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

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

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Vacunas de ARN mensajero: una breve actualización

Las vacunas de ARN mensajero (ARNm) han emergido como una innovadora plataforma en la prevención de enfermedades infecciosas, destacándose especialmente durante la pandemia de COVID-19. Estas vacunas representan un avance significativo en la biotecnología y la inmunología, utilizando el ARNm para instruir a las células del cuerpo a producir proteínas específicas que desencadenan una respuesta inmune. Su impacto en la prevención de futuras pandemias puede ser profundo y multifacético.

A continuación, se detallan algunos de los aspectos más relevantes:

- Amplio rango de aplicaciones: Además de combatir infecciones virales como la COVID-19, la tecnología ARNm está siendo explorada para una variedad de enfermedades entre las que se incluyen gripe estacional, VIH y cáncer.
- Desarrollo Rápido de Vacunas: Los científicos pueden adaptar las vacunas existentes o desarrollar nuevas formulaciones sin las limitaciones de las tecnologías tradicionales. Esta tecnología permite desarrollar vacunas en un tiempo récord. Por ejemplo, Moderna creó su vacuna contra COVID-19 en sólo dos días después de recibir la secuencia genética del virus. Esta rapidez es crucial para responder a brotes emergentes, lo que podría ser vital en el caso de nuevas pandemias.
- Producción Rápida: La tecnología permite una producción rápida y escalable, facilitando la adaptación a nuevas variantes del virus.
- Seguridad: El ARNm no es infeccioso y no puede integrarse en el ADN celular, lo que minimiza riesgos de mutaciones o efectos adversos graves.
- Eficacia: Las vacunas de ARNm han mostrado altos niveles de seroconversión y seroprotección en ensayos clínicos, con tasas superiores al 87% en algunos estudios.

Vacunas de ARNm existentes

Vacunas contra la COVID-19

- Pfizer-BioNTech (Comirnaty): Esta fue una de las primeras vacunas de ARNm aprobadas para uso en emergencia durante la pandemia de COVID-19. Ha demostrado ser altamente efectiva en la prevención de infecciones severas y hospitalizaciones.
- Moderna (Spikevax): Similar a la vacuna de Pfizer-BioNTech, la vacuna de Moderna también ha mostrado una alta eficacia y ha sido administrada a millones de personas en todo el mundo. Recientemente, se han actualizado las fórmulas para incluir componentes que abordan variantes emergentes del virus.

Vacunas de ARNm en desarrollo

Los proyectos futuros de vacunas de ARNm abarcan una amplia gama de enfermedades, desde infecciones virales hasta tratamientos oncológicos.

Vacunas en desarrollo para el cáncer

- mRNA-4157 (Moderna): Esta vacuna terapéutica personalizada está diseñada para pacientes con melanoma metastásico y se administra junto con el fármaco pembrolizumab.
- BioNTech: La compañía está desarrollando varias vacunas de ARNm para tratar diferentes tipos de cáncer, incluyendo melanoma y cáncer de próstata.

La investigación sobre vacunas de ARNm para tratar diferentes tipos de cáncer está avanzando rápidamente. Estas vacunas están diseñadas para potenciar la respuesta inmunitaria contra células cancerosas ya diagnosticadas. Se están llevando a cabo ensayos clínicos para evaluar su eficacia. Aunque ninguna ha sido aprobada aún, los resultados preliminares son prometedores.

Otras vacunas experimentales de ARNm

- Vacuna contra el Zika (Moderna): Esta vacuna busca ofrecer protección contra el virus Zika y ya ha alcanzado la fase 2 de ensayos clínicos. Se espera que esta vacuna induzca respuestas inmunitarias efectivas, basándose en estudios preclínicos que mostraron fuertes respuestas de anticuerpos neutralizantes.
- Vacunas contra el virus respiratorio sincitial (VRS): Actualmente en fase 3 de ensayos clínicos, esta vacuna busca prevenir infecciones por VRS, que son especialmente peligrosas para niños y ancianos.
- Vacuna contra la gripe (mRNA-1010): Esta vacuna experimental codifica hemaglutininas de múltiples subtipos del virus gripal. Está diseñada para proteger contra múltiples subtipos del virus de la gripe, se encuentra en fase 3. Además, hay candidatos combinados que buscan abordar tanto la gripe como el SARS-CoV-2.
- Vacuna contra el Citomegalovirus (CMV) (Moderna): La vacuna mRNA-1647 está en fase 2 de ensayos clínicos y se dirige a una infección común que puede causar complicaciones graves en personas con sistemas inmunitarios comprometidos.
- Virus de Inmunodeficiencia Humana (VIH): Investigaciones están en marcha para desarrollar una vacuna que pueda inducir respuestas inmunitarias efectivas contra este virus.
- Se están explorando vacunas de ARNm para otras enfermedades infecciosas, como malaria, tuberculosis y virus del herpes. BioNTech tiene varias iniciativas en fase 1 para estas enfermedades.

Las compañías como Moderna y BioNTech están a la vanguardia de este desarrollo, ofreciendo un futuro prometedor para esta tecnología innovadora.

Desafíos de las vacunas de ARNm

Las vacunas de ARNm han traído consigo innovaciones significativas en la inmunización, pero también enfrentan varios desafíos que pueden afectar su desarrollo y distribución. A continuación, se detallan algunos de los principales retos asociados con estas vacunas:

- Requisitos de Almacenamiento y Transporte: Las vacunas de ARNm requieren condiciones de almacenamiento a temperaturas extremadamente bajas para mantener la estabilidad del ARNm, lo que limita su distribución, especialmente en regiones con infraestructura sanitaria deficiente. Por ejemplo, las vacunas de Pfizer-BioNTech deben ser almacenadas a -70 °C, lo que plantea desafíos logísticos.

- Innovaciones en Almacenamiento: Se están investigando soluciones para permitir el almacenamiento a temperatura ambiente o en refrigeración estándar, lo que facilitaría la distribución y administración de estas vacunas.
- Fragilidad del ARNm: El ARNm es una molécula frágil que se degrada rápidamente en condiciones normales. Esto requiere encapsulación en nanopartículas lipídicas para protegerla durante su transporte y administración5. La fragilidad del ARNm puede limitar su eficacia si no se maneja adecuadamente.
- Reacciones Adversas: Aunque las vacunas de ARNm han demostrado ser seguras en ensayos clínicos, algunos individuos pueden experimentar efectos secundarios como fiebre, fatiga o reacciones alérgicas. La vigilancia continua es esencial para monitorear estos efectos a largo plazo y en poblaciones más amplias.
- Desafíos en la Investigación y Desarrollo: En el contexto del tratamiento del cáncer, uno de los retos es identificar los neoantígenos adecuados para las vacunas personalizadas. Esto requiere un análisis genético detallado y puede ser complicado.
- Combinación con Otros Tratamientos: Determinar cómo combinar las vacunas de ARNm con otras terapias (como inhibidores de puntos de control inmunitario) para maximizar su eficacia es un área activa de investigación.
- Desigualdades Globales: La producción y distribución desigual de las vacunas ha llevado a disparidades en el acceso, lo que podría resultar en una respuesta inadecuada a futuras pandemias en países con menos recursos. La dependencia de importaciones también plantea riesgos durante emergencias sanitarias.

