaccine-preventable pathogen ("strict" controls) from November 2023 to April 2024.

A previous test-negative case-control study by the same team published in December 2024 estimated the effectiveness of the vaccine at 89% against RSV-related hospitalization and ED visits.

In June 2024, the US Centers for Disease Control and Prevention's (CDC's) Advisory Committee on Immunization Practices (ACIP) recommended that all adults aged 75 and older and those aged 60 to 74 at high risk for severe RSV receive a single dose of the vaccine. But uptake has been low. By December 2024, estimated US coverage of RSV vaccines was 34% among adults aged 75 and older and 31% in high-risk patients aged 60 to 74.

95% effective in those aged 75 and older

The vast majority of participants (92.7%) had chronic conditions, 45.7% had chronic obstructive pulmonary disease (COPD), 14.6% had weakened immune systems, and 56.4% were aged 75 and older. Overall, 0.3% of RSV patients, 3.6% of strict controls, and 3.4% of broad controls had received RSVpreF.

The study included 8,965 ED visits/hospitalizations for acute respiratory illness that included RSV testing. In total, 7.8% of patients were RSV-positive, among whom 0.3% had been vaccinated, compared with 3.6% of controls.

> ***"With pending expansion of [RSV] recommendations to adults aged 50–59 years, continued evaluation of the potential protective benefits of this vaccine is warranted."***

A comparison of 695 RSV patients with 1,034 strict controls estimated the adjusted VE against RSV-related ED visits/hospitalizations at 92%, with vaccinees receiving RSVpreF a median of 56 days before respiratory infection. Comparing RSV patients with 8,270 broad controls, the adjusted VE was 90%, with vaccine receipt a median of 62 days before infection.

The adjusted estimated VE against ED visits/hospitalizations was 95% among patients aged 75 and older, 92% among those with high-risk medical conditions, and 90% against critical outcomes such as intensive care unit admission or mechanical ventilation.

The results indicate that RSVpreF "has higher VE against severe outcomes than other current respiratory vaccines, including SARS-CoV-2, influenza, and pneumococcal vaccines," the study authors wrote. "With pending expansion of [RSV] recommendations to adults aged 50–59 years, continued evaluation of the potential protective benefits of this vaccine is warranted."

Fuente: CIDRAP. Disponible en https://goo.su/ztW1n85

Proyecto de cooperación permitirá ampliar la capacidad de innovación y producción de vacunas

23 oct. En la sede de la Dirección de Investigaciones del Instituto Finlay de Vacunas se presentó un proyecto de cooperación estratégica entre la Agencia Francesa de Desarrollo (AFD), la Unión Europea (UE) y la propia institución científica cubana. La iniciativa forma parte de la estrategia de desarrollo del Instituto y se sustenta en su trayectoria científica, capacidades actuales y proyecciones.

Respaldada por las autoridades cubanas, la alianza tiene como objetivo fortalecer la capacidad nacional de innovación y producción de vacunas, en beneficio de la salud pública y como pilar de la soberanía sanitaria del país.

Durante el encuentro, se destacó la relevancia de la cooperación en el sector de la biotecnología, considerado estratégico para el desarrollo científico y social. El proyecto se articula en torno a tres ejes fundamentales: la modernización de las instalaciones y el fortalecimiento de los sistemas de calidad, el aumento y diversificación de la producción de vacunas mediante la incorporación de equipos y tecnologías de vanguardia, y el impulso a la investigación y la innovación.

Además, los participantes destacaron el sólido saber hacer de Cuba en ciencia y biotecnología, evidenciado de forma contundente durante la pandemia de COVID-19, cuando el país desarrolló vacunas propias.

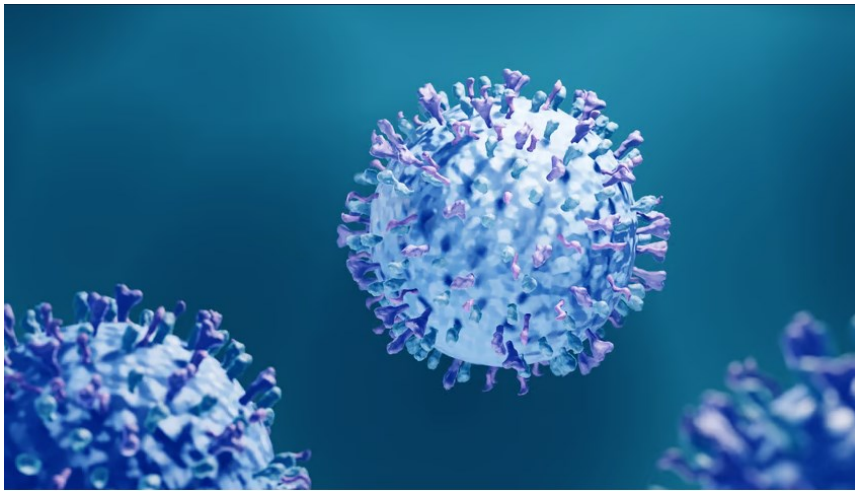
La iniciativa no solo fortalece la cooperación actual, sino que sienta las bases para futuras alianzas científicas y tecnológicas entre instituciones cubanas y socios internacionales.

En el acto participaron la Dra. Mayda Mauri, presidenta de BioCubaFarma; Jens Urban, embajador de la Unión Europea en Cuba; Marie-Pierre Bourzai, directora geográfica para América Latina de la AFD; Amaya Olivares Zapiain, jefa de Cooperación a.i de la UE; Hervé Aloncle, director de la AFD en Cuba; jefes de misión de Estados miembros de la UE acreditados en el país; representantes del Ministerio de Comercio Exterior y la Inversión Extranjera (Mincex); funcionarios de organismos internacionales y agencias de cooperación, así como directivos del Instituto Finlay de Vacunas.

Actualmente, la AFD participa en más de 4000 proyectos en los territorios franceses de ultramar y en 160 países, con enfoque en desarrollo sostenible, salud, energía y resiliencia climática.

Fuente: Vanguardia. Disponible en https://goo.su/fONUIQS

Sanofi drops RSV vaccine for toddlers after phase 3 trial heads for failure



Oct 24. Sanofi has dropped its respiratory syncytial virus (RSV) vaccine for toddlers after the candidate underperformed in a phase 3 study.

The French Big Pharma was evaluating the intranasal live attenuated vaccine, dubbed SP0125, in a late-stage study of about 6,300 children aged between 6 months and 22 months. The study launched last year, according to the federal trials database, and was scheduled to complete at the end of 2027.

But Sanofi—which markets the AstraZeneca-partnered RSV blockbuster Beyfortus—revealed this morning that it has recently terminated the SP0125 program after the study's independent data monitoring committee (IDMC) decided it was unlikely to demonstrate suitable efficacy.

"The safety profile was acceptable, and no signals of vaccine-associated enhanced respiratory disease were observed by the IDMC," Sanofi explained in its third-quarter earnings results (PDF).

At a vaccines R&D day back in 2023, Sanofi had touted SPO125 as the "first RSV vaccine designed to protect toddlers" and referenced "positive phase 1/2 data for the asset." While the vaccine's subsequent phase 3 failure may be a blow to Sanofi's RSV plans, the company has been expanding its presence in the space.

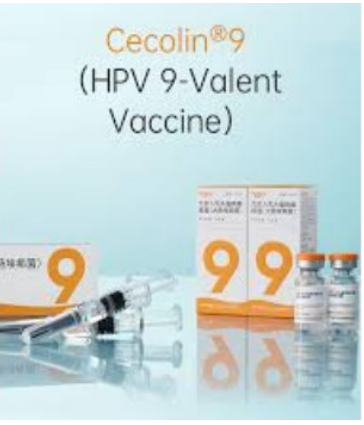
Sanofi already has mRNA vaccines for older adults in the clinic in the form of SP0256, which targets RSV and hMPV, as well as SP0291, which targets RSV, hMPV and PIV3. In July, Sanofi paid $1.15 billion upfront for Vicebio for its non-mRNA vaccine for RSV.

Fuente: FIERCE Biotech. Disponible en https://goo.su/vRAQZ

A Self-Reliant Future through HPV 9-Valent Vaccine Alliance: INNOVAX details Localization Strategy in Thailand at IPVS 2025

Oct 24. On October 23, 2025, Dr. Zhiming (Tiffany) Jiang, General Manager of Wantai Group, and Dr. Huirong (Harry) Pan, General Manager of Xiamen Innovax Biotech Co., Ltd. ("Innovax"), participated in the 37th International Papillomavirus Society (IPVS) Conference in Bangkok, Thailand. They chaired a dedicated symposium titled "A New Era of HPV Vaccines: The Efforts from Developing Country Manufacturers for Global Cervical Cancer Elimination," which sparked lively discussions among attending experts and scholars. Innovax's booth (#09) "Together Against HPV" also attracted active engagement.

The symposium was chaired by Dr. Wichai Termrungruanglert, Vice President of the Royal Thai College of Obstetricians, during which, INNOVAX and Xiamen University jointly presented "Improving Global Equity in HPV Prevention: The Promise of a Novel *E. coli*-Expressed 9-Valent Vaccine." Professor Ting Wu from Xiamen University presented, for 1st time to the international academic community, three-year follow-up data from a head-to-head clinical trial comparing Cecolin 9 with a marketed HPV 9-valent vaccine. The clinical results of Cecolin 9 demonstrate comparable immunogenicity and safety profiles to the marketed HPV 9-valent vaccine, underscoring its significant potential to improve equity in global HPV prevention.



Later was a presentation on “Together Against HPV: Leveraging Strong Partnerships for Cecolin 9 Local Production and Equitable Access in Thailand” by Dr. Nakorn Premsri, Director of the National Vaccine Institute of Thailand (NVI) and Dr. Boonrak Thawornrungroaj, Managing Director of Global Biotech Products Co., Ltd. (GBP). They detailed the localization strategy and implementation progress for Cecolin 9 in Thailand.

The symposium also hosted representatives from the Gates Foundation (GF), the Clinton Health Access Initiative (CHAI), Program for Appropriate Technology in Health (PATH), International Vaccine Institute (IVI) and experts from industries, etc.. Attendees commended Innovax’s contributions to advancing the global elimination of cervical cancer and expressed strong commitment to further strengthen collaboration.

Fuente: MACAU BUSINESS. Disponible en https://goo.su/SzGsn

Pneumococcal Conjugate Vaccines Reduces Incidence of Pneumonia for Children 2 Years and Under

Oct 26. Pneumococcal conjugate vaccines (PCV) reduced the incidence of pneumonia and improved levels of IgG antibodies in pediatric patients, according to results of a study published in Frontiers in Pediatrics. However, there is a lack of data on adverse events in children, so investigators stated that safety outcomes have to be explored more in future randomized controlled trials.

“Pneumococcal infections are the leading cause of childhood morbidity and mortality, especially in developing countries,” the study authors said.1 “PCV, as an important component of the global childhood immunization program, has been widely recognized for its efficacy in preventing IPD [invasive pneumococcal disease] in children.”

The CDC currently recommends pneumococcal vaccination for children younger than 5 years old, as well as children with certain risk factors for severe disease. There are 2 types of vaccines recommended: PCVs, such as PCV15 and PCV20, and pneumococcal polysaccharide vaccine 23. For children under 5, they should receive 4 doses total, with one at 2 months, 4 months, 6 months, and 12 through 15 months.

Pneumococcal infection is a growing concern for pediatric patients, according to a review in Cureus. The infection is associated with morbidity and mortality, especially for patients under 2 years. More severe and invasive diseases affect children with immunodeficiencies, malnutrition, chronic lung disease, and nephrotic syndrome, according to the authors. Symptoms can vary depending on the severity of infections.

In the current study, the investigators aimed to gather the current data on the effect of PCV for children, which included protective efficacy or effectiveness against invasive disease, pneumonia, and otitis media, immunogenicity profiles, and safety parameters. The authors searched PubMed, Web of Science, Cochrane Library, and Embase up to June 19, 2024, and included studies in English. Studies included children who were aged 0 to 2 years, PCV and placebo vaccination, incidence of pneumonia, immunogenicity, safety, and a randomized controlled design.

Investigators identified 5678 studies but included 11 that met the eligibility criteria. All studies were published from 1998 to 2023 and included 147,274 patients aged 0 to 2 years, with 73,676 in the PCV group and 73,598

in the placebo group. Patients were from South Africa, Gambia, the Philippines, China, and Australia. The overall bias of the studies was low, but the investigators stated that the results still require careful consideration. Pneumonia was reported in 5 studies and included 141,979 patients. In the pooled analysis, the incidence of pneumonia was lower in the PCV group compared with the placebo. They also found that PCV9 significantly reduced the incidence of pneumonia, but the effects of PCV11 had no difference from the placebo, according to the study authors.

For immunogenicity, investigators found that PCV significantly elevated antibody 1, antibody 4, antibody 5, antibody 6B, antibody 9V, antibody 14, antibody 18C, antibody 19F, and antibody 23F compared with the placebo. For the safety analysis, all 11 studies were included, but most did not report specific adverse effects or adverse reactions, according to the study authors. In one study, the authors mentioned an increased incidence of asthma following immunization with PCV, and another showed a favorable safety profile for the vaccine.

“These findings are important for understanding the long-term protection of vaccines, optimizing vaccination strategies, and developing future vaccination policies,” the study authors said.1 “We expect that this study will offer a scientific basis for public health decision-makers and clinical practice, and more comprehensive protection for children.”

Fuente: Drug Topics. Disponible en https://goo.su/zZwtuE

Pneumococcal Conjugate Vaccines Reduces Incidence of Pneumonia for Children 2 Years and Under

Oct 27. Shares of Vaxcyte Inc. (PCVX) have fallen roughly 64% from their 52-week high of $116, recorded last November, to around $42. As the company nears a significant near-term milestone for one of its drug candidates, could this spark a recovery in its stock and attract renewed investor interest?

The clinical-stage vaccine innovation company is focused on developing a pipeline of pneumococcal conjugate vaccine (PCV) candidates under clinical development, along with preclinical-stage programs targeting Group A Streptococcus and Shigella.

Pneumococcal disease (PD) is an infection caused by *Streptococcus pneumoniae* bacteria. It can result in invasive pneumococcal disease (IPD), including meningitis and bacteremia, and non-invasive PD, including pneumonia, otitis media and sinusitis. The U.S. CDC lists drug-resistant *Streptococcus pneumoniae* as a "serious threat." Globally, *Streptococcus pneumoniae* is the leading cause of vaccine-preventable deaths in children under five, causing approximately 300,000 deaths each year.

The company's pneumococcal conjugate vaccine (PCV) franchise candidates include VAX-31, a 31-valent PCV candidate and VAX-24, a 24-valent PCV candidate.

-- VAX-31 is under a phase 2 study to assess its safety, tolerability, and immunogenicity for the prevention of invasive pneumococcal disease (IPD) in healthy infants, compared with the current standard of care, Pfizer's Prevnar 20 (PCV20). (*Prevnar 20 is an approved pneumococcal conjugate vaccine for the prevention of invasive pneumococcal disease and otitis media).

The phase 2 VAX-31 trial includes 3 stages: (Source: Company PR)

Stage 1 (safety review; completed): The safety and tolerability of VAX-31 were evaluated at three dose levels (Low, Middle and High) and compared to PCV20 in 48 infants in a dose-escalation approach.

Stage 2 (modified and incorporated into Stage 3): This stage is evaluating the safety, tolerability and immunogenicity of VAX-31 at the same three dose levels and compared to PCV20. The study includes a primary immunization series with doses given at two, four and six months of age, followed by a booster dose at 12-15 months of age. On August 6, 2025, the company announced modifications to the ongoing study to add the new VAX-31 Optimized Dose arm, with the majority of serotypes dosed at 4.4mcg and the balance dosed at 3.3mcg, and to discontinue enrollment in the Low Dose arm.

Stage 3 (initiated): The modified study, including the VAX-31 Optimized Dose arm, has proceeded into the third and final stage. The Middle and High Dose arms are continuing in Stage 3 as planned. All participants will be evaluated for safety through six months after the booster dose.

The company expects to report topline safety, tolerability and immunogenicity data from the phase 2 VAX-31 infant trial by the end of the first half of 2027.

-- VAX-31 is also being evaluated for the prevention of invasive pneumococcal disease (IPD) in adults.

A phase 3 program designed to validate VAX-31 as the potential new standard-of-care adult pneumococcal conjugate vaccine is expected to be initiated this quarter (Q4, 2025), with topline data expected in 2026.

Next in the PCV franchise pipeline is VAX-24, which is under a phase 2 dose-finding study evaluating its safety, tolerability and immunogenicity to prevent invasive pneumococcal disease (IPD), compared to Prevnar 20 (PCV20) in healthy infants.

The VAX-24 infant phase 2 clinical study includes 2 stages:

The Stage 1 portion of the study evaluated the safety and tolerability of a single injection of VAX-24 at three dose levels (low dose/1.1mcg, middle dose/2.2mcg, mixed dose/2.2mcg or 4.4mcg) and compared to VAXNEUVANCE (PCV15), which was the broadest-spectrum PCV at the time of study initiation, in 48 infants.

The Stage 2 portion is evaluating the safety, tolerability and immunogenicity of VAX-24 at the same three dose levels and compared to Prevnar 20 (PCV20), currently the broadest-spectrum PCV recommended by the Advisory Committee on Immunization Practices (ACIP), in 754 infants. Participants who received VAX-24 in Stage 1 will continue the standard dosing regimen as part of Stage 2 and will be included in the safety, tolerability and immunogenicity analysis of the study.