A pesar de los avances prometedores que ofrecen las vacunas de ARNm, estos desafíos deben ser abordados para maximizar su impacto en la salud pública global. La investigación continua y la colaboración internacional serán fundamentales para superar estos obstáculos y garantizar que estas tecnologías puedan ser utilizadas eficazmente en la prevención de enfermedades infecciosas y el tratamiento de condiciones como el cáncer.

Colaboraciones globales y acceso

La tecnología ARNm también está promoviendo colaboraciones globales para mejorar el acceso a vacunas en países en desarrollo. Iniciativas como el centro de transferencia de tecnología establecido por la OMS buscan capacitar a productores locales en el uso de esta tecnología, lo que podría aumentar la capacidad global para responder a pandemias futuras.

El Programa de Transferencia de Tecnología de ARN mensajero (ARNm) de la OMS tiene como objetivo construir una red global de colaboración para fortalecer la capacidad de fabricación de vacunas en países de ingresos bajos y medios, lo que es crucial para enfrentar futuras pandemias y mejorar la salud pública global.

El programa incluye a varios países que están recibiendo apoyo para desarrollar capacidades de producción de vacunas. Los países seleccionados hasta el momento para este programa son:

- Egipto
- Kenia
- Nigeria
- Senegal

- Sudáfrica
- Túnez
- Marruecos
- Ghana
- Camerún
- Malawi

Estos países han sido elegidos por su interés y capacidad para iniciar la producción de vacunas de ARNm. El programa busca mejorar el acceso equitativo a estas tecnologías y fortalecer la infraestructura sanitaria y la autosuficiencia en la producción de vacunas en el continente africano y en otras regiones.

Actualmente, el programa de transferencia de tecnología de ARN mensajero (ARNm) de la OMS no incluye países de América Latina como parte de su iniciativa principal. Sin embargo, hay un interés creciente en la región para desarrollar capacidades de producción de vacunas, y algunos países han mostrado interés en participar en futuras colaboraciones.

Iniciativas Regionales en América Latina

En septiembre de 2024, se llevó a cabo un evento coordinado por la Organización Panamericana de la Salud (OPS) y la OMS en Brasil, donde participaron representantes de más de 90 instituciones de varios países, incluyendo Argentina, Brasil, Canadá, Chile, Colombia, Cuba, Estados Unidos y México. Durante este encuentro se discutieron oportunidades para el desarrollo y producción de vacunas ARNm en la región, abordando enfermedades como tuberculosis y hantavirus.

En el evento también participaron representantes de países fuera de América Latina, como Bélgica, Países Bajos, Sudáfrica, Suiza, Tailandia y Túnez. Esto demuestra un enfoque colaborativo global para abordar las necesidades de producción de vacunas ARNm.

Por su parte, el Instituto Bio-Manguinhos (Brasil) y Sinergium Biotech (Argentina) están trabajando para establecer capacidades locales en la producción de vacunas ARNm. Ambos centros forman parte de una iniciativa liderada por la OMS y el Medicines Patent Pool (MPP) para reducir la dependencia de importaciones y mejorar el acceso a tecnologías sanitarias.

Consideraciones finales

Las vacunas de ARN mensajero representan un cambio paradigmático en la forma en que se desarrollan y administran las vacunas. La tecnología de ARNm ha demostrado ser versátil y efectiva, su éxito inicial contra la COVID-19 abre un abanico de posibilidades para su aplicación en diversas enfermedades infecciosas y potencialmente en tratamientos oncológicos, además de ofrecer una respuesta rápida y adaptable a futuras pandemias.

A medida que avancen la investigación, los ensayos clínicos con resultados positivos y se superen los desafíos técnicos, es probable que esta tecnología continúe evolucionando y expandiéndose en el campo de la medicina preventiva y terapéutica marcando un cambio significativo en la salud pública global.

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Noticias en la Web

Measles outbreaks in the Americas: PAHO calls for strengthened vaccination and surveillance


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Mar 3. The Pan American Health Organization (PAHO) has issued an epidemiological alert due to an increase in measles cases in several countries in the Americas. As of epidemiological week 8 of 2025 (21 February 2025), 268 measles cases, including one death, have been confirmed in Argentina, Canada, Mexico, and the United States. This represents a significant increase compared to the same period in 2024, when 60 cases were reported during the first eight weeks of the year.

Although the region was reverified as measles-free in 2024, measles remains a threat due to its continued circulation in other regions of the world, which increases the risk of importation through travelers, and the existence of unimmunized population groups that continue to be vulnerable. Of the 268 confirmed cases in 2025, 69% were in persons older than 5 years of age.

Last year, 17,887 suspected cases of measles were reported in the region, of which 464 were confirmed, with a notable proportion of these in adolescents and young adults. Notably, 63% of confirmed cases in 2024 had not been vaccinated, highlighting gaps in immunization coverage.

PAHO urgently calls on the countries and territories of the Americas to intensify their vaccination and epidemiological surveillance efforts, as well as to strengthen their rapid response capacity to contain and control outbreaks. Recommendations include intensifying vaccination campaigns, especially in high-risk areas, and improving surveillance to detect suspected cases of the disease in a timely manner.

It is also recommended that vaccination coverage with two doses of MMR (measles, rubella and mumps) vaccine be maintained above 95%, reaching all populations, with particular emphasis on children and young adults, who constitute a significant portion of the cases.

The risk of measles outbreaks is due in part to factors such as the global circulation of the virus - more than 320,000 confirmed measles cases were reported last year, according to WHO data -, low vaccination coverage, increased mobility of people in the region, and the similarity of measles symptoms to other diseases such as dengue, which could make it difficult to correctly identify cases.

PAHO recalls that the elimination of measles, rubella and congenital rubella syndrome remains a public health priority for the region. To this end, it is essential that all countries work together to close immunity gaps and ensure that no one is left unprotected against this highly contagious and serious but vaccine-preventable disease.

The Organization continues to monitor the situation and work closely with countries in the region to support their vaccination, surveillance and rapid outbreak response efforts to prevent the spread and reintroduction of measles and protect the health of the entire population.

Fuente: PAHO. Disponible en https://n9.cl/0533l

Nueva vacuna contra la neumonía infantil podría fortalecer la protección de los niños en el Perú

4 mar. La enfermedad neumocócica sigue siendo una de las principales causas de morbilidad y mortalidad infantil en el Perú, esto se evidencia dentro de los más de 28,000 casos de neumonía reportados anualmente. Aunque la vacunación ha reducido significativamente el impacto de la enfermedad, aún sigue siendo un problema de salud pública.

La vacuna neumocócica conjugada 15-valente (PCV15) se presenta como una alternativa clave, que se adapta a las necesidades específicas para cada población, específicamente la infantil. La enfermedad neumocócica afecta de manera diferente a niños y adultos, por lo que es esencial contar con vacunas diseñadas para brindarles la mejor defensa desde los primeros meses de vida. Además, la PCV15 ha demostrado ser altamente eficaz dentro del esquema de vacunación vigente en el Perú que protege por completo al niño menor de 1 año de edad, permitiendo mantener la estrategia actual y asegurando una cobertura adecuada y sostenida en la población infantil.

Especialistas en salud pública han alertado sobre la importancia de fortalecer el programa de inmunización infantil con vacunas que amplíen la protección y respondan a los desafíos.

La PCV15 ha demostrado ser segura y efectiva, con estudios que respaldan su uso en diferentes poblaciones, incluyendo niños en situación de riesgo. La eficacia comprobada de la vacuna en niños vulnerables, como bebés prematuros y aquellos que podrían desarrollar enfermedad neumocócica, como el caso de niños con VIH y niños con trasplante de células hematopoyéticas. Proteger a estos grupos es fundamental para reducir la carga de la enfermedad y prevenir posibles complicaciones graves que pueden poner en peligro sus vidas.

La inclusión de la PCV15 en el esquema nacional de vacunación representaría un avance significativo en la lucha contra la neumonía infantil en el país. Fortalecería la equidad en el acceso a vacunas innovadoras, asegurando que todos los niños, sin importar su condición de salud o contexto social, reciban la mejor defensa posible contra esta enfermedad prevenible.

Es momento de avanzar en estrategias de inmunización que protejan de manera efectiva a la infancia peruana y contribuyan a reducir la mortalidad infantil, garantizando un futuro más saludable para las próximas generaciones.

Fuente: Agencia de Noticias Órbita. Disponible en https://n9.cl/2yrqm4

Study Reveals Vaccine Hesitancy and Acceptance Patterns for RSV

Mar 4. Respiratory syncytial virus (RSV) poses a significant threat to older adults, and while new vaccines offer protection, understanding the factors influencing vaccine acceptance among seniors is crucial for effective public health strategies. New study findings published in the Therapeutic Advances in Vaccines and Immunotherapy revealed varying levels of willingness to receive an RSV vaccine among older adults residing in Arab countries, highlighting the need for targeted interventions to improve vaccination rates.

RSV infection rates typically increase throughout the winter in temperate climates and throughout the year in

tropical climates, with an uptake of cases during the hot, humid, rainy summer period. In 2015, RSV caused 336,000 hospitalizations and 14,000 in-hospital deaths among adults aged 65 and older worldwide, and the risk of severe RSV outcomes doubles for those over 60 with chronic obstructive pulmonary disease (COPD) or congestive heart failure (CHF).

The lack of RSV burden data from low- and middle-income countries (LMICs), particularly in Southeast Asia and the Middle East and North Africa, underscores the urgent need for enhanced research and surveillance due to limited awareness, underdiagnosis, and inadequate surveillance systems, which collectively overshadow the true impact of RSV, especially among elderly populations.

Even with the significant advancements in RSV vaccine development, widespread success centers on overcoming vaccine hesitancy among older adults. Specifically, older adults in Arab countries face unique sociocultural, economic, and logistical barriers influencing their RSV vaccine attitudes, which was demonstrated throughout the COVID-19 pandemic. The study authors noted that targeted research to understand and address RSV vaccine acceptance among this population is essential.

Researchers created a multinational cross-sectional study that followed strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines to evaluate potential factors that could contribute to the attitude regarding RSV vaccination among older adults residing in Arab countries.

A total of 483 individuals were included from 5 Arab countries: Jordan (n = 239, 49.5%), Kuwait (n = 74, 15.3%), Egypt (n = 68, 14.1%), Saudi Arabia (n = 51, 10.6%), and the United Arab Emirates (UAE; n = 23, 4.8%). All individuals were required to complete a self-administered online survey that collected information on demographics, vaccine history, and key constructs linked to RSV vaccine attitude, including “fear,” information,” “accessibility,” “benefits,” and “conspiracy.” The responses were measured using a 5-point Likert scale that ranged from “strongly agree” to “strongly disagree.”

The study authors noted that the "vaccine uptake score," reflecting both COVID-19 and influenza vaccination history, was calculated and then categorized into low or high uptake groups to assess prior vaccination behavior among participants.

The results demonstrated that 51.1% (n = 247) expressed acceptance of the RSV vaccine, whereas 22.4% (n = 108) were hesitant and 26.5% (n = 128) refused. Additionally, Kuwait and Jordan had the highest refusal rate, as hesitancy varied across countries, and acceptance was the strongest in Saudi Arabia and the UAE, while Jordan and Kuwait showed the lowest acceptance rates.

Further results from the multivariate analysis revealed that perceived benefits ($\beta=0.484$, $p<0.001$), information needs ($\beta=0.229$, $p<0.001$), and prior vaccination history ($\beta=0.087$, $p=0.016$) significantly increased RSV vaccine acceptance, while stronger conspiracy beliefs ($\beta=-0.083$, $p=0.035$) decreased acceptance, and fear and accessibility did not significantly influence vaccine attitudes.

The findings suggest that RSV vaccine acceptance among elderly individuals in Arab countries is significantly influenced by perceived benefits, access to accurate information, prior vaccination behavior, and negatively by conspiracy beliefs. The study authors noted that the results highlight the need for and importance of emphasizing vaccine efficacy and safety while addressing misinformation to effectively increase RSV vaccine uptake and mitigate the high burden of RSV-related illness in this population.

Fuente: Pharmacy Times. Disponible en https://n9.cl/u5ro1

Moderna's RSV vaccine mRESVIA granted MHRA approval to protect older adults

Mar 5. Moderna's respiratory syncytial virus (RSV) vaccine mRESVIA has been approved by the Medicines and Healthcare products Regulatory Agency (MHRA) to protect adults aged 60 years and older against lower respiratory tract disease (LRTD) caused by RSV.

RSV is a common contagious virus characterised by several mild, cold-like symptoms. Although most people can recover within a week or two, some can experience more severe problems, including lung infections and pneumonia.

Older adults are at a higher risk of serious RSV complications, with the virus responsible for 14,000 hospitalisations and 8,000 deaths in adults 65 years and older every year in the UK.

Darius Hughes, UK general manager of Moderna, said: "Given the serious consequences of RSV for older people, which can lead to hospitalisation and severe outcomes, we are delighted that the MHRA has authorised our RSV vaccine."

The UK regulator's decision was supported by positive results from the late-stage ConquerRSV trial, which randomised approximately 37,000 adults ages 60 years and older to receive either mRESVIA or a placebo vaccine.

The study found that around four months after vaccination, individuals who received Moderna's vaccine had a 79% reduction in the risk of developing LRTD caused by RSV compared with those who were given placebo.

Stéphane Bancel, Moderna's chief executive officer, said: "The MHRA's authorisation of our RSV vaccine is an important milestone for Moderna's efforts toward respiratory disease preparedness."

Bancel added that the vaccine "will be manufactured at the Moderna Innovation and Technology Centre in Oxfordshire, which will be fully operational later this year".

The UK government recently launched a national vaccination programme to protect infants and older adults against RSV with Pfizer's Abrysvo.

The new initiative, which launched in September, includes a vaccine for pregnant women over 28 weeks to help protect their babies, a routine programme for those aged over 75 years and a one-off campaign for people aged 75 to 79 years.

Steve Russell, NHS national director for vaccinations and screening, described the rollout as "a huge step forward [that] will undoubtedly save the lives of many of those most at risk".

Fuente: PMLiVE. Disponible en https://n9.cl/4xyph

Abrysvo Shows Strong Immune Response and Safety in Older Adults Over Two RSV Seasons

Mar 6. One month after receiving the respiratory syncytial virus prefusion F (RSVpreF), or Abrysvo, vaccine, folks ages 60 and older displayed high levels of RSV antibodies, which resulted in maintaining a strong safety profile over two seasons, according to findings published in Clinical Infectious Diseases.

RSV is a major cause of lower respiratory tract infections (LRTI) in older adults, especially those who are vulnerable and have underlying chronic conditions.

Abrysvo is a bivalent, stabilized prefusion F vaccine designed to protect against both major RSV subtypes, RSV-A and RSV-B.