The company announced positive topline results from the VAX-24 infant phase 2 dose-finding clinical study in March of this year.

The results showed that VAX-24 was well tolerated at all tested doses, with a safety profile comparable to Prevnar 20 (PCV20). Across all dose levels, VAX-24 generated strong immune responses after the initial three-dose series. Early booster data also showed strong antibody (IgG) responses, indicating a robust immune memory at all dose levels.

The company expects to announce the balance of the VAX-24 phase 2 dose-finding study data, including final safety data, full post-dose 3 opsonophagocytic assay (OPA) data, and full post-dose 4 immunoglobulin G (IgG) and OPA data, by the end of 2025.

The pneumococcal vaccine market is poised for significant growth, and is expected to reach approximately $13 billion by 2027, driven largely by the expanding adult segment.

With the potential to become the broadest-spectrum pneumococcal conjugate vaccines, the company is optimistic that VAX-31 and VAX-24 are well-positioned to capture a meaningful share of this growing market.

In a bid to prioritise resources toward its PCV franchise, the company has paused the advancement of VAX-A1, a prophylactic vaccine candidate designed to prevent Group A Strep infections, and VAX-GI, a vaccine candidate designed to prevent Shigella, both of which have completed preclinical testing.

Cash Position

The company ended June 30, 2025, with cash, cash equivalents, and investments of $2.83 billion, expected to be sufficient to fund its current operating plan to mid-2028.

Vaxcyte shares began trading on the Nasdaq Global Select Market on June 12, 2020, under the ticker symbol "PCVX", priced at $16 per share.

In the last 1 year, PCVX has traded in a range of $27.66 to $116.00. The stock closed Friday's trading at $42.23, up 1.51%.

Fuente: RTT News. Disponible en https://n9.cl/lo9rd

Establishing the world's largest Nipah virus vaccine reserve

Oct 27. One of the world's deadliest viral pathogens, Nipah virus, could soon have a new line of defence against it as CEPI, the University of Oxford and Serum Institute of India Pvt Ltd. (SII), part of Cyrus Poonawalla Group, the world's largest vaccine manufacturer, collaborate to create the world's largest investigational ready reserve of a Nipah virus vaccine candidate.

CEPI funding of up to US$7.3 million will support SII for process development and manufacturing of the University of Oxford's ChAdOx1 NipahB vaccine candidate. SII will manufacture doses for use in a Phase II clinical trial in a Nipah-affected country, and create an investigational reserve of up to 100,000 doses, which could be deployed under emergency use during a future Nipah virus outbreak, helping to generate critical data and potentially halt an epidemic in its tracks. SII will supply the Phase II doses—known as clinical trial material—to the University of Oxford, which is conducting the CEPI-funded clinical trials. These mid-stage trials are set to be the first Phase II trials for a Nipah virus vaccine candidate to take place anywhere in the world.

Nipah virus, belonging to the paramyxovirus family, kills up to 75 percent of people it infects. The majority of outbreaks have occurred in India and Bangladesh since it was first discovered in Malaysia in 1999, with Bangladesh experiencing outbreaks almost annually since 2001. Despite its lethality, there are currently no approved countermeasures to defend against it. CEPI is working to change that as the world's largest funder of Nipah virus R&D, committing around US$150 million to its Nipah virus vaccine, biologics and enabling science programmes.

⇒ *CEPI, Serum Institute of India Pvt Ltd. and the University of Oxford collaborate to manufacture ChAdOx1 NipahB vaccines for Phase II trials and investigational ready reserve of up to 100,000 doses.*

⇒ *Reserve doses could be deployed under emergency use during a future Nipah virus outbreak, helping generate critical data and potentially halt an epidemic in its tracks.*

⇒ *Advancing clinical testing and manufacturing of a Nipah vaccine will strengthen regional defences against the disease.*

"By advancing clinical testing and manufacturing thousands of vaccine doses against one of the world's deadliest viral pathogens, in a region where the virus persistently occurs, we're creating a state of readiness against Nipah outbreaks," said Dr Amadou Sall, CEPI's Executive Director of Manufacturing and Supply Chain. "This means we can manufacture the vaccines needed to advance clinical testing, and the vaccine could also potentially be used in emergencies when there are future outbreaks, helping save lives and limit the devastation caused by Nipah virus."

The ChAdOx1 NipahB vaccine is based on the same viral vector platform technology as the licensed Oxford-AstraZeneca COVID-19 vaccine. SII produced over 2 billion doses of ChAdOx-COVID-19 vaccine and is well placed to leverage its past experience and manufacturing capabilities to establish an investigational reserve of ChAdOx1 NipahB virus vaccine doses to be stored and maintained at its facilities in Pune.

Dr. Umesh Shaligram, Executive Director, Serum Institute of India, said, "The collaboration with CEPI and the University of Oxford to develop and manufacture an investigational reserve of the ChAdOx-Nipah vaccine candidate marks a significant step forward in our pandemic preparedness efforts. Leveraging our proven manufacturing capabilities and past success with the ChAdOx platform, we are proud to help establish the world's largest investigational reserve against Nipah virus—one of the deadliest pathogens known. Our aim is to ensure that life-saving doses reach those most in need, particularly across the Global South."

Professor Brian Angus, Professor of Medical Practice at the Nuffield Department of Medicine, University of Oxford, and Chief Investigator of the trial at the Oxford Vaccine Group, said: "Developing a Nipah vaccine that can be tested and used in regions where Nipah outbreaks occur regularly is a vital step toward ensuring communities most at risk are protected. Built on the same ChAdOx platform that underpinned the Oxford–AstraZeneca COVID-19 vaccine, this candidate has the potential to provide an urgently needed defence against a deadly virus, helping to prevent future epidemics and protecting global health equitably."

As Nipah outbreaks are usually small and hard to predict, large-scale efficacy trials involving thousands of participants, typically required for traditional regulatory approval, are highly unlikely to be feasible. However, Phase II data, in combination with the possibility of safety and immunogenicity data captured during future outbreaks, alongside preclinical data, could help provide an alternative route to licensure in Nipah-affected countries.

This new project brings together two of CEPI's existing collaborators to advance both vaccine development and manufacturing in support of the 100 Days Mission—CEPI's goal of delivering vaccines within 100 days of identifying a new outbreak pathogen. In 2024, SII joined CEPI's vaccine manufacturing facility network, which aims to expand pandemic preparedness aligned to the 100 Days Mission and support equitable access to outbreak vaccines, particularly in Global South countries. This complements CEPI's strategic partnership with the University of Oxford—an $80 million initiative to advance prototype vaccines against high-risk viral families through the work of Oxford's world-leading vaccine scientists. Together, these collaborations are driving forward both the development and manufacture of a Nipah vaccine, reinforcing readiness to respond swiftly to one of the world's deadliest viral pathogens.

Commitment to equitable access

CEPI, SII and the University of Oxford are committed to enabling equitable access to the outputs of this CEPI-supported programme, in line with CEPI's Equitable Access Policy. This ultimately includes a commitment to vaccines being available first to populations at risk, particularly in the Global South, when and where they are needed at an affordable price. Wherever possible, project results, including data generated as part of this collaboration, will be published open access for the benefit of the global scientific community.

Fuente: CEPI. Disponible en https://n9.cl/88vzuz

Pfizer and BioNTech's New Vaccine Study: A Potential Game-Changer for COVID-19 Prevention

Oct 28. Pfizer Inc. and BioNTech SE have announced an update on their ongoing Phase 3 clinical study titled A Phase 3 Protocol to Investigate the Safety, Tolerability, and Immunogenicity of BNT162b2 RNA-Based Variant-Adapted Vaccine Candidate(s) Against SARS-CoV-2 in Adults, Including Those at Higher Risk of Severe COVID-19. The study aims to evaluate the safety and immune response of an updated COVID-19 vaccine targeting a circulating variant of SARS-CoV-2, specifically for adults at higher risk of severe disease.

The intervention being tested is a biological vaccine, BNT162b2 (Omi LP.8.1), designed to target a variant of the SARS-CoV-2 virus. Participants will receive a single 30 µg dose of this RNA-based vaccine, which is tailored for the 2025-2026 COVID-19 season.

This interventional study follows a parallel assignment model with no masking, focusing on prevention. It includes two experimental groups: individuals aged 18-64 at higher risk and those aged 65 and older, each receiving the vaccine at the first visit.

The study began on July 7, 2025, with the last update submitted on July 30, 2025. These dates mark the study's initiation and the latest information available, respectively, indicating the study is actively recruiting participants.

The market implications of this study are significant for Pfizer and BioNTech, as successful results could enhance their positions in the COVID-19 vaccine market, potentially boosting stock performance and investor confidence. This development is crucial as companies continue to adapt to emerging variants and maintain competitiveness in the pharmaceutical industry. The study is currently ongoing, with further details available on the ClinicalTrials portal.

Fuente: THE GLOBE AND MAIL. Disponible en https://n9.cl/i434z

La vacuna neumocócica Capvaxive (MSD), protagonista del nuevo informe de financiación de fármacos de la CIPM

29 oct. El Ministerio de Sanidad de España ha publicado un nuevo informe acerca de la decisión de financiación de fármacos de la Comisión Interministerial de Precios de los Medicamentos y Productos Sanitarios (CIPM). Este se añade a los tres primeros de marzo, dirigidos a Hemgenix, Camzyos y Velsipity; a los 18 de abril: Talvey, Brineura, Altuvoct, Lojuxta, Exblifep, Emblaveo, Rezzayo, Finlee, Spexotras, Fruzaqla,

Vanflyta, Tevimbra, Tepkinly, Talzenna, Rystiggo, Desflurano Baxter, Agilus y Elucirem; a los 14 de junio: Carvykti, Omjjara, Lyvdelzi, Iqirvo, Giapreza, Kinpeygo, Loargys, Ovestinon, Obgemsa, Balversa, Blincyto, Tibsovo, Voydeya y Lampit; a los tres de julio: Beyonttra, Fabhalta y Qalsody; y, finalmente, a los cuatro de septiembre: Akeega, Nexpovio, Yorvipath y Wainzua.

En concreto, en esta nueva ronda se ha incluido la vacuna conjugada neumocócica polisacárida 21 valente Capvaxive (MSD), indicada para la inmunización activa para la prevención de la enfermedad invasiva y neumonía causadas por Streptococcus pneumoniae en personas a partir de 18 años de edad.

Según el documento, el uso de Capvaxive se debe realizar de acuerdo con las recomendaciones oficiales. La enfermedad neumocócica (EN) es el término utilizado para referirse a cualquier infección causada por un tipo de bacteria llamada Streptococcus pneumoniae o neumococo. Las manifestaciones clínicas de la enfermedad neumocócica se pueden agrupar ampliamente en 2 categorías:

⇒ Enfermedad neumocócica invasiva (ENI). La ENI generalmente se asocia con las manifestaciones más graves de la infección por neumococo, y puede provocar meningitis, bacteriemia, sepsis, neumonía bacteriémica y artritis séptica.

⇒ Enfermedad neumocócica no invasiva. La enfermedad no invasiva puede manifestarse como otitis media aguda, sinusitis y neumonía no bacteriémica, en donde destaca la neumonía adquirida en la comunidad (NAC)1.

La vacuna fue autorizada por un procedimiento centralizado, es decir, tiene una autorización válida concedida el 24 de marzo de 2025 para toda la Unión Europea (UE). La autorización fue concedida por la Comisión Europea tras la opinión favorable del Comité de Medicamentos de Uso Humano (CHMP) de la Agencia Europea de Medicamentos (EMA, por sus siglas en inglés). La CIPM, en su sesión de 24 de septiembre de 2025, acordó proponer a la Dirección General de Cartera Común de Servicios de SNS y Farmacia la inclusión en la prestación farmacéutica del SNS de Capvaxive.

Fuente: El Global Farma. Disponible en https://n9.cl/iu9769

CIDRAP Launches Revamped Coronavirus Vaccine Roadmap Initiative Site to Advance Global Coordination of Vaccine R&D

Oct 30. The University of Minnesota's Center for Infectious Disease Research and Policy (CIDRAP) today announced the launch of a new Coronavirus Vaccines R&D Roadmap (CVR) Initiative digital home, a global, open-access platform designed to track scientific progress toward the development of broadly protective coronavirus vaccines.

Created in partnership with the Coalition for Epidemic Preparedness Innovations (CEPI), the CVR Initiative website transforms CIDRAP's Coronavirus Vaccines Research and Development (R&D) Roadmap into a dynamic, continuously updated resource for researchers, policymakers and funders. The roadmap — originally launched in 2023 with support from The Rockefeller Foundation and the Gates Foundation — outlines key goals and milestones to guide global coronavirus vaccine R&D. With CEPI's investment, and in collaboration with 50 scientific experts from around the world, the new initiative

serves to monitor progress in these priority research areas and further catalyze coronavirus vaccine development critical for future preparedness and response.

The new site hosts three integrated components:

- ⇒ Coronavirus Vaccine Technology Landscape: a curated, continually updated database of coronavirus vaccines in preclinical and clinical development, including broadly protective, SARS-CoV-2 and MERS vaccine candidates.
- ⇒ R&D Progress Tracker: an interactive tool that monitors scientific advances and reports progress toward achieving the roadmap's defined goals and milestones according to five major topic areas: virology, immunology, vaccinology, animal and human infection models, and policy and financing.
- ⇒ CVR Scholar Hub: an online resource center featuring literature reviews, data syntheses and other materials supporting researchers in coronavirus vaccine development.

"The launch of this new digital home marks an important next step for the roadmap and for the broader vaccine research community," said Dr. Michael Osterholm, Regents Professor and Director of CIDRAP. "We now have a centralized, open-access resource that allows scientists, funders and policymakers to see in real time where progress is being made and where critical gaps remain. Our goal is to turn information into actions — accelerating discovery, collaboration and preparedness for the next coronavirus threat."

Coronaviruses have caused three major outbreaks in the past two decades — SARS, MERS and COVID-19 — and remain among the top pandemic threats identified by the World Health Organization.

Modelling research funded by CEPI and published this month in Nature Communications found that broadly protective coronavirus vaccines could reduce the number of deaths and ease the burden on health systems in a future coronavirus pandemic when produced and stockpiled in advance of an outbreak.

"Knowledge is power when preparing for pandemic threats, so the more scientific information on coronaviruses we can develop and make accessible for researchers and policymakers worldwide, the stronger our defences when the next coronavirus rears its ugly head," said Dr. Nadia Cohen, CEPI's Coronavirus Vaccine Programme Lead. "By investing in the Coronavirus Vaccine Roadmap and supporting the creation of this new site, we have a comprehensive outlook into new research that will guide investments by CEPI and other funders to prevent another COVID-19 like pandemic."

The Coronavirus Vaccines R&D Roadmap Initiative website and associated resources are freely available at cvr.cidrap.umn.edu.

About the Center for Infectious Disease Research and Policy

CIDRAP is a global leader in addressing public health preparedness and emerging infectious disease response. In 2021, CIDRAP released the Influenza Vaccines R&D Roadmap, which was funded by the Wellcome Trust and developed with a group of international partners, to accelerate the development of improved seasonal influenza vaccines and the generation of broadly protective or universal influenza vaccines that could mitigate the impact of future influenza pandemics. CIDRAP has also generated for the World Health Organization roadmaps for medical countermeasures against Ebola/Marburg, Lassa, Nipah, and Zika viruses. Founded in 2001, CIDRAP is part of the Office of the Vice President for Research at the University of Minnesota.

Fuente: News and Events. Disponible en https://n9.cl/nby96

As vaccines industry struggles, Merck's adult pneumococcal shot Capvaxive off to strong start

Oct 30. With vaccine sales on the decline across the industry, these are tough times for Merck to launch its new pneumococcal shot Capvaxive. But in the third quarter, the company recorded encouraging sales for the vaccine, which is the world's first pneumococcal shot designed specifically for adults.

Capvaxive generated sales of $244 million in the period, which was up from $129 million in Q2. Over its first four quarters on the market—since the CDC recommended its use in October of last year for people age 50 and older—Capvaxive pulled in sales of $530 million.

“[Capvaxive] is off to a very strong start,” Merck chief financial officer Caroline Litchfield said during the company’s quarterly conference call Thursday.

The result for Capvaxive comes as Merck and the world’s other top vaccine sellers are seeing declining revenues from their shots.

Sanofi reported last week that its overall vaccine sales were down 8%, due largely due to lower vaccination rates and increased price competition for its flu shots. GSK managed to squeak out a 2% overall increase in sales of its vaccines despite a 15% decline in the U.S., largely due to a demand shortfall for shingles vaccine, Shingrix.

As for Merck, the sales of its other vaccines fell in the third quarter. HPV shot Gardasil, which is still reeling from plummeting demand in China, was down 24%. Sales of ProQuad, MMR II and Varivax, which Merck lumps together in its reporting, were down 3%. And Merck’s other pneumococcal shot, Vaxneuvance, saw a 6% decline to $226 million for the period.

Merck has touted Capvaxive as an alternative to the world’s dominant pneumococcal vaccine, Pfizer’s Prevnar 20. The company cites CDC epidemiologic data that says the 21 serotypes that Capvaxive covers account for 84% of the pneumococcal disease of people age 50 and older, which compares to a 52% figure for the 20 serotypes covered by Prevnar 20. Merck also reminds patients that no studies have been conducted to compare Capvaxive’s efficacy to that of Prevnar 20.

Pfizer will reveal its third-quarter results next week.