It has been approved for use in adults ages 60 and older, those ages 18 to 59 who are at increased risk for RSV-related LRTI and infants through maternal vaccination.

A past study found that RSV accounted for 1% to 10% of influenza-like acute respiratory infections in those aged 50 and older worldwide.

In the U.S. alone, RSV leads to about 60,000 to 160,000 hospitalizations and 6,000 to 10,000 deaths annually among adults aged 65 and older, the study said.

However, due to limited RSV testing and inconsistent reporting, the true burden of RSV in adults may be unclear.

Researchers of the two-season Infectious Diseases study randomly assigned participants 1:1 to receive either a dose of Abrysvo or a placebo.

A key objective was to evaluate immune response one month after vaccination and before the second RSV season in a group of participants spanning from the Northern (USA, Canada, Japan, Finland and Netherlands) and Southern Hemispheres (Argentina and South Africa).

Based on the previous RENOIR trial published in 2023, this current study included adults aged 60 and older with stable health conditions across 241 sites in both hemispheres.

The flu and COVID-19 vaccines were also given during this period to participants who wished to have them.

Participants were observed for two seasons, from August 31, 2021, to December 18, 2023, to evaluate vaccine efficacy, its safety and the increase in antibody levels, or the geometric mean fold rise (GMFR), against RSV-A and RSV-B variants.

Out of 36,862 participants — 18,574 receiving Abrysvo and 18,288 receiving a placebo — one month after vaccination, the GMFR was 12.1, indicating a strong immune response.

Although antibody levels decreased by the second RSV season, they remained significantly higher than pre-vaccination levels, with a GMFR of 4.7.

The immune response was consistent across different age groups, with GMFRs for RSV-A and RSV-B ranging from 12.0 to 13.0 among those ages 60 to 69, 70 to 79 and 80 and older.

In addition, participants with pre-existing chronic conditions displayed antibody responses comparable to those without these conditions, with GMFRs ranging from 11.4 to 14.4.

The vaccine also demonstrated a strong safety profile and maintained its effectiveness over two RSV

seasons.

Aside from the study's robust results, one of its main strengths was its large sample size, which included over 36,000 participants, resulting in a clear evaluation of vaccine efficacy and safety.

The study also included a diverse group of participants from different parts of the world.

In addition, the vaccine remained effective over two RSV seasons, all while the main virus strain changed from RSV-B in the first season to RSV-A in the second.

Another key strength was that Abrysvo was safely co-administered flu and COVID-19 vaccines.

However, the study has limitations.

For example, the COVID-19 pandemic was still in occurrence during the first monitored RSV season, when social distancing and masking may have reduced RSV transmission, potentially affecting the study's results.

Additionally, the vaccine's efficacy in participants and younger adults with pre-existing conditions was not directly assessed, as these groups were excluded from the trial.

While the study displayed strong immune responses, it remains unclear how long the protection from Abrysvo lasts beyond two RSV seasons.

Researchers suggest further investigation into the long-term effectiveness of Abrysvo and that new studies should look into any benefits of revaccination, including whether spacing vaccine doses more than two years apart provides added protection.

Future studies should confirm the vaccine's effectiveness in older adults, particularly those aged 70 and older, who are at higher risk for severe RSV illness.

Lastly, it's suggested that future research should explore vaccine effectiveness and safety in those with pre-existing conditions.

Fuente: Managed Health Care Executive. Disponible en https://n9.cl/xig6m

Canada pledges new support to Gavi

Mar 7. Canada makes pledge of CAD 675 million in new funding for Gavi, the Vaccine Alliance's next strategic period from 2026 to 2030. The support moves Gavi closer to its goal to immunise at least 500 million children and keep our world safe by investing in global health security.

"Gavi is a first-in-class, longstanding global health partner for Canada. Today's announcement will support critical immunization efforts to protect children and vulnerable populations from life-threatening diseases. Canada is investing in Gavi to reduce the global spread of disease and help children everywhere stay healthy." Hon. Ahmed Hussen, Minister of International Development, Canada.

Canada has announced a pledge of CAD 675 million in new funding for Gavi, the Vaccine Alliance's next strategic period from 2026 to 2030, "Gavi 6.0". The pledge will support Gavi's aim to protect more people, against more diseases, faster than ever before in its next strategic period.

"Gavi is a first-in-class, longstanding global health partner for Canada. Today's announcement will support critical immunization efforts to protect children and vulnerable populations from life-threatening diseases. Canada is investing in Gavi to reduce the global spread of disease and help children everywhere stay healthy," said Hon. Ahmed Hussen, Minister of International Development, Canada.

Canada is a leading donor to Gavi, having provided more than US$1 billion in direct contributions to Gavi since 2002.

Canada has also played a critical role in supporting some of Gavi's most innovative programmes – as a founding donor to the Pneumococcal Conjugate Vaccine Advance Market Commitment (PCV AMC), an innovative pilot financing instrument that has helped increase the availability of suitable and affordable vaccines against pneumonia, and a lead donor to Gavi's INFUSE programme, which focuses on piloting and scaling up private sector innovations to improve vaccine delivery. Additionally, Canada was a leading donor to Gavi and partners' efforts to deliver nearly 2 billion COVID-19 vaccines to 146 countries through COVAX – contributing more than US$ 600 million to the efforts, including support for Gavi to set up means to coordinate and deliver donated COVID-19 vaccine doses between countries.

"Today, we are deeply grateful to Canada, and to Canadians, for their commitment to Gavi's next 5-year strategic period," said Dr Sania Nishtar, CEO of Gavi. "This vital support builds on many years of partnership, and as we look forward this investment will ensure that hard-won gains are preserved, our outbreak and emergency response mechanisms are leveraged to keep the world safe, the most impactful vaccines continue to be accessible around the world, and that vulnerable populations, particularly women and girls, are given the opportunity to thrive."

Since 2000, Gavi has protected more than 1.1 billion children against a range of diseases, averting nearly 19 million deaths and helping halve childhood mortality in the countries it supports. The Alliance now needs at least US$ 9 billion for Gavi 6.0, with an aim to help immunise at least 500 million children and save 8-9 million lives from 2026 to 2030. A successful replenishment for Gavi will also help Gavi make its largest ever investment in global health security, expanding its global vaccine stockpiles and support for emergency response. In the next strategic period, Gavi will work with supported countries – who fund more than 40% of the cost of their routine vaccines through the Alliance's co-financing model – to expand access to critical vaccines. This includes reaching 120 million girls with the HPV vaccine, protecting them against cervical cancer and saving 1.5 million lives, and at least 50 million children with vaccines against malaria. During this time, Gavi's immunisation programmes are expected to generate more than US$ 100 billion in economic benefits for partner countries.

Fuente: GAVI. Disponible en https://n9.cl/ksn18

Disputa de patentes de la vacuna ARN para la COVID-19: EEUU apoya a Pfizer y Europa a Moderna

9 mar. La disputa de patentes sobre la vacuna ARN para la COVID-19 entre Moderna y Pfizer-BioNTech se recrudece con decisiones enfrentadas en Estados Unidos y Europa. Esta semana, la Junta de Apelaciones y Juicios de Patentes de EEUU (PTAB) ha fallado a favor de Pfizer-BioNTech y ha dictaminado que dos de las patentes de Moderna son «inválidas» sobre la base de un «estado de la técnica». Una derrota posiblemente sorprendente para la farmacéutica con sede en Massachusetts, ya que en paralelo un tribunal de Düsseldorf (Alemania) ha resuelto que Pfizer y BioNTech sí violaron una patente europea de la vacuna contra el coronavirus de Moderna y, por tanto, deben pagar una «compensación adecuada», aunque aún no se ha establecido cuánto.

Una situación que evidencia la dificultad de este tipo de procesos, con miles de millones de euros en juego, además de una pérdida de prestigio y reputación. Sin embargo, las leyes de patentes en Estados Unidos y Europa son diferentes, lo que puede llevar a decisiones distintas en cada territorio. Por eso Moderna está

valorando apelar la decisión del tribunal estadounidense. «Moderna está desacuerdo con la decisión de la PTAB y está evaluando sus opciones de apelación», ha indicado un portavoz de la compañía.

Por su parte, Pfizer-BioNTech también señala que apelará la decisión del Tribunal del distrito de Düsseldorf. «La decisión no tiene ningún impacto inmediato en Pfizer, BioNTech o Comirnaty. Seguimos creyendo que la EP949 no es válida y, por lo tanto, no se infringe», explica la empresa biotecnológica alemana. Además, Alemania es un mercado clave para BioNTech (donde tiene su sede), por lo que un fallo adverso podría afectar a sus ingresos en Europa.

Moderna demanda a Pfizer-BioNTech en 2022

Todo se remonta a 2022, cuando Moderna denunció tanto en EEUU como en Alemania a Pfizer y BioNTech por infringir patentes clave relacionadas con la tecnología de ARNm. En sus demandas, Moderna argumentó que fue la primera en descubrir que «el uso de la codificación de ARNm para una proteína de pico de coronavirus de longitud completa en una formulación de nanopartículas lipídicas era altamente eficaz para producir anticuerpos neutralizantes». El laboratorio considera que Pfizer y BioNTech copiaron dos características clave de sus tecnologías patentadas que son fundamentales para el éxito de las vacunas de ARN mensajero y busca una compensación económica por daños y regalías por el uso no autorizado de su tecnología. Sin embargo, no solicita la retirada de la vacuna de Pfizer-BioNTech del mercado ni busca bloquear su distribución.

Mientras, Pfizer y su socio alemán defienden que las patentes de Moderna son «inimaginablemente amplias» y cubren una «idea básica que se conocía mucho antes» de su fecha de invención de 2015. Con lo cual, según su consideración, las patentes de Moderna son «inválidas» porque sus innovaciones habían sido señaladas en publicaciones desde 2004.

Ingresos por la COVID-19

Durante la pandemia, Pfizer, BioNTech y Moderna ingresaron decenas de miles de millones con la venta de sus vacunas contra el coronavirus. Pfizer y BioNTech obtuvieron más de 3.300 millones de dólares en ingresos por las ventas globales de su vacuna Comirnaty el año pasado, mientras que Moderna ganó 3.200 millones de dólares por su vacuna Spikevax, según informes de las empresas.

No obstante, las ventas de ambas vacunas disminuyeron significativamente entre 2023 y 2024. Un informe del Centro de Investigaciones Multinacionales SOMO, con sede en Holanda, consultado por THE OBJECTIVE, señala que las cuatro grandes farmacéuticas productoras de vacunas covid, Pfizer, BioNTech, Moderna y Sinovac obtuvieron beneficios de hasta 90.000 millones de dólares durante 2021 y 2022 por sus productos relacionados con la covid-19. Este estudio sitúa a Pfizer (35.000 millones), BioNTech (20.000), Moderna (20.000 millones) y Sinovac (15.000 millones) como los laboratorios que más dinero han ganado, con unos márgenes de ganancias netas situados entre un 62% y un 76%.

Solo en Estados Unidos hay más de una decena de demandas pendientes por patentes de vacunas contra la COVID-19, según un resumen de Big Molecule Watch. Los litigios se extienden mucho más allá de Estados Unidos, con pleitos en los tribunales del Reino Unido, Europa, Canadá, Suiza y Japón que tendrán graves repercusiones financieras para cualquier parte perdedora.

Fuente: THE OBJECTIVE. Disponible en https://n9.cl/l4v47

Novavax Applies Lessons Learned From Turbulent COVID-19 Experience

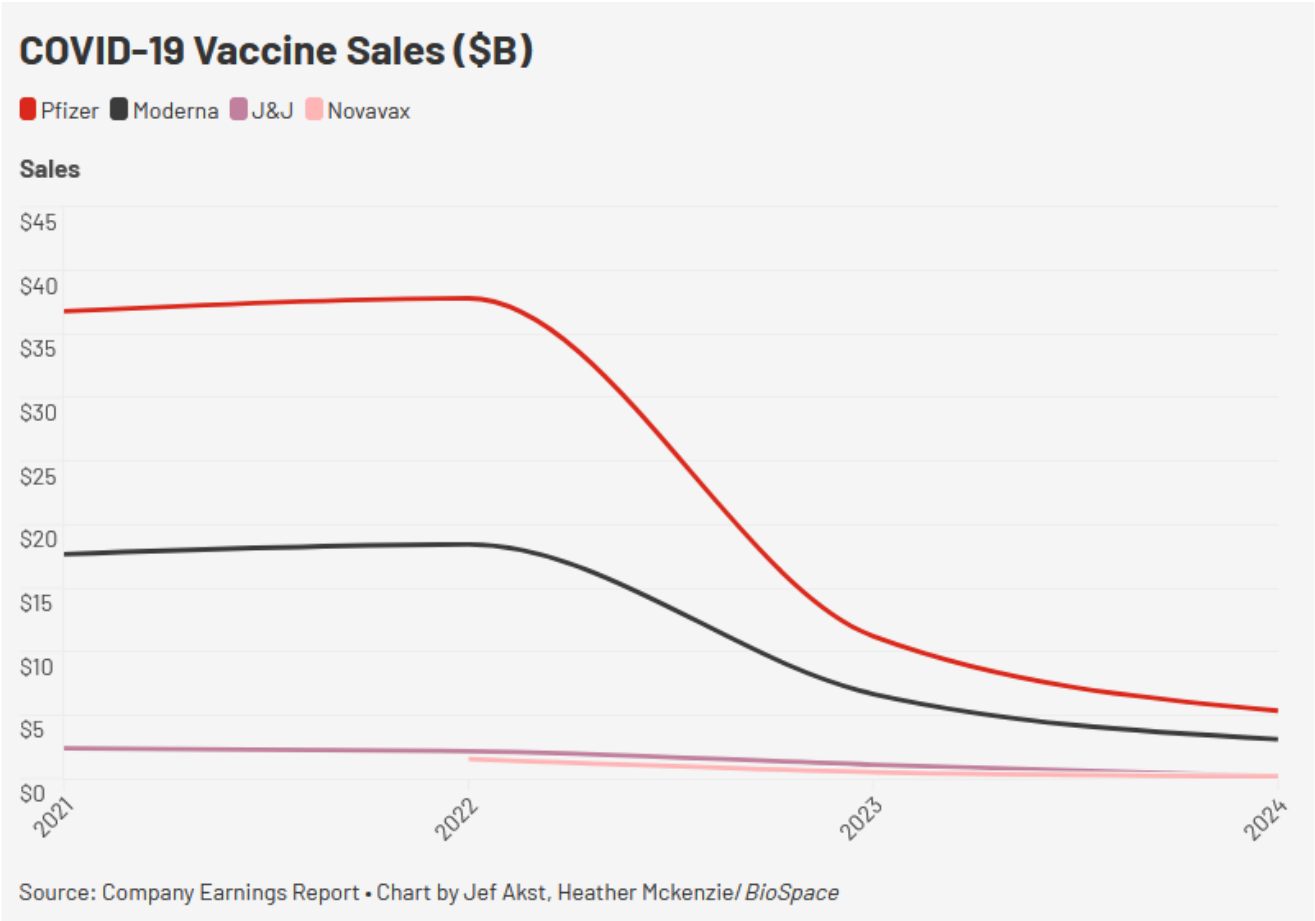
Getty Images, STR/NurPhoto

Mar 10. As sales of its COVID vaccine plummet, Novavax is looking ahead toward other novel vaccines, brought to market with the help of the company's pharma partners—something it opted not to do as the pandemic swept the globe in 2020.