Fuente: FIERCE Pharma. Disponible en https://n9.cl/l40hlv

Preparing for the Next Influenza Pandemic: Vaccine Progress, Challenges, and Prospects

Oct 31. Influenza pandemics arise when novel influenza virus subtypes emerge in populations with little or no pre-existing immunity. The recent expansion of H5N1 virus circulation in mammals — including documented spread in cattle and sporadic human infections — coupled with the emergence of mutations associated with enhanced pandemic potential, underscores the persistent threat of novel influenza strains. Pandemic preparedness critically depends on developing effective vaccines capable of providing broad protection across diverse viral strains. While vaccination remains the most effective strategy for preventing influenza and its complications, pandemic vaccine development faces substantial challenges. These include the rapid mutation rates characteristic of influenza viruses, driven by error-prone RNA replication, broad host range,

environmental selection pressures, and frequent genetic recombination. Such factors complicate predictions of which strain will trigger the next pandemic and hinder efforts to create universal vaccines. Recent advances in vaccine production platforms, bioinformatics, and artificial intelligence have accelerated pandemic vaccine development capabilities. Continued research is essential to enhance vaccine technology, expedite production timelines, and broaden vaccine efficacy against the full spectrum of influenza virus strains.

Influenza is an acute respiratory disease caused by influenza viruses, characterized by rapid viral mutations that occur through antigenic drift and antigenic shift. This disease has posed a persistent threat to global public health, with seasonal epidemics occurring annually and occasional pandemics that can have far-reaching consequences. An influenza pandemic is defined by the global spread of a novel influenza A virus subtype, against which most of the world's population possesses little or no pre-existing immunity, resulting in rapid international transmission. The 1918 Influenza Pandemic, caused by the H1N1 influenza virus, resulted in an estimated 50 million deaths worldwide (with some estimates reaching 100 million) and significantly reduced global life expectancy by 10–12 years, marking it as one of the most catastrophic public health events in human history. Subsequent pandemics — including the 1957 H2N2 influenza, the 1968 H3N2 influenza, and the 2009 H1N1 influenza — were generally less severe than the 1918 event but nonetheless remained serious threats to human life and economic stability. The substantial impacts of influenza pandemics on global public health, economies, and societies underscore the critical importance of effective preparedness and response strategies to reduce pandemic severity, save lives, and minimize socio-economic disruptions. Vaccines represent the most effective intervention for preventing influenza and its complications. However, developing vaccines for pandemic influenza viruses presents significant challenges. The virus mutates rapidly, and predicting which strain will trigger the next pandemic remains difficult. Here we address the progress, challenges, and prospects for vaccine development in preparation for the next influenza pandemic.

Etiological Basis of Influenza Pandemics

Pandemic influenza strains primarily arise from genetic reassortment between human seasonal influenza viruses and zoonotic influenza viruses. For example, the hemagglutinin (HA), neuraminidase (NA), and polymerase basic protein 1 (PB1) genes of the 1957 H2N2 influenza pandemic strain originated from avian influenza viruses; the NA and PB1 genes of the 1968 H3N2 influenza strain were similarly avian-derived; and the 2009 H1N1 influenza strain emerged from a triple reassortment involving human, avian, and swine influenza viruses. Consequently, strengthening surveillance and research on animal influenza viruses, particularly avian influenza viruses, is essential for pandemic preparedness. The potential threats posed by H7N9 and H5Nx subtypes warrant particular attention. Historically, H7N9 viruses acquired dual receptor-binding capability (recognizing both avian α2,3-linked and human α2,6-linked sialic acid receptors) through G186V and Q226L mutations in their HA protein, thereby identifying these viruses as high-pandemic-risk candidates. Similarly, H5Nx viruses have demonstrated extensive global spread and host adaptability since their first emergence in humans in 1997. Among these subtypes, H5N1 and H5N6 pose the greatest threat to humans, with case fatality rates exceeding 50% (7-8). Since 2021, H5Nx clade 2.3.4.4b viruses have caused large-scale outbreaks in avian populations, subsequently expanding to infect over 48 genera of terrestrial and marine mammals, including cattle, thereby elevating the risk of novel virus emergence. Notably, dual receptor (α2,3 and α2,6) binding capacity has been documented for bovine clade 2.3.4.4b H5N1 highly pathogenic avian influenza viruses (HPAIVs), which, combined with mammalian-adaptive mutations such as E627K in

the polymerase basic protein 2 (PB2) protein, significantly increases their pandemic risk. Animal experiments have further confirmed that these viruses can undergo airborne transmission in ferrets. Concurrently, other subtypes, including H10N3 and H3N8 viruses, continue to enhance their mammalian adaptability and transmission capacity through key mutations, indicating that the risk posed by strains with pandemic potential cannot be ignored. These findings collectively underscore the critical importance of early detection and identification of emerging influenza virus strains.

Influenza Pandemic Prevention and Control: Current Progress of Vaccines

During the 2009 H1N1 influenza pandemic, clinical trials were conducted across multiple countries. China's advanced split influenza A virus vaccine demonstrated a protection rate exceeding 85%, with some formulations achieving over 90% efficacy. Although global deployment was delayed, the vaccine's excellent safety profile was subsequently confirmed through surveillance in 70 million recipients and comprehensive post-marketing monitoring, providing critical evidence for worldwide vaccination strategies. In response to ongoing pandemic threats and viral evolution, diverse platforms for influenza vaccine research and development have since been established globally, encompassing inactivated, split, live attenuated, subunit, adjuvanted, cell culture-based, nucleic acid, and universal influenza vaccines.

Inactivated influenza vaccines currently represent the most widely deployed vaccine type worldwide. The inactivation process employs chemicals such as formaldehyde or β-propiolactone to eliminate the virus's replicative capacity and pathogenicity while preserving its antigenic structure. Several countries, including China and the United States, have approved inactivated H5N1 subtype pandemic vaccines — China's SFDA granted approval in 2008, while the U.S. FDA approved formulations in 2007 and 2020. However, because these vaccines target previously circulating epidemic strains, regular updates to vaccine components are essential to maintain protective efficacy. Live attenuated influenza vaccines (LAIVs) utilize weakened influenza viruses that retain the ability to infect the respiratory mucosa without causing disease. Currently, no LAIVs have received approval for pandemic use. Recombinant protein vaccines represent an actively developing platform, produced by expressing specific influenza virus antigens — such as the HA protein — in heterologous expression systems including bacteria, yeast, or insect cells.

Notable progress has been achieved in novel vaccine platforms. Nucleic acid vaccines, encompassing both mRNA and DNA vaccines, offer the advantage of rapid development and production once the genetic sequence of the target virus is identified. These vaccines can be engineered to target multiple influenza strains simultaneously, potentially providing broader protection. They also eliminate the need for live virus in production, thereby simplifying the manufacturing process and reducing associated safety concerns. Several countries have initiated research and development of novel pandemic influenza vaccines for humans, with some vaccines approved to enter clinical trial stages and others receiving emergency use or conditional market approval. For example, the nanoparticle vaccine H5-MNP in Switzerland and the DNA vaccine pVAX-H5 in Russia are currently in the preclinical research stage; the self-amplifying mRNA H5N1 vaccine in Australia has entered Phase I clinical trials; and the mRNA-1018 (H7 and H5) in the United States, along with a codon-optimized mRNA influenza A(H5N1) prepandemic vaccine candidate, have advanced to Phase I/II clinical trials. In recent years, advances in bioinformatics and artificial intelligence have substantially accelerated the development of pandemic vaccine technology platforms.

China has demonstrated a transition from technology adoption to independent innovation in influenza vaccine research and development, providing valuable technical solutions and practical experience to global influenza prevention and control efforts. Madin-Darby canine kidney (MDCK) cell-based influenza vaccine technology

offers an alternative that circumvents the egg supply limitations during pandemics and avoids potential egg-adaptation mutations associated with traditional egg-based production. Currently, nine domestic companies have advanced related cell-based vaccines into clinical trials in China: two have completed Phase I clinical trials, while four others are progressing through Phase I or Phase III clinical trials. The advantages of low contamination risk and ease of scale-up production position this technology to facilitate industrial-scale manufacturing of cell culture-based influenza vaccines in China.

In universal vaccine research, most candidates remain in the preclinical stage. The Fluaxe mRNA-LNP vaccine has demonstrated cross-protection in a BALB/c mouse model, inducing strong neutralizing antibodies against H1N1, H3N2, H5N1, H7N9 subtypes, and influenza B Victoria lineage virus strains, with neutralizing titers increasing 4- to 9.6-fold. Notably, the vaccine also elicited cross-neutralizing antibodies against strains not included in the original design, encompassing multiple influenza subtypes (e.g., H2, H6, H8, H11, H13, H15, H16). In challenge experiments, the vaccine conferred 100% protection against lethal doses of H1N1 and influenza B Victoria virus while significantly reducing lung viral loads by up to 180.9-fold. Similarly, an epitope-optimized nanoparticle vaccine targeting H9N2, developed in China, successfully elicited high levels of cross-reactive antibodies against 14 H9N2 strains from distinct clades in a BALB/c mouse model. In lethal challenge experiments, this vaccine conferred 100% survival and significantly reduced lung viral loads. Furthermore, a chimeric hemagglutinin-based mRNA-LNP vaccine platform has demonstrated the capacity to elicit robust and durable stalk-specific antibody responses in a rhesus macaque model. Following a two-dose immunization regimen, the induced serum antibody responses and bone marrow plasma cells persisted for at least 10 and 8 months, respectively. Critically, passive transfer of serum collected from vaccinated macaques conferred effective protection in mice against lethal challenge with heterologous influenza viruses, confirming the functional protective efficacy of the vaccine-induced antibodies. Collectively, these data provide compelling preclinical evidence supporting the continued development of universal influenza vaccines.

Core Challenges and Future Directions for Influenza Vaccines

Despite substantial progress in vaccine technology, the development and deployment of influenza vaccines for pandemic scenarios encounter several critical obstacles. First, the extended development and production timelines of traditional vaccines limit their capacity to deliver timely protection during the initial outbreak phase. During the 2009 H1N1 pandemic, for instance, vaccine availability in most countries lagged behind peak transmission, substantially diminishing the preventive impact. Second, achieving antigenic concordance between vaccine candidates and circulating viral strains represents a fundamental challenge for pandemic vaccine effectiveness. Current influenza vaccines — predominantly inactivated and live-attenuated formulations — rely on predictions of dominant strains for the upcoming season. When these predictions prove inaccurate, antigenic mismatch occurs, substantially reducing vaccine efficacy. Moreover, ongoing viral evolution can cause circulating strains to diverge from stockpiled vaccine strains, further compromising protective immunity. Even advanced platforms such as mRNA vaccines remain susceptible to this antigenic mismatch. Consequently, exploiting conserved viral antigens to engineer a universal influenza vaccine capable of conferring broad cross-subtype protection has emerged as a pivotal strategy for transcending the inherent limitations of strain-specific vaccine approaches. The successful development of such universal vaccines would facilitate advanced manufacturing and strategic stockpiling, thereby strengthening global pandemic preparedness infrastructure.

Although universal influenza vaccines demonstrate considerable potential for overcoming the limitations of traditional vaccines, no significant breakthrough has been achieved over the past two decades, and their

development continues to face substantial challenges. First, universal vaccines target conserved viral antigens such as the HA stalk, M2 ectodomain (M2e), nucleoprotein (NP), and NA, which typically elicit relatively weak protective immune responses. Adjuvant development has emerged as a major research focus to overcome this bottleneck. However, adjuvant strategies introduce their own complexities. Adjuvant mechanisms are highly diverse and intricate, necessitating extensive experimental screening to identify optimal combinations with specific antigens. Furthermore, while adjuvants enhance immunogenicity, their potential safety risks must be rigorously controlled, imposing stringent demands on rational adjuvant design. Consequently, adjuvant technology represents not merely a solution but also a critical bottleneck in universal influenza vaccine development. Second, vaccine efficacy assessment systems require urgent updating. Traditional influenza vaccines rely on neutralizing antibody titers as correlates of protection, whereas universal vaccines may depend more heavily on T-cell immunity or on non-neutralizing antibodies. This shift toward new immunological testing paradigms necessitates the development of novel immune correlates and efficacy benchmarks, which pose significant regulatory and clinical challenges. Third, the breadth of protection remains limited. Multi-target strategies that combine conserved internal antigens (e.g., NP) with optimized surface proteins (e.g., the HA stalk) are therefore imperative to broaden the protective spectrum (21). Finally, large-scale production processes for novel vaccine platforms, including messenger RNA (mRNA) and virus-like particles (VLPs), remain underdeveloped. Given these multifaceted challenges, universal influenza vaccines will only fulfill their potential following systematic advances in antigen design, adjuvant technology, evaluation criteria, and manufacturing capabilities. Until such progress is achieved, the timely updating of vaccine strains in response to viral evolution remains the cornerstone of effective influenza immunization.

Summary

Vaccine technology has undergone a transformative evolution — from the complete absence of viral vaccines during the 1918 pandemic to the rapid deployment achieved during the 2009 H1N1 outbreak and subsequent innovations. These technological advances, combined with the global influenza surveillance network, have positioned the international community more strategically than ever to combat future influenza pandemics. Nevertheless, we face substantial challenges in translating this technological potential into effective prevention and control capabilities. Critical issues regarding the immunogenicity, evaluation systems, and production processes of universal vaccines remain unresolved. Moreover, vaccines alone cannot terminate outbreaks. Their effectiveness depends on sustained viral surveillance and integration within a comprehensive strategy that encompasses antivirals and non-pharmaceutical interventions (NPIs). Evidence demonstrates that NPIs — including mask-wearing, social distancing, and public space disinfection — that were implemented during the COVID-19 pandemic resulted in a 46.3% reduction in global influenza cases during the 2020–2021 winter season. However, following the relaxation of these measures, influenza activity rebounded dramatically, increasing by 131.7% in winter and 161.2% in summer. These empirical observations highlight the critical importance of integrating NPIs with influenza vaccination programs: during the initial emergence of novel influenza strains or periods when vaccines remain unavailable, NPIs function as an essential barrier to slow transmission and provide crucial time for vaccine development and deployment. Once vaccines become widely accessible, NPIs continue to serve a vital complementary role by addressing gaps in vaccine-induced protection, thereby collectively strengthening immune defense systems. Furthermore, emergency vaccine supply capabilities must be enhanced by leveraging established industrial platforms for seasonal influenza vaccines to enable rapid production of pandemic influenza vaccines.

To prepare for future influenza pandemics, a comprehensive strategy must be implemented across three

critical domains. First, global influenza surveillance networks require continuous strengthening to ensure the collection of accurate etiological data that supports evidence-based vaccine strain selection. China's national influenza surveillance network exemplifies this approach, encompassing 1,041 sentinel hospitals and 665 network laboratories that collectively test over one million samples annually through virus isolation and deep sequencing, thereby establishing a robust foundation for influenza prevention and control. Second, targeted research must address fundamental technical barriers in universal vaccine development, particularly those related to conserved antigen immunogenicity and scalable manufacturing processes, with the ultimate goal of eliminating dependence on strain prediction. Third, a coordinated framework that integrates vaccination programs with complementary interventions — specifically antiviral therapeutics and non-pharmaceutical measures — must be optimized to establish multilayered pandemic defense capabilities. Only through achieving synergistic integration of surveillance systems, vaccine research and development, and comprehensive control measures can we adequately prepare for the next influenza pandemic.

Fuente: China CDC Weekly. Disponible en https://n9.cl/9lk62

Será lanzada nueva red mundial de seguridad de vacunas en seis países de tres continentes

31 oct. Coincidiendo con la reunión general anual de la Red de Fabricantes de Vacunas de los Países en Desarrollo (DCVMN, por sus siglas en inglés), celebrada en Bali, Indonesia, ha sido presentada una nueva red de vigilancia de la seguridad de las vacunas.

La red, denominada Red Internacional para la Vigilancia de la Seguridad de las Vacunas (INNOVATE), se pondrá en marcha en nueve centros de seis países: Brasil, Etiopía, India, Indonesia, Kenia y Sudáfrica. La CEPI invertirá hasta 5,51 millones de dólares a lo largo de tres años para apoyar el desarrollo de esta plataforma, creada por la Red Internacional de Epidemiología Clínica Trust International (INCLEN, por sus siglas en inglés), con sede en la India, y la DCMVN, con sede en Ginebra.

La iniciativa ayudará a los investigadores a conocer las tasas de acontecimientos clínicos que se producen de forma natural, como el síndrome de Guillain-Barré, la trombosis con síndrome de trombocitopenia y la anafilaxia. Establecer estas tasas de fondo es esencial para detectar señales tempranas de seguridad que puedan estar asociadas a la inmunización y para gestionar los riesgos cuando se introduzcan nuevas vacunas.

Creación de una red mundial de seguridad para las vacunas

La plataforma INNOVATE servirá de red de vigilancia lista para su despliegue para los desarrolladores de vacunas apoyados por el CEPI, permitiendo actividades rápidas de farmacovigilancia durante los brotes. Ayudará a los fabricantes de vacunas y a las autoridades de salud pública a responder más rápida y eficazmente durante los brotes. Al disponer ya de redes de vigilancia, los países pueden evitar retrasos en el control de la seguridad de las vacunas durante las emergencias. La plataforma también apoya la Misión de los 100 Días de la CEPI, cuyo objetivo es desarrollar vacunas seguras y eficaces en los 100 días siguientes a la identificación de una futura amenaza de pandemia.

El proyecto también complementará las inversiones más amplias de la CEPI en seguridad de las vacunas,

incluidos esfuerzos similares para establecer tasas de fondo de acontecimientos adversos específicos de las poblaciones africanas e investigaciones para comprender los factores biológicos que podrían predecir acontecimientos adversos de especial interés potencialmente relacionados con la vacunación.

La red está diseñada para poder trabajar con las bases de datos existentes en los países de ingresos bajos y medios y para ser escalable con vistas a su posible integración en futuras estructuras de vigilancia mundial. Los datos generados por el proyecto INNOVATE también se utilizarán para entrenar el Motor de Preparación para Pandemias del CEPI, un asistente de IA para desarrolladores de vacunas, que servirá como colaborador científico virtual capaz de ayudar a los investigadores a identificar y sintetizar vastas franjas de información, probar hipótesis y avanzar en el desarrollo de vacunas a una velocidad sin precedentes.

El acceso equitativo es fundamental para la asociación. CEPI, DCVMN e INCLEN se han comprometido a garantizar que todos los resultados del proyecto sean accesibles a la comunidad mundial, incluidos reguladores, desarrolladores y fabricantes de todo el mundo.

El Dr. Richard Hatchett, Director General del CEPI, declaró: "El establecimiento de esta red internacional de vigilancia de la seguridad de las vacunas proporcionará un contexto vital para interpretar las señales de seguridad de las vacunas en los ensayos clínicos y las respuestas de salud pública. Al generar datos específicos de cada región sobre los efectos adversos esperados, podemos ayudar a los reguladores y fabricantes a tomar decisiones más rápidas y fundamentadas, acelerando en última instancia el acceso a vacunas seguras y eficaces durante las emergencias."

Rajinder Suri, Director General de la DCVMN, ha declarado: "El proyecto INNOVATE es el primero de su clase y establecerá un Sistema de Vigilancia Activa de Vacunas (AVSS) para medio millón de personas en seis países de ingresos bajos y medios, lo que representa una población más amplia de 2.000 millones de personas. Estoy convencido de que esto allanará el camino para la aprobación rápida de vacunas de forma más generalizada en los países de renta baja y media."

El Profesor Narendra Kumar Arora, Director Ejecutivo de INCLEN, dijo: "INNOVATE generará una base de evidencia crítica sobre las tasas de fondo de eventos clínicos graves y severos y señales, en los países de bajos y medianos ingresos, que ocasionalmente pueden estar asociados con la vacunación en todo el espectro de edad. Los resultados ayudarán a los organismos reguladores, fabricantes de vacunas, investigadores y responsables políticos a tomar decisiones fundamentadas y más rápidas sobre el uso de vacunas seguras y eficaces durante las emergencias y también a mantener la confianza de la comunidad. El éxito de esta red de vigilancia de la seguridad de las vacunas está llamado a ser un ejemplo para otros países de ingresos bajos y medios".

Acerca de la DCVMN

Developing Countries Vaccine Manufacturers Network International (DCVMN) es una alianza mundial de más de 45 fabricantes de 17 PBI y PIM, que suministran colectivamente más del 60 % de las vacunas que se adquieren a nivel global y llegan a más de 170 países de todo el mundo.

DCVMN
Developing Countries Vaccine Manufacturers Network

La misión es fortalecer la capacidad de los productores de vacunas en el Sur Global a través de la promoción de políticas, la formación técnica y el acceso a la innovación para garantizar un acceso oportuno, asequible y equitativo a las vacunas e impulsar soluciones sostenibles para satisfacer las necesidades de salud pública actuales y futuras.

Acerca de INCLEN

International Clinical Epidemiology Network Trust International (INCLEN) es una institución de investigación en ciencias de la salud pública que lleva a cabo investigación multidisciplinar colaborativa relevante para las políticas, los programas y las prácticas a través de la red de instituciones que responden a las prioridades nacionales, regionales y mundiales.

THE INCLEN TRUST INTERNATIONAL

Fuente: CEPI. Disponible en https://goo.su/WC7D9J

DCVMN calls on collective action to overcome global vaccine challenges

Nov 2. The Developing Countries Vaccine Manufacturers Network (DCVMN) called on collective action in addressing the global vaccine challenge.

The statement was delivered by DCVMN CEO Rajinder Suri when closing the 26th Developing Countries Vaccine Manufacturers Network (DCVMN) Annual General Meeting (AGM) 2025 in Denpasar, Bali from October 29–31.

"As Minister of Health, Budi Gunadi Sadikin mentioned, strengthening regional manufacturers to be closer to markets and create long term, sustainable value is essential. These words mark a moment filled with opportunities for bold action and new partnerships," Suri said during the closing session on Friday (Oct 31).

As the host of the event, PT Bio Farma (Persero) served as the co-host of this prestigious annual forum.

The event opened with remarks from several key figures, including DCVMN CEO Rajinder Suri, DCVMN Board Chair Adriansjah Azhari, Bio Farma President Director Shadiq Akasya, Indonesian Minister of Health Budi Gunadi Sadikin, and Vice Minister of Health Dante Saksono Harbuwono, then followed with a ceremonial gong.

The meeting featured a series of in-depth sessions covering critical topics, including vaccine financing, supply, and technological innovation.

Besides emphasizing the importance of collective action, Rajinder also expressed gratitude to Bio Farma as the co-host of the 26th AGM, acknowledging Shadiq Akasya and the team for their exceptional hospitality and professionalism throughout the event.

During the same session, delegates and members of DCVMN elected the new Board Chair for the 2026–2029 term.

Director of Human Capital at Bio Farma Iin Susanti was appointed as the third representative from Indonesia to serve on the DCVMN Board, following Mahendra Suhardono and Adriansjah Azhari.

"I am pleased to share that on the first day of the meeting, a new DCVMN Board Chair was elected. I am delighted to announce that In Susanti has been elected and will officially begin her term on January 1, 2026," he said.

Suri then invited all those who contributed to the success of the AGM, including panelists, Bio Farma representatives, DCVMN teams, and behind-the-scenes staff, to be acknowledged for their dedication.

He also announced that Beijing, China, will host the next DCVMN AGM, continuing the spirit of collaboration exemplified by Bio Farma's leadership in Bali.

Fuente: Antara Indonesia News Agency. Disponible en https://n9.cl/dw7hvw

COVID-19, RSV, and flu vaccines remain safe and effective

Nov 3. A systematic review of U.S.-licensed immunizations against respiratory viruses has recently been done to provide updated evidence on vaccine efficacy and safety and to inform immunization guidance during the 2025–2026 season. The findings are published in The New England Journal of Medicine.

"Backed by real-world evidence from more than 500 studies, a new review shows that this season's Covid-19, RSV, and flu vaccines continue to protect against severe illness."

Vaccine guidance needs clarity

Three predominantly circulating respiratory viruses in the U.S. are severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), respiratory syncytial virus (RSV), and influenza. These viruses are associated with significant morbidity and mortality, with hospitalization rates varying according to viral evolution and changes in population immunity.

In the U.S, the rate of hospitalization due to respiratory infections was highest for SARS-CoV-2 during the 2023–2024 season, followed by influenza and RSV. The risk of hospitalization for SARS-CoV-2 infection remained significantly higher for older adults and very young children since the onset of the coronavirus disease 2019 (COVID-19) pandemic. The risk of RSV-related hospitalization remained highest in 2023–2024 among children under five years of age.

Recent changes in the vaccine advisory process in the U.S. have disrupted immunization guidance, underscoring the need for updated evidence on vaccine efficacy and safety.

The current systematic review aimed to provide recent information on the epidemiology of respiratory viruses and the efficacy and safety of vaccines. The primary objective was to provide healthcare professionals with timely evidence for the 2025–2026 respiratory virus season.

Data behind vaccine decisions

The systematic review included U.S.-based randomized controlled trials and observational studies that investigated the epidemiology of SARS-CoV-2, RSV, and influenza viruses, as well as the efficacy and safety of vaccines targeting these viruses.

In total, 17,263 references were screened, and 511 studies met the inclusion criteria. The primary outcomes of the review were vaccine efficacy against virus-related hospitalization and other clinical parameters, as well as vaccine safety.

Vaccines still prevent severity

The study analysis reconfirmed that COVID-19, RSV, and influenza vaccines can effectively reduce the risk of severe infection and related hospitalization across populations.

COVID-19 vaccine efficacy

According to the recent estimates, the efficacy of the COVID-19 vaccine against hospitalization due to a highly transmissible subvariant of the omicron strain (XBB.1.5) was 46% among adults and 37% among immunocompromised adults. Such moderate-to-high vaccine efficacy was observed across age groups, and it remained substantial within six months after vaccination.

However, the vaccine targeting this subvariant showed lower efficacy (14 % to 54 %) during the circulation of the newer JN.1 omicron subvariant, highlighting the need for continuous viral surveillance and the timely development of strain-specific vaccines.

In a case–control study, the BNT162b2 vaccine adapted to the KP.2 subvariant showed 68 % effectiveness against hospitalization. The study analysis also revealed an association between COVID-19 vaccination and a reduced risk of long COVID among children.

RSV vaccine efficacy

All types of RSV vaccines showed substantial efficacy in preventing adverse outcomes. Specifically, maternal RSV vaccination for infant protection, monoclonal antibody treatment (nirsevimab) for infants, and RSV vaccination for older adults showed an efficacy of 68 % or more against hospitalization.

A relatively lower but substantial vaccine efficacy (approximately 70% to 73%) against hospitalization was observed among immunocompromised adults.

Influenza vaccine efficacy

Influenza vaccines showed efficacy against both symptomatic infection and hospitalization across all age groups. Specifically, the vaccine efficacy against hospitalization was 48% among adults and 67% among children. Moreover, added benefits were observed among older adults who received the recommended high-dose formulations, which achieved higher protection (up to 53%) compared with standard-dose vaccines (36–47%).

COVID-19 vaccine safety profile

The analysis of recent studies indicated that COVID-19 vaccination during pregnancy is associated with a lower risk of preterm birth. However, no association was observed with miscarriage, congenital anomalies, or stillbirth.

Myocarditis (inflammation of the heart muscle) was identified as a potential vaccine-related adverse event, occurring at rates of 1.3 to 3.1 per 100,000 doses in adolescents, with longer dosing intervals associated with a substantially lower risk.

RSV vaccine safety profile

RSV vaccination showed no significant associations with pregnancy-related hypertensive disorders, stillbirth, or congenital anomalies in randomized trials and real-world studies. Although initial evidence linked RSV vaccines to preterm birth risk, it was observed subsequently that vaccination received at 32 to 36 weeks of gestation is not associated with an increased risk.

In older adults aged 60 years or above, RSV vaccination was associated with a significantly higher risk of Guillain–Barré syndrome, a rare neurological disorder characterized by muscle weakness and numbness. However, such risk remained rare in other age groups.

Influenza vaccine safety profile

Influenza vaccines showed an excellent safety profile across age groups and during pregnancy, with a substantial number of studies showing lower risks of miscarriage, preterm birth, and congenital anomalies following vaccination.

Vaccines remain our best defense

This systematic review provides updated and independent evidence on the safety and efficacy of vaccines against respiratory viruses that are predominantly circulating in the U.S. The findings highlight the enduring value of vaccination and support the practicability of maintaining rigorous, evidence-based guidance during periods of institutional disruption.

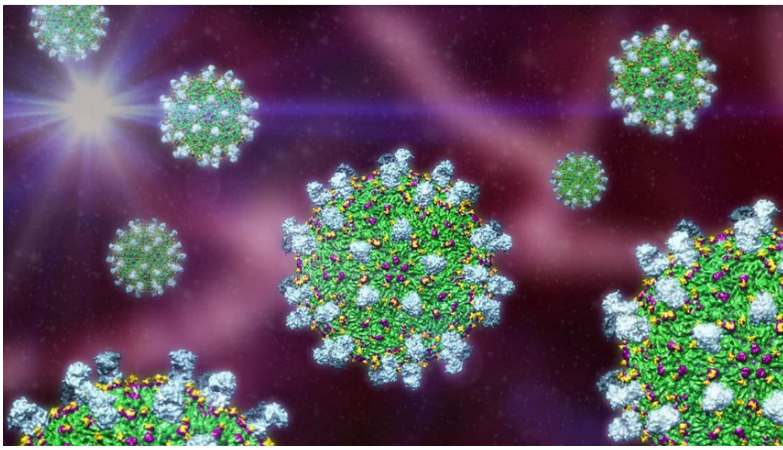
Notably, this systematic review demonstrates that available evidence supports the safety and effectiveness of co-administration of COVID-19, RSV, and influenza vaccines, with outcomes comparable to separate administration. However, evidence on this point remains limited and is based primarily on small studies. This finding supports single-visit vaccination strategies to facilitate access.

Fuente: News Medical Life Sciences. Disponible en https://n9.cl/j17hyf

Vacuna del dengue: un nuevo estudio demostró que ofrece protección durante siete años

3 nov. Según la Organización Mundial de la Salud (OMS), el dengue es una infección viral transmitida a los humanos por la picadura de mosquitos infectados con el virus DENV. Actualmente, cerca de la mitad de la población mundial está en riesgo de contraer el cuadro, con una estimación anual de entre 100 y 400 millones de casos.

Ahora, nuevos datos confirmaron que una vacuna tetravalente ofrece una protección sostenida de siete años contra la infección y las hospitalizaciones provocadas por el virus.



La vacuna puede aplicarse junto con las de hepatitis A fiebre amarilla o VPH sin afectar su eficacia ni su tolerancia (Duke-NUS Graduate Medical School)Singapore.

El hallazgo, presentado en el Congreso Mundial de Enfermedades Infecciosas Pediátricas, consolida su perfil de seguridad y eficacia, y representa un avance sin precedentes en la historia reciente de la inmunización frente a una de las amenazas virales más extendidas del planeta.

El estudio TIDES, que evaluó la vacuna TAK-003 —conocida comercialmente como Qdenga y desarrollada por Takeda— en más de 20.000 niños y adolescentes de Asia y América Latina, aportó resultados contundentes: dos dosis del esquema alcanzaron una eficacia del 61,2% en la prevención del dengue confirmado virológicamente y una reducción del 84,1% en el riesgo de hospitalización a los 4,5 años de seguimiento.

Incluso una dosis de refuerzo administrada posteriormente elevó la eficacia al 74,3%, y la protección frente a las internaciones se mantuvo en un 90,6%.

Según los investigadores, “la eficacia general se observó en los cuatro serotipos del virus del dengue a lo largo de siete años”.

Estos resultados consolidan a TAK-003 como la vacuna contra el dengue más estudiada hasta la fecha y la única aprobada para su uso sin necesidad de una exposición previa al virus, un dato clave para su implementación masiva.

Además, los ensayos clínicos confirmaron que puede aplicarse junto con otras inmunizaciones, como las de hepatitis A, fiebre amarilla o VPH, sin alterar su efectividad ni su tolerancia.

Takeda destacó que el régimen de dos dosis, administradas con tres meses de intervalo, “simplifica los calendarios de vacunación y mejora la adherencia”. La vacuna está indicada para personas a partir de los cuatro años, sin límite de edad, y su composición —basada en un virus vivo atenuado del serotipo 2 del dengue— proporciona la estructura genética necesaria para ofrecer protección frente a los cuatro serotipos existentes.

Un enemigo global impulsado por el cambio climático

El dengue es una enfermedad viral transmitida por mosquitos del género *Aedes*, principalmente *Aedes aegypti*, y se propaga con rapidez en más de cien países. La Organización Mundial de la Salud estima que cada año ocurren 390 millones de nuevas infecciones y unas 20.000 muertes.

Las condiciones que favorecen al mosquito vector se modificaron por el cambio climático y por la expansión urbana desordenada, lo que permitió que el virus dejara de ser exclusivo de regiones tropicales para alcanzar zonas templadas y urbanizadas. Estados Unidos y Europa, donde antes solo se registraban casos importados, hoy experimentan brotes autóctonos.

Esta expansión geográfica transformó al dengue en una amenaza con riesgo de pandemia. En América Latina, los casos se multiplican de manera alarmante. Argentina no es la excepción: en 2023 el país vivió su temporada más severa, con 132.237 infecciones confirmadas y 65 muertes, cifras sin precedentes que pusieron al sistema sanitario en tensión. En este contexto, la disponibilidad de una vacuna segura y eficaz representa un paso decisivo para contener futuras epidemias.

La vacuna de Takeda fue aprobada por la Administración Nacional de Medicamentos, Alimentos y Tecnología Médica (ANMAT) en abril de 2023 y comenzó a estar disponible en los principales centros de vacunación privados desde el 1 de noviembre de ese año. Su uso requiere prescripción médica, y está contraindicada para embarazadas, mujeres en período de lactancia y personas con inmunocompromiso.

Qdenga está diseñada para proteger contra los cuatro serotipos del virus: DEN-1, DEN-2, DEN-3 y DEN-4, todos presentes en la región. Cualquiera de ellos puede causar cuadros de diferente gravedad, y la prevalencia varía según el país, la temporada y las condiciones ambientales.

Un detalle relevante de la inmunidad natural del dengue es que una persona infectada por un serotipo desarrolla protección permanente contra ese mismo tipo, pero solo una defensa temporal frente a los demás. Por eso, una reinfección con otro serotipo puede producir una forma más severa de la enfermedad. La vacuna busca evitar precisamente ese ciclo de vulnerabilidad.