The story could have been much different for Novavax. The Maryland-based biopharma developed and secured the FDA's greenlight for a COVID-19 vaccine in less than two and a half years; the only problem? Three other vaccines got to market even faster.

It typically takes some 5 to 10 years to develop a vaccine. Thanks to a combination of extreme urgency, government funding and strategic partnering, Pfizer and BioNTech's COVID-19 vaccine Comirnaty won the first FDA emergency use authorization (EUA) on Dec. 11, 2020, exactly nine months after the World Health Organization officially declared the pandemic on March 11. Moderna's Spikevax and Johnson & Johnson's COVID-19 vaccine quickly followed. Novavax's Nuvaxovid won FDA emergency use authorization in July 2022.

The first-to-market advantage was significant: Pfizer reported a whopping $36.8 billion in sales from Comirnaty in 2021 and another $37.8 billion in 2022 while Novavax saw only $1.5 billion from Nuvaxovid in the time it was on the market in 2022. All have since encountered the so-called "COVID cliff," with sales falling off considerably as the pandemic has waned.



Ahead of the five-year anniversary of the WHO declaration, BioSpace sat down with Silvia Taylor, EVP and chief corporate affairs and advocacy officer at Novavax, to discuss her company's experience on the front lines of the COVID-19 pandemic.

"I guess that was one of the learnings, that speed is really relative," Taylor said. "This is just a hypothetical, but what if others had taken three years and we would have taken two?" In that case, she mused, rather than wondering why Novavax fell behind, the question would have been, "What made you so successful?"

Strategic Lessons Learned

For context, Taylor compared Novavax to Germany's BioNTech as being "the small innovator" in the global health crisis.

Unlike BioNTech, however, Novavax elected to go it alone at the development stage. "We had a little bit more time to scale and build a commercial infrastructure and build distribution capabilities, and so we chose to do that," Taylor said. "Now, with the benefit of hindsight, could we have been potentially faster? We have no idea. We can't speculate on what didn't happen."

While Taylor indicated that Novavax's technology made its vaccine an attractive option, it may also have delayed its development. Protein-based technology—on which Novavax's Nuvaxovid is built—is "terrific," Taylor said. "It just doesn't happen as quickly [as mRNA]."

But speed is not the only consideration, Taylor emphasized, adding that it's important to think about what the world really needs when it comes to infectious diseases with pandemic potential. "It's incredibly important to have multiple technology platforms . . . because we know not every one is right for every person."

While Novavax didn't partner with another pharmaceutical company at the early stages, it has leveraged several collaborations during the post-approval phase. Nuvaxovid was, after all, the 38-year-old company's first-ever commercial launch, Taylor noted. "We were really in a learning mode."

In May 2024, the company signed a licensing agreement with Sanofi in which the larger pharma took the "lead role" in commercializing the vaccine, according to Taylor. Additionally, Novavax has signed material transfer agreements with two other "major pharmaceutical companies," though Taylor could not disclose any further details.

These material transfers "give other companies access, in this case, to our adjuvant matrix, and allow them to study it and understand how they might apply that to their own portfolios, their own vaccines in development," she said.

Partnering is also a key element of Novavax's COVID-19 strategy moving forward. The company currently has a combination COVID-19/influenza vaccine in Phase III development. For this product, Taylor said Novavax decided not to do full-scale development or commercialize the vaccine without a partner. So, while the company awaits data from that trial—which it expects in mid-2025—it is also "having a lot of productive conversations with potential partners," Taylor said. "We've learned and decided that's what we want to do."

Novavax is also in conversations with the FDA about a potential accelerated approval pathway for the combo vaccine. If that comes to fruition, it could give Novavax an advantage in a space where it once again faces stiff competition. Moderna released positive Phase III data for its combination COVID-19/influenza vaccine, mRNA-1083, in June 2024, while Pfizer and BioNTech reported mixed Phase III data for their own combo in August of the same year. Moderna's product is currently under FDA review, while Pfizer and BioNTech's data left the partners "evaluating the next steps" for the vaccine.

However, Novavax's wholly owned combination COVID-19-flu vaccine is not its only shot on this particular goal. The Sanofi pact also gave the larger pharma a license to combine Nuvaxovid with one of its market leading flu vaccines, "and they've decided to do that, not with just one candidate, but two," Taylor said. Both vaccines were granted FDA fast track designation in December 2024.

"I think combination therapies, where you can target two infectious diseases with one vaccine, that's where the [COVID-19] market's going," Taylor said.

'Readiness Posture'

While Novavax awaits revenue for these potential products, it is facing the same COVID cliff as its peers.

Last month, the company revealed its Q4 and full-year 2024 earnings, reporting $50 million in Nuvaxovid sales in the fourth quarter compared to $251 million in the same period the previous year. Total 2024 Nuvaxovid revenue was $190 million compared to $531 million in 2023.

But Novavax is looking forward. "[COVID] was never our long-term strategy," Taylor said. "We saw the fact that we were able to get our COVID vaccine out as validation of our technology platform and our ability as an innovator."

In its earnings report, Novavax CEO John Jacobs laid out three strategic priorities: the Sanofi partnership, leveraging its technology platform and pipeline to forge additional partnerships and advancing its technology platform and early-stage pipeline. On that note, the company has an experimental vaccine for avian flu (H5N1) ready for clinical development.

"If we were able to do this for COVID-19," Taylor said, "what if, for example, an avian influenza pandemic hits?"

When developing its COVID-19 vaccine, Novavax leveraged funding from both the Coalition for Epidemic Preparedness Innovations (CEPI) and the U.S. government's Operation Warp Speed. While H5N1 is still simmering—76 people, mainly farm workers, were infected with the H5 avian influenza strain in 2024, according to the United Nations—Novavax is already in talks with organizations that provide non-dilutive funding "to explore the potential of getting that funding to take that to the next level," Taylor said. "That's the readiness posture of the world, of the U.S. We're ready to continue that development."

On a broader scale, Taylor said the pharmaceutical industry also learned a lot about communication during a global pandemic. "I think misinformation was so rampant during the [COVID-19] pandemic, but . . . I don't know that it impacted our vaccine so much as people's attitudes toward vaccination in general."