Siete años de evidencia y una apuesta global por la prevención

El ensayo clínico TIDES —un estudio aleatorizado, doble ciego y controlado con placebo— es el más extenso en la historia de Takeda. Reunió a participantes de ocho países endémicos, entre ellos Brasil, Colombia, Panamá, República Dominicana y Nicaragua, además de Filipinas, Tailandia y Sri Lanka. Su diseño, supervisado por un comité independiente de monitoreo de datos, incluyó cinco etapas que abarcaron

desde la evaluación inicial de eficacia hasta el seguimiento a largo plazo y la administración de una dosis de refuerzo.

Durante siete años, los investigadores analizaron el comportamiento de la vacuna frente a cada serotipo, el nivel de protección en individuos con o sin infección previa y la seguridad general del producto. Los resultados demostraron que TAK-003 mantiene un perfil de seguridad estable y sin nuevas señales adversas incluso después de la dosis de refuerzo. Este nivel de evidencia científica es poco habitual en vacunas recientes, y refuerza la confianza en su aplicación masiva.

Takeda complementa estos resultados con estudios de impacto en el mundo real. En Brasil, por ejemplo, lleva adelante un proyecto junto al municipio de Dourados y un equipo de investigación local para evaluar el efecto de la inmunización en una población endémica. En paralelo, el estudio DEN-401, en el sudeste asiático, monitorea la efectividad en niños y adolescentes después de la aprobación comercial. Ambas investigaciones forman parte de la estrategia global de farmacovigilancia continua de la compañía.

Desde su primera autorización en Indonesia en 2022, la vacuna tetravalente de Takeda fue aprobada en 41 países y, hasta septiembre de 2025, se distribuyeron 18,6 millones de dosis en 11 naciones endémicas. La Organización Mundial de la Salud la incluyó en su Lista de Vacunas Precalificadas, un reconocimiento que certifica su calidad y la habilita para ser incorporada en los programas públicos de inmunización.

La ampliación del acceso a la vacuna es otro de los ejes del plan de Takeda. La compañía colabora con gobiernos, sistemas de salud y organismos internacionales para facilitar su disponibilidad tanto en programas nacionales de vacunación como en iniciativas de salud pública.

“Takeda está ampliando el acceso global a la vacuna mediante programas nacionales de inmunización, pagadores privados y coaliciones de salud pública, con 18,6 millones de dosis distribuidas en 11 países endémicos”, señaló la empresa.

Una nueva etapa en la lucha contra el dengue

El impacto potencial de esta vacuna excede la dimensión sanitaria. Representa un punto de inflexión en la manera de abordar una enfermedad que, durante décadas, solo contó con medidas de control vectorial y campañas de prevención. Los mosquitos *Aedes aegypti* se adaptaron al entorno urbano y al cambio climático con sorprendente eficacia, lo que hizo cada vez más difícil contener su propagación.

La introducción de una vacuna segura, eficaz y de alcance universal puede modificar ese panorama. El hecho de que TAK-003 sea apta para personas con o sin infección previa elimina una de las principales limitaciones que tuvo la primera vacuna comercializada contra el dengue, cuya aplicación estaba restringida a quienes ya habían padecido la enfermedad. En ese sentido, Qdenga ofrece una herramienta más versátil y de mayor alcance, capaz de incorporarse en estrategias de inmunización de rutina.

Los especialistas destacan que el acceso equitativo será clave para que los beneficios se traduzcan en impacto real. Los países endémicos, donde el dengue causa más estragos, necesitan integrar la vacuna en sus calendarios públicos y garantizar la cobertura de las poblaciones más vulnerables. En paralelo, la educación sanitaria y el control de criaderos continúan siendo indispensables para evitar la expansión del mosquito vector.

“Las vacunas previenen de 3,5 a 5 millones de muertes cada año y transformaron la salud pública mundial”, recordaron desde la compañía, que también enfatizó su objetivo de combinar innovación.

Fuente: infobae. Disponible en https://n9.cl/37qju

Dynavax and Vaxart Partner to Advance Oral COVID-19 Vaccine

Nov 5. Dynavax Technologies and Vaxart have formed an exclusive global partnership to advance the development and potential commercialization of Vaxart's investigational oral COVID-19 vaccine, a candidate that uses a novel pill-based delivery platform designed to induce mucosal immunity. The collaboration aligns Dynavax's strategic focus on expanding its vaccine portfolio with Vaxart's push to validate its proprietary VAAST oral vaccine technology in a late-stage clinical setting. Unlike traditional injectable COVID-19 vaccines, Vaxart's oral candidate aims to stimulate immune responses at the mucosal surfaces of the respiratory tract—the primary entry point for SARS-CoV-2.

"Dynavax and Vaxart have entered into a license and collaboration agreement to advance Vaxart's investigational oral COVID-19 vaccine, with phase 2b data expected in late 2026."

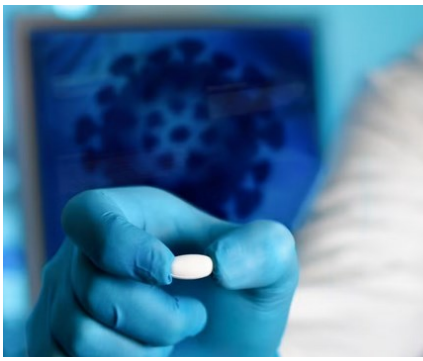
This needle-free format may improve patient acceptance, reduce transmission, and simplify global distribution by eliminating cold-chain requirements. The vaccine is currently being evaluated in a randomized, double-blind phase 2b trial comparing its efficacy to an FDA-approved mRNA vaccine. Enrollment of approximately 5,400 participants is complete, and topline data are expected in late 2026.

Under the agreement, Dynavax will pay Vaxart a $25 million upfront fee and provide an additional $5 million equity investment. Vaxart will retain responsibility for the program through the phase 2b trial and upcoming end of phase 2 meeting with the FDA. Dynavax will then decide whether to assume clinical development and commercialization. Additional milestone and royalty payments may follow if Dynavax opts in and the program advances.

"The agreement provides us with an exclusive license to a novel program while limiting our overall committed financial obligations. This gives Dynavax the opportunity to evaluate phase 2b data before further committing to invest in late-stage development. This phased approach complements the strong growth trajectory of HEPLISAV-B and aligns with our commitment to building a diversified, sustainable vaccine portfolio," Dynavax CEO Ryan Spencer, said in a statement.

Under the terms of the license agreement:

- Dynavax will pay Vaxart an upfront license fee of $25 million and make a $5 million equity investment in Vaxart at a per share price premium to market pursuant to the terms of a securities purchase agreement;
- Dynavax will receive an exclusive, worldwide license to develop and commercialize oral COVID-19 vaccines based on Vaxart's delivery platform. Vaxart will retain full operational and financial responsibility for the oral COVID-19 vaccine program through the completion of the ongoing Phase 2b clinical trial and the subsequent EOP2 meeting with the FDA;
- In addition, after receiving the results of the phase 2b clinical trial, Dynavax will pay an additional fee of $50 million to Vaxart, unless Dynavax, in its sole discretion, elects not to assume responsibility for continued clinical development of the oral COVID-19 vaccine program (in which case, the license agreement will terminate); and
- In addition, if Dynavax elects to assume responsibility for the continued development of the oral COVID-19 program, Vaxart may be entitled to receive up to $195 million in potential future regulatory milestone payments, up to $425 million in potential future net sales milestone payments, and tiered royalties at rates in the low-to-mid teens on potential future net sales of oral COVID-19 vaccines.



"We are excited to partner with Dynavax. This agreement provides a clear and well-funded path forward for our oral vaccine platform in COVID-19," Vaxart CEO Steven Lo, said in a statement. "Dynavax's investment and late-stage expertise provide critical support for our technology. We are confident in our ability to complete the ongoing phase 2b trial, and look forward to delivering a robust data package that could unlock the full potential of this collaboration and demonstrate the value of our oral vaccine platform."

Fuente: Contagion Live. Disponible en https://n9.cl/299dz6

To Finish the Pandemic Agreement, WHO Needs a Trustworthy Viral Database

Nov 5. During the COVID-19 pandemic, digital bioinformatics platforms such as Nextstrain have been instrumental in detecting the emergence of novel variants, often in real time. These tools provide actionable, time-sensitive information to public health agencies, allowing pandemic response efforts to be efficiently prioritized.

If the next pandemic started tomorrow, this work could be impossible.

Nextstrain and other virus tracking tools rely on digital sequence information (DSI). When a new pandemic virus starts to spread, hospitals and labs worldwide collect samples, sequence their genetic codes, and upload the sequences to a select number of databases—often in just 24 to 48 hours.

The largest database of viral DSI by volume is the Global Initiative on Sharing All Influenza Data (GISAID), which has faced controversy. Initially designed for influenza data and popularized because it promotes equitable scientific collaboration, GISAID's scope expanded rapidly during the COVID-19 pandemic, and the database now serves as a clearinghouse for rapid deposition of viral genome and associated sequences for several diseases. But GISAID has long been considered controversial for its opaque governance, its rules on data access and reuse, and its leadership. In particular, critics have argued that the platform has a track record of capriciously blocking some users' access to data or to the site's full features.

Most recently, in October 2025, GISAID unexpectedly stopped providing regular updates of its COVID-19 dataset to several bioinformatic services, including Nextstrain—the tool most widely used for genomic epidemiology—as well as covSPECTRUM and outbreak.info. This decision has critically diminished the world's ability to monitor and respond to new COVID-19 variants.

A similar interruption of service would be devastating if it happens in the acute phase of the next pandemic. Public health agencies and researchers reliant on Nextstrain's pre-analyzed and curated information would need to rebuild this capacity, consuming time and resources better spent elsewhere during a public health emergency.

This year's adoption of the World Health Organization (WHO) Pandemic Agreement signals an international desire for a more effective and equitable framework for pandemic preparedness and response. Yet negotiations remain underway to settle terms for the Pathogen Access Benefit Sharing (PABS) system, a mechanism by which countries on the front lines of an emerging outbreak will be guaranteed access to vaccines and other countermeasures in exchange for sharing viral samples and sequences. So far, these negotiations have assumed that access to viral DSI databases will remain unobstructed during the next global emergency.

GISAID cutting access to leading initiatives without justification shows that a multilateral system cannot be built around an independent, unaccountable nongovernmental actor that can unilaterally restrict access to data.

How Can We Move Forward?

The International Nucleotide Sequence Database Collaboration (INSDC) is the most widely used alternative to GISAID. This network includes the U.S. National Center for Biotechnology Information (NCBI), the EU's European Nucleotide Archive (ENA), and the DNA Data Bank of Japan (DDBJ). These platforms share data efficiently with each other, but are characterized by a near-total lack of governance and include problematic features such as anonymous downloads. Government-run databases also have inherent limitations, especially if mutual trust between a nation and potential submitters based overseas is lacking, or if governments can restrict funding, manipulate data, or block access in response to political disputes.

For many scientists, the new open-source, scientist-led platform Pathoplexus and its free software Loculus have been an exciting alternative to GISAID. Pathoplexus is growing slowly, but with sufficient funding could quickly become a reliable alternative.

However, Pathoplexus's participation in the PABS system is not currently guaranteed. The platform's governance documents acknowledge the important conversations occurring around PABS, but any decisions about supporting the PABS system through changes to the code that powers the database have been postponed until governance-side consensus is reached. Pathoplexus's decision is reasonable for scientists without unlimited resources, but leaves member states without a guarantee of a PABS database with buy-in comparable to GISAID.

Fuente: Think Global Health. Disponible en https://n9.cl/oxme8

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Filters activated: (vaccine[Title/Abstract]) AND (("2025/10/22"[Date - Publication] : "2025/11/02"[Date - Publication])) 564 records

Tetanus: recognition and management.

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Patentes registradas en Patentscope

Estrategia de búqueda: (Vaccine) AND DP:([22.10.2025 TO 02.11.2025]) *as the publication date 71 records.*

1.WO/2025/222396ONCOLYTIC VIRAL THERAPY FOR TREATING AND PREVENTING HUMAN PAPILLOMAVIRUS (HPV) -ASSOCIATED MALIGNANCIES

WO - 30.10.2025

Clasificación Internacional C12N 15/62Nº de solicitud PCT/CN2024/089474Solicitante VIROGIN BIOTECH (SHANGHAI) LTD.Inventor/a ZHANG, Kuan

Methods are provided for treating or preventing HPV-related disease by administering to a subject a priming vaccine, and a boosting vaccine, wherein the priming and boosting vaccine each elicit an immune response against HPV. Within various embodiments either the priming vaccine or the boosting vaccine can be a recombinant oncolytic virus which expresses an immunogenic protein derived from an HPV strain which has been mutated so as to no longer cause cancer. Within other embodiments the either the priming vaccine or the boosting vaccine can be an immunogenic protein, or a molecule which expresses an immunogenic protein, wherein said immunogenic protein is derived from an HPV strain which has been mutated so as to no longer cause cancer.

2.4641582IMPFSTOFFVERWALTUNGSSYSTEM ZUR VERHINDERUNG VON IMPFSTOFFUNFÄLLEN AUFGRUND FALSCHER IMPFUNG UND FEHLREGISTRIERUNG DES IMPFSTOFFS UND IMPFSTOFFDIENSTBEREITSTELLUNGSVERFAHREN

EP - 29.10.2025

Clasificación Internacional G16H 40/20Nº de solicitud 23903949Solicitante REAL TIME MEDI CHECK CORPInventor/a KIM HEE

There are disclosed system and method for preventing vaccination accidents due to misvaccination and misregistration of vaccines. The system comprises: an on-site vaccination information recognition device for recognizing a subject identification code of a subject to be vaccinated and information on vaccine for vaccination printed on a syringe or vial; and an on-site terminal for displaying check information that must be confirmed for vaccination of the subject to be vaccinated based on the subject identification code and information on vaccine for vaccination transmitted from the on-site vaccination information recognition device, on a screen. The screen of the on-site terminal includes: a first display area for displaying the identity information of the subject to be vaccinated corresponding to the subject identification code of the check information; and a second display area for displaying the vaccination information corresponding to the information on vaccine for vaccination of the check information.

3.20250332236CANCER IMMUNOTHERAPY ORAL VACCINE

US - 30.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud 18975316Solicitante Jovelle Laoag FernandezInventor/a Jovelle Laoag Fernandez

A method of producing an immunotherapeutic mucosal cancer vaccine which is orally administered includes amplifying and synthesizing a cancer proliferating cell nuclear antigen (caPCNA); fusing enzymatically the caPCNA with an anchoring domain gene to produce a fusion gene; cloning the fusion gene into an expression vector; transforming the expression vector into *Lactococcus lactis* (*L. lactis*) cells to produce a transformant; harvesting the transformant; and encapsulating the transformant. The transformant exhibits display of the caPCNA on the cell surface of *L. lactis*. An immunotherapeutic mucosal vaccine composition contains the orally administered vaccine to treat various types of cancer that are positive to the tumor antigen, caPCNA. A method of immunotherapy for a mucosal vaccine to treat cancer includes orally administering to a subject an amount of the immunotherapeutic mucosal vaccine composition. The immunotherapy composition triggers targeted killing of cancer cells by stimulating immune cells to treat various cancers.

4.WO/2025/224732MENINGOCOCCAL HEXAVALENT COMBINATION VACCINE

WO - 30.10.2025

Clasificación Internacional A61K 39/095Nº de solicitud PCT/IN2024/052447Solicitante TECHINVENTION LIFECARE PRIVATE LIMITEDInventor/a AHMED, Syed S

The present invention relates to combination vaccine comprising hexavalent serogroup of *Neisseria meningitidis* for prevention and prophylaxis of infection caused by meningococcal bacteria. The present invention relates to a hexavalent combination vaccine comprising serogroups A, B, C, Y, W, X of *Neisseria meningitidis*. The present invention relates to a hexavalent combination vaccine comprising polysaccharide-protein conjugate of serogroups A, C, Y, W, X and proteins of serogroup B of *Neisseria meningitidis*. The present invention specifically relates to a hexavalent combination vaccine comprising polysaccharide- protein conjugate of serogroup A, C, Y, W, X and mutated Factor H binding proteins (fHbp) of serogroup B of *Neisseria meningitidis*. The present invention further relates to the composition, use and process of preparation of hexavalent combination vaccine.

5.20250325642VACCINE COMPOSITION FOR BREAKING SELF-TOLERANCE

US - 23.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud 18262949Solicitante BAYER ANIMAL HEALTH GMBHInventor/a Thomas ILG

The present invention relates to a vaccine composition for breaking self-tolerance against a self-protein of a host, in particular for breaking self-tolerance against endogenous cytokines, in particular against the endogenous IL-4, IL-5, IL-13, IL-31 and IL-33 proteins in an animal host. The vaccine composition of the invention contains a polyprotein, a DNA encoding for the polyprotein and/or an RNA encoding for the polyprotein and one or more immunostimulatory oligonucleotides. The polyprotein comprises at least two self-protein segments of the host and one or more T-cell epitopes of non-host origin in between and/or adjacent to the at least two self-protein segments.

The present invention further concerns the use of the vaccine composition for the prevention and/or treatment of diseases including the prevention and/or treatment of a pruritic condition and/or an allergic condition. In another aspect, the present invention provides a method for detecting the presence of autoantibodies against self-proteins that can be generated with the vaccine composition of the invention.

6.WO/2025/218651RECOMBINANT ADENOVIRUS VECTOR VACCINE FORMULATION AND PREPARATION METHOD THEREFOR

WO - 23.10.2025

Clasificación Internacional A61K 9/72Nº de solicitud PCT/CN2025/088983Solicitante CANSINO BIOLOGICS INC.Inventor/a ZHAO, Xiaolong

The present invention relates to an atomized inhalable vaccine formulation and a preparation method therefor. The formulation comprises an active ingredient and auxiliary materials. The active ingredient is an antigen protein-expressing recombinant human replication-defective adenovirus at a low concentration. The auxiliary materials include a buffer, a protectant, a stabilizer, a surfactant, and an osmotic pressure regulator. The atomized inhalable vaccine formulation of the present invention can retain the good stability of a human replication-defective adenovirus vector vaccine formulation.