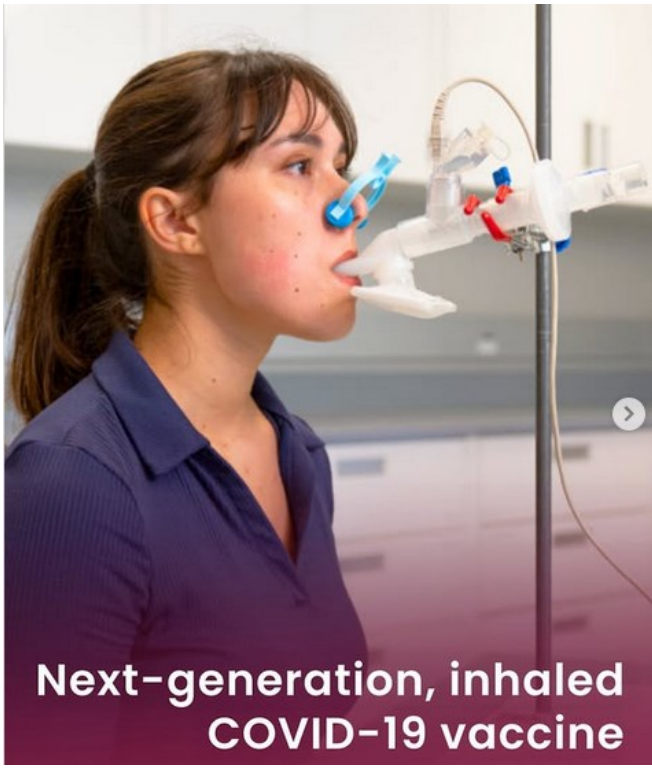
Indeed, flu vaccination rates have declined since the pandemic, with 9.2 million fewer doses being administered in pharmacies and doctor's offices compared with an average year prior to COVID-19, according to The Conversation.

Going forward, Taylor said, things need to change. "I think that everybody from public health officials within government, NGOs, pharmaceutical companies, we all have to think about, how do we put information out there in a very consistent and concise way?" Although that didn't happen during COVID, lessons have been learned, she said. "We'll never be the same again."

Fuente: BioSpace. Disponible en https://n9.cl/gy72g

Next-generation, inhaled COVID-19 vaccine enters phase-2 clinical trial

Mar 10. Researchers at McMaster University have started a phase-2 clinical trial on a next-generation, inhaled COVID-19 vaccine.



The AeroVax study, supported by $8M in funding from the Canadian Institutes of Health Research (CIHR), will test needle-free vaccines developed to provide protection from SARS-CoV-2.

Led by Fiona Smaill and Zhou Xing, members of the Michael G. DeGroote Institute for Infectious Disease Research (IIDR) at McMaster, the multi-centre trial will evaluate the new vaccine in a broad study group, while also confirming safety.

Findings from pre-clinical studies and the soon-to-be-published data from the phase-1 trial indicate that McMaster's inhaled vaccine is more effective at inducing immune responses than traditional injected vaccines are, because it directly targets the lungs and upper airways — where the virus first enters the body.

While the current, needle-based COVID-19 vaccines have prevented a tremendous amount of death and hospitalization, they haven't really changed a lot of people's experience with getting recurrent infections. So, we're looking to change that by providing robust protection directly at the site of infection."

Fiona Smaill, Professor, Department of Pathology & Molecular Medicine, McMaster University

The new vaccine is entirely Canadian, from design and biomanufacturing at McMaster's Robert E. Fitzhenry Vector Laboratory to pre-clinical and clinical testing conducted by a team of Canadian experts, with Canadian participants, at Canadian research sites.

For the new trial, researchers hope to include 350 participants from across Canada at clinical trial sites in Hamilton, Ottawa, and Halifax. Those eligible for participation must:

- Have at least three doses of an mRNA COVID-19 vaccine
- Have never received the AstraZeneca COVID-19 vaccine
- Have not had a COVID-19 infection or COVID-19 vaccination within three months prior to enrollment
- Have no diagnosis of lung disease
- Be available to attend trial visits in-person
- Be age 18-65

Smaill says that the study is a randomized placebo-controlled trial, noting that two-thirds of the study's participants will receive the vaccine, while the other third will receive a placebo. Participants won't know which group they belong to, but the researchers argue that both groups are equally integral to the study.

"Clinical trials, like this one, are the only way to firmly establish the efficacy and safety of novel health products," Smaill says. "Randomization allows for objective comparison between those who received the vaccine and those who didn't, which can tell us a lot about the level of protection the vaccine could provide and its side effects."

"Every medicine or vaccine that we use and trust today has at one point gone through similar clinical trials processes," adds Matthew Miller, director of both the IIDR and Global Nexus at McMaster, and part of the trial study team. "This is a highly regulated process with extensive oversight that ensures the safety of participants and will generate critical data to inform the next steps in development."

Following the study, researchers will move the vaccine into phase-3 clinical trials which will test efficacy in a larger population group and ultimately position the vaccine for market approval.

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

¿La inmunidad frente a la COVID-19 es de por vida? La gran duda que persiste cinco años después de la pandemia

11 mar. Margaret Keenan, una nonagenaria británica, fue la primera persona en el mundo en recibir una vacuna contra el coronavirus el 8 de diciembre de 2020, menos de un año después de que la Organización Mundial de Salud (OMS) declarara emergencia de salud pública de importancia internacional por la COVID-19 el 30 de enero de 2020. El 27 de diciembre le llegó el turno a Araceli Hidalgo, la primera española en recibir una dosis de las nuevas vacunas desarrolladas con ARN mensajero, un descubrimiento de Katalin Karikó y Drew Weissman que les valió el Nobel de Medicina en 2023. Cinco años después del embiste de la pandemia, una de las grandes dudas sigue persistiendo: ¿cuánto dura la inmunidad frente a la COVID-19?

"Esa es la duda que tenemos todavía todos. Es precisamente este tipo de estudios los que estamos desarrollando a partir de ahora entre todos. Sabemos que la inmunidad frente al SARS-CoV-2, bien por infección y/o por vacunas, está siendo eficaz, potente, e incluso, duradera, pero no sabemos exactamente con cuánta duración. Desde luego, no hay datos para decir que sea de por vida, ni mucho menos, pero sí que puede aguantar al menos un año", explica a 20minutos el inmunólogo Marcos López Hoyos.

Con él coincide el presidente saliente de la Sociedad Española de Epidemiología, Óscar Zurriaga. En su opinión, tampoco se puede decir aún que la inmunidad dure para toda la vida: "Por lo que sabemos, en este momento, no. Hemos sufrido más de un episodio de COVID-19, después de haber pasado la enfermedad y estando correctamente vacunados. Es decir, la inmunidad no es duradera", asegura a este periódico. Cabe recordar que las vacunas de COVID-19, como las de gripe, previenen la enfermedad grave desarrollada por la infección, pero no tanto los contagios. Es por esta razón por la que se ha reducido notablemente el número de muertes -en España murieron más de 150.000 personas desde el inicio de la pandemia y hasta finales de junio de 2023, días antes de declararse el fin de la crisis sanitaria por la COVID-19, mientras que en la actual temporada, desde finales de septiembre de 2024, Sanidad contabiliza 22 fallecimientos-, pero la población sigue infectándose de un virus que continúa mutando en subversiones de sí mismo que le permiten seguir contagiado.

La inmunóloga Yvelise Barrios del Pino y profesora en la Universidad de La Laguna (Tenerife), anota que "lo que se ha ido publicando y demostrando en estos cinco años es que la respuesta inmunitaria frente a la COVID-19 conseguida por la vacunación, incluyendo las adaptaciones sucesivas de la vacuna original, unido a la infección, es de calidad y persistencia. Como en cualquier infección, se ha demostrado que hay pacientes que desarrollan un síndrome postinfeccioso o *long-covid* que precisa de más investigación y desarrollo de tratamientos personalizados, pero la gran mayoría desarrolla una respuesta robusta, duradera y adaptada a las nuevas versiones del virus".