7.WO/2025/220620VACCINE COMPOSITION FOR TRANSDERMAL ADMINISTRATION AND METHOD FOR ADMINISTERING SAID VACCINE COMPOSITION

WO - 23.10.2025

Clasificación Internacional A61K 39/39Nº de solicitud PCT/JP2025/014574Solicitante INSTITUTE OF SCIENCE TOKYOInventor/a UCHIDA Satoshi

The present invention relates to a vaccine composition. A vaccine composition according to the present invention comprises a nucleic acid and an adjuvant, wherein the nucleic acid comprises mRNA encoding a peptide antigen. The vaccine composition has an enhanced capability of specifically producing an antibody against the peptide antigen and/or an enhanced capability of inducing antigen-specific cellular immunity against the peptide antigen compared with a control composition that does not contain an adjuvant. In a preferred aspect, the adjuvant includes (i) an adjuvant comprising a mineral acid salt, (ii) an inflammatory cytokine inducer, or, more preferably, (iii) a combination of an inflammatory cytokine inducer and an adjuvant comprising a mineral acid salt.

8.4640833NUKLEINSÄUREIMPFSTOFF GEGEN DEN AFEPOXVIRUS UND VERWENDUNG DAVON

EP - 29.10.2025

Clasificación Internacional C12N 15/39Nº de solicitud 23917335Solicitante INST MICROBIOLOGY CASInventor/a GAO FU

Provided are a polynucleotide encoding a chimeric or mixed antigen of poxvirus multiple immunogens, a related nucleic acid product thereof, and the use thereof in the preparation of a vaccine for preventing and/or treating poxvirus (in particular monkeypox virus) infection. The chimeric or mixed antigen of the poxvirus multiple immunogens encoded by the polynucleotide comprises two immunogens: a monkeypox virus A35R

protein or an antigenic fragment thereof (or an appropriate variant thereof) and a monkeypox virus M1R protein or an antigenic fragment thereof (or an appropriate variant thereof). The immunogen components of the chimeric or mixed nucleic acid vaccine based on the polynucleotide are clear, and the chimeric or mixed nucleic acid vaccine can efficiently stimulate specific immune responses (for example, generating a protective antibody) against poxvirus (in particular monkeypox virus), can be used for preventing and/or treating poxvirus (in particular monkeypox virus), and has high clinical application prospects.

9.20250332250VACCINE COMPOSITION OR KIT FOR REDUCING SIZE OR VOLUME OF TARGET TISSUE, CONTAINING GENETIC MATERIAL THAT ENCODES FOREIGN ANTIGEN

US - 30.10.2025

Clasificación Internacional A61K 39/39Nº de solicitud 18033319Solicitante SK BIOSCIENCE CO., LTD.Inventor/a Eun-som KIM

The present invention relates to a vaccine composition for reducing the size or volume of a target tissue, containing a genetic material that encodes a foreign antigen and, preferably, the composition can be provided as a vaccine composition for treating or preventing obesity. The vaccine composition can be provided as a composition for removing subcutaneous adipocytes.

10.20250325661VACCINE COMPOSITION

US - 23.10.2025

Clasificación Internacional A61K 39/39Nº de solicitud 19256289Solicitante Design-Zyme LLCInventor/a Peter Albert Petillo

Vaccine compositions comprising a plurality of immunogens attached to a carrier for inducing an immune response against a pathogen selected from the *Anaplasma, Babesia, Borrelia,* and *Chlamydia* genera. Vaccine compositions comprising multivalent carriers and related methods using the vaccine compositions in various therapeutic and prophylactic applications for inducing an immune response against, treating, or preventing an infection caused by the *Anaplasma, Babesia, Borrelia,* or *Chlamydia* pathogens, and the related diseases thereof.

11.WO/2025/222028DESIGN OF UNIVERSAL H5 INFLUENZA VIRUS VACCINE CANDIDATES VIA ANTIGEN REORIENTATION

WO - 23.10.2025

Clasificación Internacional A61K 39/145Nº de solicitud PCT/US2025/025207Solicitante CZ BIOHUB SF, LLCInventor/a KIM, Peter S.

New vaccine compositions comprising a modified antigen H5 HA bound to the surface of an adjuvant or carrier by electrostatic interactions are disclosed. The antigen of the vaccine composition is presented in a defined orientation on an adjuvant surface such that epitope accessibility is altered, and an immune response is redirected toward specific epitopes. In some embodiments the vaccine composition comprises one or more recombinant antigen polypeptides adsorbed to an alum particle. In some embodiments, the recombinant antigen polypeptide comprises a Region of Repetitive Carboxylic Groups (RRC) or a Region of Repetitive Lysyl/Guanidino Groups (RRL). The modified antigen H5 HA comprises a isoleucine to phenylalanine mutation in its HA2 subunit.

12.WO/2025/224710ENGINEERED ORTHOPOXVIRUS PROTEINS AND RELATED METHODS

WO - 30.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/IB2025/054356Solicitante VACCINE COMPANY, INC.Inventor/a POWELL, Abigail E.

Disclosed herein are engineered Orthopoxvirus proteins and polynucleotides encoding the same. Also disclosed are vaccine compositions comprising any of the engineered Orthopoxvirus proteins and polynucleotides encoding the same. Also disclosed are methods of preventing an Orthopoxvirus infection or a disease associated with an Orthopoxvirus infection in a subject comprising administering to the subject an effect amount of any one of said engineered Orthopoxvirus proteins or polynucleotides encoding the same.

13.20250325651PROTEIN-BASED NANOPARTICLE VACCINE FOR METAPNEUMOVIRUS

US - 23.10.2025

Clasificación Internacional A61K 39/145Nº de solicitud 19217892Solicitante Icosavax, Inc.Inventor/a Andrew Lawrence FELDHAUS

Provided are virus-like particle vaccines for human metapneumovirus (hMPV) in which the ectodomain of hMPV F protein is linked to, and thereby displayed on, a symmetric protein-based virus-like particle. For example, the vaccine antigen may be a N-terminal fusion of the ectodomain of hMPV F protein to a protein having a multimerization domain for a one- or two-component virus-like particle, such as a two-component icosahedral virus-like particle. Further provided are vaccine compositions, methods of manufacturing, and methods of use, e.g., immunizing a subject to generate a protective immune response to hMPV.

14.WO/2025/219610A VACCINE FOR THE TREATMENT OR PREVENTION OF PSEUDOMONAS AERUGINOSA INFECTION IN A SUBJECT.

WO - 23.10.2025

Clasificación Internacional A61K 39/104Nº de solicitud PCT/EP2025/060820Solicitante UNIVERSITY COLLEGE DUBLINInventor/a MCCLEAN, Siobhán

A vaccine for the treatment or prevention of Pseudomonas aeruginosa infection in a subject. A composition comprising one or more immunogens is provided. The composition is for use in vaccine therapy to treat or prevent P. aeruginosa infection in subject.

15.WO/2025/227066RAS VACCINE COMPOSITIONS AND METHODS OF USE

WO - 30.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2025/026433Solicitante BIONTECH US INC.Inventor/a FOLEY, Kendra

The present disclosure provides a therapy with vaccine compositions including multiepitopic polypeptides, recombinant nucleic acids encoding multiepitopic polypeptides and methods of use thereof. Also provided herein are T-cell receptors (TCRs) that can recognize one or more epitopes of the multiepitopic polypeptides. The therapy provided herein can comprise (i) a TCR, a recombinant nucleic acid encoding the TCR, or cells

comprising the TCR or the recombinant nucleic acid encoding the TCR, and (ii) a vaccine composition described herein. The methods and compositions provided herein can be used for the treatment of cancer.

16.4635510KOMBINATIONSIMPFSTOFF

EP - 22.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud 25189410Solicitante INTERVET INT BVInventor/a JACOBS ANTONIUS ARNOLDUS CHRISTIAAN

The present invention pertains to a vaccine comprising (a) an immunologically effective amount of a Streptococcus suis IgM protease antigen, (b) an immunologically effective amount of an Escherichia coli fibmrial antigen, and (c) an immunologically effective amount of a Clostridium toxoid, and also pertains to use of the vaccine in a method for protecting pigs against a pathogenic infection with Streptococcus suis, Escherichia coli and Clostridium.

17.WO/2025/218773METHOD AND USE FOR PROMOTING ANTIBODY GENERATION AND VACCINE PROTECTION

WO - 23.10.2025

Clasificación Internacional A61K 45/00Nº de solicitud PCT/CN2025/089761Solicitante ACADEMY OF MILITARY MEDICAL SCIENCES AMSInventor/a LI, Huiyan

A method and use of a CGRP signaling pathway activator for promoting antibody generation and vaccine protection, and a related pharmaceutical composition and vaccine composition.

18.4633672MULTIANTIGENER RNA-SARS-COV-2-IMPFSTOFF UND ZUGEHÖRIGE VERFAHREN

EP - 22.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud 23904762Solicitante GENEIUS BIOTECHNOLOGY INCInventor/a RYAN DAVID JAMES

The present technology provides multivalent vaccine compositions and Tcell compositions comprising viral antigens and associated methods. In some embodiments, the viral antigens are SARS-CoV-2 antigens. The vaccine compositions and the T cell compositions may comprise each of a Spike (S) peptide, a VME1 (M) peptide, an NCAP (N) peptide, an ORF7a (7a) peptide, an ORF3a (3a) peptide, an ORF8 (8) peptide, and an Nsp6 peptide.

19.2025033374755'-UTR WITH IMPROVED TRANSLATION EFFICIENCY, A SYNTHETIC NUCLEIC ACID MOLECULE INCLUDING THE SAME, AND A VACCINE OR THERAPEUTIC COMPOSITION INCLUDING THE SAME

US - 30.10.2025

Clasificación Internacional C12N 15/67Nº de solicitud 18715815Solicitante GREEN CROSS CORPORATIONInventor/a Min-Kyung SHIN

Disclosed are a synthetic nucleic acid molecule including 5'-UTR with improved translation efficiency and a vaccine/therapeutic composition including the same, and more particularly, a 5'-UTR polynucleotide that is imparted with improved translation efficiency based on the specific motif thereof, a synthetic nucleic acid

molecule including the same and a vaccine/therapeutic composition including the synthetic nucleic acid molecule. The 5'-UTR polynucleotide effectively induces expression of target proteins due to improved translation efficiency thereof and thus is useful for various RNA-based applications, for example, vaccines, in vivo/ex vivo gene therapy, etc.

20.20250325655VACCINE ADJUVANT, AND PREPARATION METHOD THEREFOR AND USE THEREOF

US - 23.10.2025

Clasificación Internacional A61K 39/25Nº de solicitud 18725171Solicitante CHENGDU MAXVAX BIOTECHNOLOGY LLCInventor/a Dexiang Chen

A vaccine adjuvant, and a preparation method therefor and a use thereof. The vaccine adjuvant is a MA105 immunologic adjuvant, and comprises (1) QS-21:50 μg/ml to 300 μg/ml; (2) Poly I:C: 400 μg/mL to 3000 μg/mL; and (3) lipid molecules constituting a vector, the vector being a mixture of a cationic liposome and a neutral liposome.

21.WO/2025/221890METHODS AND COMPOSITIONS FOR IMPROVING THE IMMUNE RESPONSE AGAINST VIRAL PATHOGENS

WO - 23.10.2025

Clasificación Internacional A61K 40/11Nº de solicitud PCT/US2025/024966Solicitante MIRROR BIOLOGICS, INC.Inventor/a HAR-NOY, Michael

Immunotherapy regimens against a viral pathogen in individuals are disclosed. The immunotherapy regimen is a universal vaccine that is administered intradermally. Multiple intradermal doses of the universal vaccine are administered to elderly individuals to prime the individual's immune system for an effective response against a viral pathogen.

22.4637815ÖLADJUVANSZUSAMMENSETZUNGEN UND IMPFSTOFFEMULSIONEN MIT SOLCHEN ÖLADJUVANSZUSAMMENSETZUNGEN

EP - 29.10.2025

Clasificación Internacional A61K 39/39Nº de solicitud 23836865Solicitante CEVA SANTE ANIMALEInventor/a GAUCHERON JÉRÔME

The invention relates to oil adjuvant compositions comprising at least one oil, at least one nonionic lipophilic surfactant, which is a sorbitan ester or a mannitan ester, and at least one nonionic hydrophilic surfactant, which is an ethoxylated fatty alcohol. The invention also relates to adjuvant oil-in-water emulsions and vaccines oil-in-water emulsions obtained from the oil adjuvant compositions of the invention, and to the use of such vaccine oil-in-water emulsions for the treatment of porcine circovirus type 2 disease and/or porcine enzootic pneumonia.

23.4635429IMPFSTOFFE MIT EINEM ANTIGEN UND INTERLEUKIN-21 ALS ADJUVANS

EP - 22.10.2025

Clasificación Internacional A61B 17/20Nº de solicitud 25180212Solicitante UNIV PENNSYLVANIAInventor/a WEINER DAVID B

Disclosed herein is a vaccine comprising an antigen and IL-21. Also disclosed herein are methods for increasing an immune response in a subject. The methods may comprise administering the vaccine to the subject in need thereof.

24.4636774INDIVIDUALISIERTE IMPFSTOFFE GEGEN KREBS

EP - 22.10.2025

Clasificación Internacional G16B 40/00Nº de solicitud 25184202Solicitante BIONTECH SEInventor/a SAHIN UGUR

The present invention relates to the provision of vaccines which are specific for a patient's tumor and are potentially useful for immunotherapy of the primary tumor as well as tumor metastases. In one aspect, the present invention relates to a method for providing an individualized cancer vaccine comprising the steps: (a) identifying cancer specific somatic mutations in a tumor specimen of a cancer patient to provide a cancer mutation signature of the patient; and (b) providing a vaccine featuring the cancer mutation signature obtained in step (a). In a further aspect, the present invention relates to vaccines which are obtainable by said method.

25.WO/2025/225716SFTSV NUCLEIC ACID-LIPID PARTICLE VACCINE

WO - 30.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/JP2025/015999Solicitante DAIICHI SANKYO COMPANY, LIMITEDInventor/a TAKESHITA, Fumihiko

Provided is a vaccine for preventing and/or treating infection and symptom onset resulting from SFTSV. These lipid particles encapsulate a nucleic acid capable of expressing Gn, Gc, or NP of SFTSV, wherein the lipid includes an amphiphilic lipid, a sterol, a PEG lipid, and a cationic lipid.

26.WO/2025/223616SEROLOGISCHER TEST ZUM NACHWEIS VON IMPFBEDINGTEN ANTIKÖRPERN GEGEN HPV

WO - 30.10.2025

Clasificación Internacional G01N 33/569Nº de solicitud PCT/DE2025/100376Solicitante HILFRICH, RalfInventor/a HILFRICH, Ralf

Die vorliegende Offenbarung betrifft einen serologischen Test zum Nachweis von impfbedingten Antikörpern gegen HPV. Bei dem serologischen Test werden Antigene einer ersten Art und Antigene einer zweiten Art genutzt. Die Antigene der ersten Art sind bezüglich in Körperflüssigkeit enthaltener erster Antikörper reaktiv, welche gegen geimpfte Proteine wirksam sind, die HPV eines ersten Typs abbilden. Die Antigene der zweiten Art sind bezüglich in Körperflüssigkeit enthaltener zweiter Antikörper reaktiv, welche gegen geimpfte Proteine wirksam sind, die HPV eines zweiten Typs abbilden. Die vorliegende Offenbarung betrifft ferner ein Verfahren zur Identifiz ierung von HPV-geimpften Personen, ein Verfahren zur Unterscheidung zwischen HPV-geimpften Personen und HPV-er krankten Personen und ein Verfahren zur Kontrolle des Impferfolges nach einer Impfung gegen HPV.

27.20250332235BREAST CANCER TUMOR CELL VACCINES

US - 30.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud 18967345Solicitante NEUVOGEN, INC.Inventor/a Bernadette Ferraro

The present disclosure provides an allogeneic whole cell cancer vaccine platform that includes compositions and methods for treating and preventing breast cancer. Provided herein are compositions containing a therapeutically effective amount of cells from one or more cancer cell lines, some or all of which are modified to (i) inhibit or reduce expression of one or more immunosuppressive factors by the cells, and/or (ii) express or increase expression of one or more immunostimulatory factors by the cells, and/or (iii) express or increase expression of one or more tumor-associated antigens (TAAs), including TAAs that have been mutated, and which comprise cancer cell lines that natively express a heterogeneity of tumor associated antigens and/or neoantigens, and/or (iv) express one or more tumor fitness advantage mutations, including but not limited to driver mutations. Also provided herein are methods of making and preparing the breast cancer vaccine compositions and methods of use thereof.

28.20250325286METHODS AND MICRONEEDLE DEVICES FOR VACCINATIONS WITH ENHANCED DELIVERY AND ACCEPTANCE

US - 23.10.2025

Clasificación Internacional A61B 17/20Nº de solicitud 19182399Solicitante Micron Biomedical, Inc.Inventor/a Devin V. McAllister

Vaccination methods include applying to a subject a microneedle patch having microneedles including a vaccine formulation including one or more infectious disease antigens. Infant and child subjects were found to tolerate application of the patch for a period effective to administer the antigen. The patch may be applied to the skin of a subject for an application period of five minutes or less, and effective to administer the antigen to the subject, wherein at least 50% of the height of the microneedle dissolves into the skin of the subject during the application period. Thermally stable vaccine formulations for the microneedles are provided. The methods may be effective to protect the subject from the infectious disease even if, prior to the applying step, the drug delivery device is transported or stored out of cold chain conditions for up to 14 days.

29.20250332242PORCINE ENDOGENOUS RETROVIRUS (PERV)-FREE PORCINE CIRCOVIRUS TYPE 2D-BASED VACCINES AND METHODS OF USE

US - 30.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud 19191147Solicitante Zoetis Services LLCInventor/a Jacqueline Gayle MARX

The invention provides a vaccine composition for use in protecting a pig against infection with porcine circovirus type 2 (PCV2), comprising a PCV1-2d chimeric whole virus which comprises and/or expresses the ORF1 replicase of PCV1 and the ORF2 of PCV2d, wherein the vaccine composition is porcine endogenous retrovirus (PERV) negative.

30.20250325647ORAL VACCINE COMPOSITION

US - 23.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud 18870285Solicitante KAICO LTD.Inventor/a Kenta YAMATO

An oral vaccine composition against porcine circovirus associated diseases, comprising the pupa or cell of a baculovirus infectious insect, which is subjected to an infection treatment with a recombinant baculovirus, into which porcine circovirus type 2 protein-encoding DNA is introduced, and a freeze-drying treatment.

31.4637807VERFAHREN ZUR BEHANDLUNG VON BAUCHSPEICHELDRÜSENKREBS MIT EINEM PD-1-ACHSENBINDENDEN ANTAGONISTEN UND EINEM RNA-IMPFSTOFF

EP - 29.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud 23848024Solicitante GENENTECH INCInventor/a MANCUSO MICHAEL ROBERT

The present disclosure provides methods for treating an individual with pancreatic cancer with an individualized cancer vaccine and a PD-1 axis antagonist.

32.4637879NADELLOSE INJEKTIONSSYSTEME

EP - 29.10.2025

Clasificación Internacional A61M 5/20Nº de solicitud 23848294Solicitante ZOETIS SERVICES LLCInventor/a DEANE STEVEN CHARLES

A gas-actuated needle-free injector is provided. Such gas-actuated needle-free injector includes a gas spring in communication with a piston. A vaccine dosing chamber is configured to receive one or more vaccines or components thereof. A ball screw is coaxial with the gas spring and the vaccine dosing chamber and configured to receive at least portion of the piston. The ball screw is configured to move the piston between a first position and a second position. Associated systems and methods are also provided.

33.20250325648DUAL-ACTION RECOMBINANT VESICULAR STOMATITIS VIRUS (RVSV)-BASED VACCINE (DAV) AGAINST COVID-19 AND INFLUENZA VIRUSES

US - 23.10.2025

Clasificación Internacional A61K 39/145Nº de solicitud 18293427Solicitante University of ManitobaInventor/a Xiaojian Yao

Described herein is a replicative Vesicular stomatitis virus (rVSV) comprising: a first Filoviridae glycoprotein comprising one or more influenza virus matrix 2 ectodomain peptide inserted into the first Filoviridae glycoprotein; and a second Filoviridae glycoprotein comprising a SARS-CoV2 Spike protein peptide inserted into the second Filoviridae glycoprotein, or a first Filoviridae glycoprotein comprising one or more influenza virus matrix 2 ectodomain peptide inserted into the first Filoviridae glycoprotein and a non-functional but immunogenic SARS-CoV2 Spike protein. The Spike protein or Spike protein peptide can be derived from different CoV-2 variants. The rVSV can be used as a Dual Action vaccine for vaccinating individuals simultaneously against both influenza virus and SARS CoV2 virus.

34.WO/2025/222045MICRONEEDLE DEVICES FOR VACCINATIONS WITH ENHANCED DELIVERY AND ACCEPTANCE

WO - 23.10.2025

Clasificación Internacional A61M 37/00Nº de solicitud PCT/US2025/025233Solicitante MICRON BIOMEDICAL, INC.Inventor/a MCALLISTER, Devin V.

Vaccination methods include applying to a subject a microneedle patch having microneedles including a vaccine formulation including one or more infectious disease antigens. Infant and child subjects were found to tolerate application of the patch for a period effective to administer the antigen. The patch may be applied to the skin of a subject for an application period of five minutes or less, and effective to administer the antigen to the subject, wherein at least 50% of the height of the microneedle dissolves into the skin of the subject during the application period. Thermally stable vaccine formulations for the microneedles are provided. The methods may be effective to protect the subject from the infectious disease even if, prior to the applying step, the drug delivery device is transported or stored out of cold chain conditions for up to 14 days.

35.WO/2025/224605SEQUENTIAL ADMINISTRATION OF ANTI-MELANOMA VACCINE AND ANTI-PD-1 MONOCLONAL ANTIBODIES

WO - 30.10.2025

Clasificación Internacional C07K 16/28Nº de solicitud PCT/IB2025/054161Solicitante CONSEJO NACIONAL DE INVESTIGACIONES CIENTÍFICAS Y TÉCNICAS (CONICET)Inventor/a ARIS, Mariana

Methods for enhancing an anti-tumor immune response to treatment in a subject who has cutaneous melanoma (CM). In particular, the subject is treated with anti-PD-1 monoclonal antibodies (MAbs) following treatment with a vaccine generating an immune response against antigens of CM cells.

36.WO/2025/221397ALBUMIN NANOPARTICLES FOR EFFICIENT VACCINE DELIVERY

WO - 23.10.2025

Clasificación Internacional A61K 31/7105Nº de solicitud PCT/US2025/020232Solicitante UNIVERSITY OF CONNECTICUTInventor/a KALLURI, Ankarao

The present disclosure provides a protein-based nanoparticle made of a protein and an amine for the delivery of a nucleic acid molecule, such as an mRNA vaccine, to a cell. The present disclosure further provides systems and methods for producing such protein-based nanoparticle including a nucleic acid molecule, and methods of delivering the nucleic acid molecule to a cell, and treating a subject with the compositions as disclosure herein.

37.20250333458LAMP CONSTRUCTS COMPRISING CANCER ANTIGENS

US - 30.10.2025

Clasificación Internacional C07K 14/47Nº de solicitud 19230626Solicitante Immunomic Therapeutics, Inc.Inventor/a Teri Heiland

The present invention provides improved LAMP Constructs comprising specific fragments of the LAMP lumenal domain to deliver cancer antigens to immune cells for enhanced processing. These LAMP Constructs can be used for the treatment of disease and in particular hyperproliferative disorders and/or cancer. The improved LAMP Constructs allow for presentation of properly configured three dimensional epitopes for production of an immune response when administered to a subject. The improved LAMP Constructs can be multivalent molecules, and/or can be provided as part of a multivalent vaccine containing two or more LAMP Constructs. The improved LAMP Constructs as described herein can also be used to generate antibodies when administered to a non-human vertebrate.

38.2025904754MERS VACCINE ANTIGEN

AU - 23.10.2025

Clasificación Internacional Nº de solicitud 2025904754Solicitante Macfarlane Burnet Institute for Medical Research and Public Health LimitedInventor/a Given, Not

39.WO/2025/226056HYBRID NANOCOMPOSITE OF POLYMER NANOPARTICLES AND CELL MEMBRANE AND MEDICAL USE THEREOF

WO - 30.10.2025

Clasificación Internacional A61K 9/51Nº de solicitud PCT/KR2025/005560Solicitante VORM BIO INC.Inventor/a KIM, Hyun Ouk

The present invention relates to: a hybrid nanocomposite of polymer nanoparticles and cell membrane; and medical use thereof. More specifically, the present invention provides a hybrid nanocomposite formed by fusion of biocompatible polymer nanoparticles and cell membrane, and a composition for drug delivery using same. The hybrid nanocomposite according to the present invention can deliver a drug, a vaccine, or a gene into cells with improved efficiency by synergistically exhibiting the properties of polymer nanoparticles and the properties of cell membrane.

40.20250325657MODIFIED VACCINIA ANKARA (MVA) VACCINE

US - 23.10.2025

Clasificación Internacional A61K 39/295Nº de solicitud 19183670Solicitante CITY OF HOPEInventor/a Javier Gordon OGEMBO

Reconstructed Modified Vaccinia Ankara (rMVA) vectors configured to encode stable Epstein Bar Virus (EBV) glycoproteins gp42, gL, gH, gp350, and gB, compositions comprising the rMVA vectors, vaccines comprising the compositions, and methods of preventing EBV infection by administering the vaccines and eliciting an innate and humoral immune response.

41.20250333475CD44 GLYCOEPITOPES AND CHIMERIC VACCINE GLYCOCONJUGATES FOR CANCER THERAPY AND SYNTHESIS METHODS THEREOF

US - 30.10.2025

Clasificación Internacional C07K 14/705Nº de solicitud 18688999Solicitante I3S - INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE, ASSOCIAÇÃOInventor/a José Alexandre RIBEIRO DE CASTRO FERREIRA

Glycopeptides derived from short CD44 isoforms lacking amino acids encoded by exons 6-14; presenting one or multiple serine or threonine residues substituted with Tn (GalNAcα-O-Ser/Thr) and/or sialyl-Tn (STn; Neu5Acα2-6GalNAcα-O-Ser/Thr) antigens. Synthesizing the glycopeptides, including one-pot glycosylation of synthetic short isoform CD44 peptides through combination with nucleotide sugars and glycosyltransferases and purification of CD44s-Tn glycopeptides. Immunogenic chimeras derived from the CD44-Tn and/or STn glycopeptides, linked, in polyvalent form, to a carrier immunogenic protein, e.g., KLH CRM197. Conjugating the synthesized CD44s-Tn glycopeptides to the immunogenic protein carriers CRM197 and KLH, generating chimeric glycopeptides, termed CRM197-CD44s-Tn and KLH-CD44s-Tn. CD44-Tn/STn

glycopeptides or compositions thereof for treating cancer and pre-neoplastic diseases, e.g., neoplastic diseases expressing short CD44 isoforms, through generating antibodies against cancer cells and treating/preventing cancer by vaccination. The glycopeptides, compositions, synthesis methods and uses can be employed in treating cancer, alone or in combination with immune checkpoint inhibitor therapy, chemotherapy, and radiotherapy.

42.20250333766RECOMBINANT HVT VECTORS EXPRESSING MULTIPLE ANTIGENS OF AVIAN PATHOGENS AND USES THEREOF

US - 30.10.2025

Clasificación Internacional C12N 15/869Nº de solicitud 19265498Solicitante Boehringer Ingelheim Animal Health USA Inc.Inventor/a Michel Bublot

A vaccine includes a recombinant herpesvirus of turkeys (HVT) vector. The HVT vector has a heterologous polynucleotide coding for and expressing an Infectious Bursal Disease Virus (IBDV) viral protein 2 (VP2) antigen and a heterologous polynucleotide coding for and expressing an Infectious Laryngotracheitis Virus (ILTV) glycoprotein D (gD) antigen. The two heterologous polynucleotides are inserted into one locus in a non-essential region of the HVT genome selected from intergenic region 1 locus, intergenic region 2 locus, intergenic region 3 locus, UL43 locus, US10 locus, US2 locus, and SORF3/US2 locus. The two heterologous polynucleotides are linked by internal ribosome entry site (IRES). The expression of the two heterologous polynucleotides is driven by a cytomegalovirus (CMV) immediate early (IE) promoter.

43.WO/2025/227011IMMUNOTHERAPY COMPOSITIONS AND METHODS FOR TREATMENT OF TAUOPATHY, NEUROINFLAMMATION, AND SYNAPTIC LOSS

WO - 30.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2025/026329Solicitante UNM RAINFOREST INNOVATIONSInventor/a BHASKAR, Kiran

This disclosure describes, in one aspect, a method comprising administering to a subject in need thereof a pharmaceutical composition. The pharmaceutical composition comprising pharmaceutically acceptable carrier and an antigen presentation component. The antigen presentation component comprises a multivalent immunogen display vaccine format and a microtubule associated tau protein (MAPT) component linked to at least a portion of the antigen presentation component. The MAPT component comprises a sequence that is at least 90% identical to SEQ ID NO: 1; comprises no more than 30 amino acids; and comprises at least one amino acid residue modified to comprise a PO_3H_2 group.

44.WO/2025/223887PROPHYLAXE GEGEN INFEKTIONEN DURCH STREPTOCOCCUS PNEUMONIAE

WO - 30.10.2025

Clasificación Internacional A61K 39/09Nº de solicitud PCT/EP2025/060061Solicitante STRATHMANN GMBH & CO. KGInventor/a BEHNKE, Bert

Die vorliegende Erfindung betrifft eine Impfstoffzusammensetzung zur prophylaktischen Verwendung gegen Infektionen durch Streptococcus pneumoniae. Diese enthält inaktivierte Bakterien von Escherichia coli, Morganella morganii, Proteus mirabilis, Klebsiella pneumoniae und Enterococcus faecalis sowie vorzugsweise Dextran und eine Aluminiumverbindung als Adjuvans.

45.20250327039VIRAL PREPARATIONS AND METHODS FOR TREATING AND MODULATING MITOCHONDRIAL EFFECTS OF CORONAVIRUS INFECTIONS.

US - 23.10.2025

Clasificación Internacional C12N 7/00Nº de solicitud 19081316Solicitante Julian DaichInventor/a Julian Daich

Attenuate coronavirus species that are able to fully replicate and spread are proposed together with the methods of obtaining thereof. The proposed coronavirus species are intended to treat and prevent viral infections including all those caused by coronavirus species that affect humans as the COVID-19 caused by the SARS-CoV2. Compared with other treatment or vaccine alternatives, the availability of such attenuate coronavirus species does not require of significant distribution and production resources. Some of the embodiments of the invention involve the use of the attenuate coronavirus species in formulations or compositions that have to be approved as safe and effective for therapeutic use in specific territories by a valid regulatory agency as the Food and Drug Agency (FDA) in the United States.

46.20250325653LIVE-ATTENUATED SARS-COV-2 VACCINE

US - 23.10.2025

Clasificación Internacional A61K 39/215Nº de solicitud 18868378Solicitante The U.S.A., as represented by the Secretary, Department of Health and Human ServicesInventor/a Tony T. Wang

Engineered SARS-CoV-2 variants having a combination of attenuating modifications, and their use as live-attenuated SARS-CoV-2 vaccines, are described. The recombinant genome of the live-attenuated SARS-CoV-2 encodes a modified spike (S) protein with a deletion of the polybasic site (ΔPRRA); encodes a modified non-structural protein 1 (Nsp1) with K164A and H165A substitutions; and includes a mutation that prevents expression of open reading frames (ORFs) 6, 7a, 7b and 8. The disclosed live-attenuated SARS-CoV-2 retain the capacity to infect and replicate in mammalian cells. Immunogenic compositions that include a live-attenuated SARS-CoV-2 and methods of eliciting an immune response against SARS-CoV-2 in a subject are also described. Further disclosed are a collection of reverse genetics plasmids that include the complement of the recombinant genome of the live-attenuated SARS-CoV-2 and methods of producing a live-attenuated SARS-CoV-2 using the reverse genetics plasmids.

47.20250327038VIRAL PREPARATIONS AND METHODS FOR TREATING AND MODULATING MITOCHONDRIAL EFFECTS OF CORONAVIRUS INFECTIONS.

US - 23.10.2025

Clasificación Internacional C12N 7/00Nº de solicitud 19080971Solicitante Julian DaichInventor/a Julian Daich

Attenuate coronavirus species that are able to fully replicate and spread are proposed together with the methods of obtaining thereof. The proposed coronavirus species are intended to treat and prevent viral infections including all those caused by coronavirus species that affect humans as the COVID-19 caused by the SARS-CoV2. Compared with other treatment or vaccine alternatives, the availability of such attenuate coronavirus species does not require of significant distribution and production resources. Some of the embodiments of the invention involve the use of the attenuate coronavirus species in formulations or compositions that have to be approved as safe and effective for therapeutic use in specific territories by a valid regulatory agency as the Food and Drug Agency (FDA) in the United States.

48.20250325685PEPTIDE VACCINES AGAINST INTERLEUKIN-31

US - 23.10.2025

Clasificación Internacional A61K 47/64Nº de solicitud 19214566Solicitante Zoetis Services LLCInventor/a Gary Francis Bammert

A vaccine composition for immunizing and/or protecting a mammal against an IL-31 mediated disorder is provided, wherein the composition includes: the combination of a carrier polypeptide and at least one mimotope selected from a feline IL-31 mimotope, a canine IL-31 mimotope, a horse IL-31 mimotope, and a human IL-31 mimotope; and an adjuvant. Such vaccines can be in the form of pharmaceutical compositions useful for treating or protecting mammals such as cats, dogs, horses, or humans against IL-31-mediated disorders.

49.4633667VERFAHREN ZUR VERABREICHUNG VON IMPFSTOFFEN AN SALMONIDEN

EP - 22.10.2025

Clasificación Internacional A61K 39/02Nº de solicitud 23844436Solicitante ZOETIS SERVICES LLCInventor/a MONJANE ADÉRITO LUIS

The disclosure provides compositions and methods for salmonid vaccination against PMCV and at least one other pathogen

50.20250332247IMPROVED CORONAVIRUS VACCINE

US - 30.10.2025

Clasificación Internacional A61K 39/215Nº de solicitud 18926721Solicitante ACADEMIA SINICAInventor/a Che MA

The present disclosure provides a glycoengineered SARS-COV-2 spike protein which is capable of eliciting an enhanced immune response relative to a native spike protein of SARS-COV-2 and its variants. The glycoengineered spike protein exposes the glycosylation sites and at the same time preserves the tertiary structure of the spike protein. The present disclosure therefore provides improved immunogens, vaccines, and methods for better prevention and treatment of the emerging coronavirus infections.

51.4639050KÄLTESPEICHERVORRICHTUNG

EP - 29.10.2025

Clasificación Internacional F25D 3/08Nº de solicitud 24704780Solicitante B MEDICAL SYSTEMS SARLInventor/a PIRES DANIEL

An ice-lined cold storage device, notably a vaccine storage device, is provided with an indication of simulated autonomy indicating the duration during which a payload will be maintained below a pre-specified temperature without use of a cooling circuit to remove energy from the cold storage device. The simulated autonomy is provided using a temperature model which uses data which is specific to the ice-lined cold storage device and by: a) detecting an initial ambient temperature, an initial storage compartment temperature and an initial ice-lining temperature of the ice-lined cold storage device; b) running a first simulation using the temperature model and using the initial ambient temperature, the initial storage compartment temperature and the initial ice-lining temperature to determine a first simulated storage compartment temperature after a first simulation time step; c) running one or more subsequent simulations, each subsequent simulation being run using the

temperature model and using data created in a previous simulation, to determine a subsequent simulated storage compartment temperature after a subsequent simulation time step; and d) determining the simulated autonomy of the ice-lined refrigerator using at least one of the subsequent simulated storage compartment temperature(s).

52.20250332246ENHANCED EXPRESSION VIA AUTOTRANSPORTERS

US - 30.10.2025

Clasificación Internacional A61K 39/215Nº de solicitud 18707809Solicitante University of Virginia Patent FoundationInventor/a Steven L. Zeichner

Provided are expression cassettes that include coding sequences encoding at least one polar amino acid or at least one expression enhancement peptide that includes one or more polar amino acids, a polypeptide of interest, and a bacterial autotransporter β-barrel polypeptide. In some embodiments, the coding sequences are in frame with each other such that transcription and translation of the expression cassette in a host cell produces a fusion protein with the polar amino acid and/or the expression enhancement peptide, the polypeptide of interest, and the bacterial autotransporter β-barrel polypeptide expressed on the surface of the host cell. Also provided are expression vectors and host cells that include the expression cassettes, vaccine compositions based on the presently disclosed compositions, and methods for inducing immune responses, enhancing expression of the polypeptides of interest, for preventing or treating viral infections such as but not limited to coronavirus infections.

53.4637809SYSTEME, VERFAHREN UND ZUSAMMENSETZUNGEN ZUR HERSTELLUNG VON IMPFSTOFFEN MIT INAKTIVIERTEN/GEDÄMPFTEN PATHOGENEN

EP - 29.10.2025

Clasificación Internacional A61K 39/02Nº de solicitud 23908307Solicitante UNIV COLORADO STATE RES FOUNDInventor/a GOODRICH RAYMOND P

Provided herein are methods for inactivating an attenuated pathogen, the methods comprising contacting the microbe with UV light in the presence of riboflavin such that the integrity of the antigenic proteins of the pathogen is preserved In some embodiments, the viral pathogen is a African Swine Fever Virus (ASFV). Vaccine compositions comprising attenuated pathogen, and methods of use thereof, are also provided.

54.4640278FISCHIMPFSTOFF UND VERFAHREN ZUR VERWENDUNG

EP - 29.10.2025

Clasificación Internacional A61P 31/04Nº de solicitud 24305634Solicitante MICROXPACEInventor/a OBREGON ALVAREZ DASIEL

The invention pertains to fish vaccines against parasitic copepods, using bacterial products obtained from bacteria of the microbiota of the copepods.

55.20250325659USE OF TOLL-LIKE RECEPTOR 2 (TLR-2) AGONIST FOR MODULATING HUMAN IMMUNE RESPONSE

US - 23.10.2025

Clasificación Internacional A61K 39/39Nº de solicitud 18972689Solicitante Children's Medical Center CorporationInventor/a David J. Dowling

Provided herein are Toll-like receptor 2 (TLR2) agonists for use in enhancing human immune response and/or as adjuvants in vaccines. The TLR2 agonists include thiophenes, imidazoles, or phenyl-containing compounds, which may be compounds of Formulae (I), (II), (III), and pharmaceutically acceptable salts, solvates, hydrates, polymorphs, co-crystals, tautomers, stereoisomers, isotopically labeled derivatives, prodrugs, and compositions thereof. The compounds described herein are used as enhancers of an immune response (e.g., innate and/or adaptive immune response), and are useful in treating and/or preventing a disease, as adjuvants in a vaccine for the disease, (e.g., proliferative disease, inflammatory disease, autoimmune disease, infectious disease, or chronic disease). Also provided in the present disclosure are pharmaceutical compositions, kits, methods, and uses including or using a compound described herein.

56.4634144VERFAHREN ZUR GEWINNUNG VON PFLANZENBASIERTEM SQUALEN

EP - 22.10.2025

Clasificación Internacional C07C 7/00Nº de solicitud 23818465Solicitante EVONIK OPERATIONS GMBHInventor/a JAKOB ANDREAS

Process for the production of a squalene composition having an enriched squalene content, in particular of a pharmaceutical squalene composition, form a squalene comprising composition having a lower squalene content, in particular from a plant-based oil having a lower squalene content, comprising the steps of i) providing a composition comprising squalene having a lower squalene content, ii) subjecting the squalene comprising composition having a lower squalene content to a purification step at a temperature below the boiling point of squalene, and obtaining an intermediate composition with a squalene content, and iii) performing a chromatography step with the intermediate composition with a squalene content, and iv) obtaining a squalene composition having the enriched squalene content. Furthermore, objects of the invention are also a squalene composition having an enriched squalene content, in particular a pharmaceutical squalene composition, in particular a parenteral pharmaceutical composition, more preferred a vaccine and an oil-in water emulsion comprising a squalene composition.

57.WO/2025/221993COMPOSITIONS AND METHODS FOR PRODUCING IL-16

WO - 23.10.2025

Clasificación Internacional A61K 35/17Nº de solicitud PCT/US2025/025155Solicitante IMMUNITYBIO, INC.Inventor/a SIMON, Barry

An NK cell lysate is provided herein that includes a salt solution, a cytotoxic protein, and IL-16 endogenously produced by NK cells. Also provided is a composition including the NK cell lysate and optionally NK cell exosomes. A method of preparing the NK cell lysate and composition is provided herein, including lysing the NK cells to produce a lysate and removing intact NK cells, NK cell debris, and NK cell genomic DNA from the lysate, as well as a method for generating IL-16 from NK cells. Also provided herein are methods for stimulating an immune response, preventing, reducing the occurrence of, and/or treating an infection; preventing, reducing the occurrence of, and/or treating cancer; and initiating, enhancing, or prolonging an

anti-tumor response. Also provided is a combination therapy including administering the NK cell lysate or composition and a therapeutically active agent, and a vaccine including the NK cell lysate or composition.

58.4637718LIPIDNANOPARTIKEL MIT STEROLMODIFIZIERTEN PHOSPHOLIPIDEN

EP - 29.10.2025

Clasificación Internacional A61K 9/127Nº de solicitud 23905973Solicitante SUZHOU ABOGEN BIOSCIENCES CO LTDInventor/a LING DANDAN

Provided is LNPs comprising phospholipids containing a sterol moiety. LNPs comprising such phospholipids have potential applications in mRNA vaccine technology. Provided are compositions comprising the LNPs and methods for using the LNPs or the compositions described above.

59.4633674SCHWEINEINFLUENZA-IMPFSTOFFZUSAMMENSETZUNGEN UND VERFAHREN DAFÜR

EP - 22.10.2025

Clasificación Internacional A61K 39/145Nº de solicitud 23904695Solicitante UNIV CORNELLInventor/a DIEL DIEGO

The present disclosure provides novel sequences, vectors, and pharmaceutical compositions for the treatment of IAV in swine. Methods of using the novel sequences, vectors, and pharmaceutical compositions are also provided, including for induction of an immune response in animals and for prevention of an IAV infection in an animal.

60.3039616ANTI-IL-6 VACCINE COMPOSITION

ES - 23.10.2025

Clasificación Internacional C07K 7/04Nº de solicitud 12778787Solicitante PeptinovInventor/a DESALLAIS, Lucille

61.WO/2025/222144ANTIBODIES AND VACCINES HAVING VH3-21 AND VL1-40 BINDING DOMAINS AND USES THEREOF

WO - 23.10.2025

Clasificación Internacional C07K 16/46Nº de solicitud PCT/US2025/025408Solicitante FRED HUTCHINSON CANCER CENTERInventor/a MCGUIRE, Andrew

An antibody against respiratory syncytial virus (RSV) and/or human metapneumovirus (HMPV) is described herein. The antibody includes binding domains from anti-idiotypic monoclonal antibodies (ai-mAbs) that bind an RSV neutralizing antibody VH3-21/VL1-40 presented as B cell receptors (BCRs). The antibodies can be used as a vaccine to selectively elicit antibodies capable of neutralizing RSV and/or HMPV without a need for somatic mutation. The vaccines are particularly useful to treat and/or reduce the risk of RSV and/or HMPV infection in infants.

62.20250326712IONIZABLE LIPIDS

US - 23.10.2025

Clasificación Internacional C07C 323/60Nº de solicitud 18866766Solicitante eTheRNA immunotherapies NVInventor/a Stefaan DE KOKER

The present invention generally relates to the field of ionizable (also termed cationic) lipids, and in particular provides a novel type of such lipids as represented by any of the formulae disclosed herein. The present invention further provides methods for making such lipids as well as uses thereof, in particular in the preparation of nanoparticle compositions, more in particular nanoparticle compositions comprising nucleic acids. It further provides vaccine formulations and pharmaceutical formulations comprising nanoparticle compositions based on the ionizable lipids disclosed herein.

63.20250327110HIGH THROUGHPUT MULTIPLEXED SERUM BASED BACTERICIDAL ASSAYS (SBAS), AND KITS FOR USE THEREIN

US - 23.10.2025

Clasificación Internacional C12Q 1/18Nº de solicitud 19185485Solicitante SUNFIRE BIOTECHNOLOGIESInventor/a Robert L. Burton

The present disclosure provides multiplexed serum-based assays (SBA's) for detecting the efficacy and/or specificity of a putative vaccine to elicit protective or functional antibodies which elicit complement-mediated killing of 3 or more different gram-negative bacterial strains optionally of the same genus, wherein the SBA is conducted in multiplex format using (i) each of said 3 or more gram-negative bacterial strains which respectively are resistant to a different antibiotic relative to the other gram-negative bacterial strains and (ii) complement, e.g., baby rabbit complement.

64.4637813RHINOVIRUS-MRNA-IMPFSTOFF

EP - 29.10.2025

Clasificación Internacional A61K 39/125Nº de solicitud 23836815Solicitante SANOFI PASTEURInventor/a BERRY CATHERINE

The present invention provides a method for identifying the amino acid sequence of a naturally occurring polyprotein from a group A or C rhinovirus that can be used as an immunogen capable of eliciting an immune response against rhinoviruses from multiple serotypes within the same group. The invention also provides immunogenic compositions that comprise at least one mRNA comprising a non-naturally occurring optimized nucleic acid encoding a polyprotein identified by this method.

65.WO/2025/219529CANCER VACCINE

WO - 23.10.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/EP2025/060664Solicitante GENEVATION LTDInventor/a CHAKRABORTY, Prasun

The invention relates to nucleic acid molecules comprising an IL-12 sequence and a neoantigen cassette. The invention also relates to vaccines comprising the nucleic acid molecule(s). In addition, the invention relates to methods of producing the vaccines and uses of the nucleic acid molecules or vaccines in treating cancer.

66.WO/2025/219478RECOMBINANT YEAST CELL EXPRESSING BACTERIAL ANTIGENS INTRACELLULARLY AND ON ITS EXTRACELLULAR SURFACE AND ITS VACCINE APPLICATION

WO - 23.10.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/EP2025/060561Solicitante INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENTInventor/a PRADO MARTINS, Rodrigo

The present invention relates to a recombinant yeast cell genetically modified to express (i) at least one first bacterial antigen or an immunogenic fragment thereof intracellularly and (ii) at least one second bacterial antigen or an immunogenic fragment thereof on its extracellular surface, the at least one first bacterial antigen or an immunogenic fragment thereof being identical to or different from the at least one second bacterial antigen or an immunogenic fragment thereof. The present invention also concerns this recombinant yeast for use in vaccines and in treating or preventing bacteria-caused pathologies in livestock.

67.4635486INJIZIERBARE HYDROGELE ZUR KONTROLLIERTEN FREISETZUNG VON IMMUNMODULATORISCHEN VERBINDUNGEN

EP - 22.10.2025

Clasificación Internacional A61K 9/51Nº de solicitud 25193215Solicitante UNIV LELAND STANFORD JUNIORInventor/a ROTH GILLIE A

A vaccine delivery system comprises: a hydrogel comprising a hydrophobically-modified cellulose derivative non-covalently cross-linked with a plurality of poly(ethylene glycol)-block-poly(lactic acid) (PEG-PLA) nanoparticles, wherein the hydrogel comprises about 1 wt% of the hydrophobically-modified cellulose derivative and about 5 wt% of the PEG-PLA nanoparticles; a first immunomodulatory compound encapsulated in the hydrogel, the first immunomodulatory compound comprising an immune-activating compound; and a second immunomodulatory compound encapsulated in the hydrogel, the second immunomodulatory compound comprising an antigen, wherein the hydrogel is configured to form a depot when administered to a subject.

68.4637810LIPIDNANOPARTIKEL ZUR VORBEUGUNG VON TUBERKULOSE ODER ANDEREN MYKOBAKTERIELLEN INFEKTIONEN

EP - 29.10.2025

Clasificación Internacional A61K 39/04Nº de solicitud 23908620Solicitante AKAGERA MEDICINES INCInventor/a FULTON ROSS

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 phosphatidyl serine 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.

69.20250332243METHODS OF MANUFACTURING PORCINE ENDOGENOUS RETROVIRUS (PERV) FREE ANIMAL HEALTH VACCINES

US - 30.10.2025

Clasificación Internacional A61K 39/12Nº de solicitud 19191355Solicitante Zoetis Services LLCInventor/a Jacqueline Gayle MARX

The invention provides a method of preparing a vaccine composition. The method includes infecting gene-edited porcine endogenous retrovirus (PERV) negative swine cells with a microorganism which expresses at least one protein antigen capable of inducing protective immunity in an animal against an infectious agent; culturing the infected cells in culture medium to propagate the microorganism; and harvesting the propagated microorganism from the culture medium to obtain a fraction comprising a PERV free antigen for use in immunizing an animal against the infectious agent.

70.20250333710GENOME EDITED CANCER CELL VACCINES

US - 30.10.2025

Clasificación Internacional C12N 5/09Nº de solicitud 19030374Solicitante The Research Foundation for the State University of new YorkInventor/a Kaiming Ye

A cancer vaccine technology is provided which knocks out expression of cell surface immune checkpoint proteins, to facilitate their processing by immune cells, and optionally by knocking-in the expression of cytokines to boost immune response. Non-replicating tumor cells lacking cell surface CD47 are highly effective immunizing agents against subcutaneous mouse melanoma. Whole-cell vaccines inhibited tumor growth, and immunophenotyping showed a dramatic increase in activated effector cell subsets and M1-type macrophages aided by a significant reduction in the tumor-associated macrophage and myeloid derived suppressor cell compartments. A remarkable downregulation of cell surface CD47 was observed in the tumors that did escape after vaccination with genetically modified cells, suggesting the intricate involvement of CD47 in a prophylactic situation. An effective vaccination strategy to increase tumor-specific immune response in solid tumors is provided to improve the outcome of cancer immunotherapy.

71.WO/2025/219597FISH VACCINE AND METHOD OF USE

WO - 23.10.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/EP2025/060794Solicitante MICROXPACEInventor/a OBREGON ALVAREZ, Dasiel

The invention pertains to fish vaccines against parasitic copepods, using bacterial products obtained from bacteria of the microbiota of the copepods.

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

Estrategia de búqueda: *vaccine.ti. AND @PD>="20251022"<=20251102 30 records*

Document ID	Title	Inventor	Applicant Name
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US 20250332235 A1	BREAST CANCER TUMOR CELL VACCINES	Ferraro; Bernadette et al.	NEUVOGEN, INC.
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US 20250332242 A1	PORCINE ENDOGENOUS RETROVIRUS (PERV)-FREE PORCINE CIRCOVIRUS TYPE 2D-BASED VACCINES AND METHODS OF USE	MARX; Jacqueline Gayle et al.	Zoetis Services LLC
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US 12453766 B2	RSV RNA vaccines	Ciaramella; Giuseppe et al.	ModernaTX, Inc.
US 12454554 B2	Influenza virus vaccines and uses thereof	Jongeneelen; Mandy Antonia Catharina et al.	JANSSEN VACCINES & PREVENTION B.V.
US 12453763 B2	Human vaccine compositions and methods for treating leukemia	Gaensler; Karin	The Regents of the University of California
US 12454680 B2	Vero cell line that can be suspension-cultured in serum-free medium, preparation method therefor, and method for preparing viruses for vaccines by using novel cell line	Kwak; Jun-seok et al.	SK BIOSCIENCE CO., LTD.

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