En una reciente entrevista con EFE, la inmunóloga del Hospital Universitario La Paz de Madrid Carmen Cámara ha abundado en el tema. La especialista especifica que la inmunidad celular "probablemente dure de por vida". Cuando nos infectamos, prosigue, "tenemos una inmunidad combinada", tanto humoral -la que se mide rápidamente con un test de anticuerpos- como celular -que se basa en los linfocitos T y confiere una protección a largo plazo-. Ambos tipos de inmunidad "se forman a la vez y ya sabemos que duran mucho tiempo. [De] la humoral, probablemente no detectemos los anticuerpos, pero sí estén las células productoras en la médula ósea. Las vacunas producen más humoral que celular y por eso medíamos y veíamos un descenso de los anticuerpos a los tres meses y por eso pensábamos que se perdía la inmunidad. Actualmente, creemos que la inmunidad celular puede durar de por vida".

La inmunóloga del CSIC Matilde Cañelles tampoco considera que la inmunidad dure toda la vida. "No. Basándonos en otros estudios realizados con otros tipos de coronavirus, no es tan duradera. Hasta el punto de que no vayas a pasar la enfermedad, no. Se han hecho estudios consistentes en observar a una misma persona durante varias temporadas para ver qué virus de catarro han pasado, y se repiten. O sea, lo pasan un año, al siguiente quizá no, pero al otro sí". Por esta razón, Cañelles considera "necesario para las personas vulnerables" seguir vacunando de COVID-19 cada año durante la campaña de inmunización contra la gripe. "Para el resto no, igual que no te vacunas contra un catarro", agrega.

Tasas de vacunación a nivel mundial

Tras las primeras campañas de vacunación y administración de las dosis de recuerdo en plena pandemia, los pinchazos se dispensan desde hace cuatro años junto a la vacuna de la gripe al comienzo de la temporada de frío cada año para los grupos de población más vulnerables y expuestos a estas infecciones. España alcanzó uno de los mayores porcentajes de cobertura de vacunación del mundo, con un 87% del total de su población con la pauta completa. En total, se han administrado más de 13.600 millones de vacunas en todo el mundo. Otros países 'muy vacunados' son Emiratos Árabes (99%), Chile (93%), Australia (85%), Canadá (83%) o China (87%), según los datos de la OMS.

Este último país optó por la estrategia 'COVID cero' con "ventajas, pero también muchos inconvenientes". Según expone la portavoz de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (Seimc), María del Mar Tomás, se registraron menos contagios por COVID-19 pero, en cambio, durante la última temporada ha habido "gran afectación" por otro tipo de virus como el metapneumovirus en la población infantil por falta de exposición previa. "Estaban como poco inmunizados a los virus estacionales y eso ha perjudicado a la población infantil", señala.

Relacionar la tasa de vacunación contra el coronavirus con la situación epidemiológica actual no siempre es fácil, pues en los países con menor acceso a las dosis -como muchos del continente africano u otros del este europeo o Rusia-, a su vez, "probablemente muchos contagios no se hayan detectado". Además, en África, "hay otras enfermedades de mayor protagonismo como la malaria, el ébola o la viruela del mono", señala la doctora Tomás. Entre los países con menor tasa de vacunación reportada figuran la República Democrática del Congo (16%), Camerún o Gabón (con el 12%), Argelia (15%), Mali (18%), Senegal (9%), Papúa Nueva Guinea (4%) o Haití (3%), según los datos de la OMS.

Aunque la COVID-19 no llega a considerarse un virus estacional como la gripe, los especialistas consultados por 20minutos consideran que mantener el esquema de vacunación actual, con refuerzos anuales junto a la gripe, "no es mala idea". Así lo considera Zurriaga, que también advierte de que "las coberturas vacunales contra virus respiratorios no son para tirar cohetes, están en niveles pre-pandémicos, por lo que nos queda mucho margen para poder incrementarlas".

Lo mismo recalca el epidemiólogo Joan Caylà, que ve "con una cierta preocupación que, en los últimos tres o cuatro años, la cobertura vacunal de la gripe y de la COVID-19 en personas mayores ha ido bajando año a año, quizá por influencia de los negacionistas o por la fatiga pandémica, pero hay que hacer un esfuerzo para alcanzar coberturas más elevadas, de en torno al 90% en las personas vulnerables. Esta es la forma de que estas personas no sufran de estas infecciones o, si las sufren, las tengan de una forma atenuada". El especialista advierte de que esta temporada "se ha observado que la gente se ha vacunado menos de COVID-19 que de gripe", por lo que también aboga por continuar con el actual esquema de vacunación para "aprovechar" el pinchazo contra la gripe para administrar en el otro brazo el de la COVID-19, pues teme que si la cita para vacunarse de la COVID-19 fuera en otro momento del año bajaran aún más las coberturas: "Lo más simple desde el punto de vista estratégico es vacunarse simultáneamente".

Fuente: 20minutos. Disponible en https://n9.cl/xmkmc

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Estrategia de búqueda: (Vaccine) AND DP:([03.03.2025 TO 12.03.2025]) *as the publication date 26 records.*

1.4514386BAKTERIOPHAGENBASIERTER, NADEL- UND ADJUVANSFREIER, MUKOSALER COVID-19-IMPFSTOFF

EP - 05.03.2025

Clasificación Internacional A61K 39/215Nº de solicitud 23795745Solicitante UNIV AMERICA CATHOLICInventor/a ZHU JINGEN

A bacteriophage T4-based, multivalent/multicomponent, needle and adjuvant-free, mucosal vaccine by engineering spike trimers on capsid exterior and nucleocapsid protein in the interior is disclosed herein. Intranasal administration of this T4-COVID vaccine induces higher virus neutralization antibody titers against multiple variants, balanced Th1/Th2 antibody and cytokine responses, stronger $CD4^+$ and $CD8^+$ T cell immunity, and higher secretory IgA titers in sera and bronchoalveolar lavage with no effect on the gut microbiota, compared to vaccination of mice intramuscularly. The vaccine is stable at ambient temperature, induce apparent sterilizing immunity, and provide complete protection against original SARS-CoV-2 strain and its Delta variant with minimal lung histopathology. This mucosal vaccine is an excellent candidate for boosting immunity of immunized and/or as a second-generation vaccine for the unimmunized population. This needle-free platform could be used to develop effective vaccines against many other respiratory infectious pathogens including Flu and any future emerging epidemic and pandemic pathogens.

2.WO/2025/049467MPOX VACCINE COMPOSITIONS AND METHODS OF USING SAME

WO - 06.03.2025

Clasificación Internacional A61K 39/285Nº de solicitud PCT/US2024/044023Solicitante CHILDREN'S HOSPITAL MEDICAL CENTERInventor/a TAN, Ming

Disclosed are vaccine compositions, in particular, polyvalent icosahedral compositions for presentation of an mpox antigen. The disclosed compositions may contain an S particle comprising a norovirus (NoV) S domain protein and an mpox antigen, which may be linked via a linker protein domain operatively connected to the norovirus S domain protein and an mpox antigen. Fusion proteins for producing the vaccine compositions, and methods of using the disclosed vaccine composition are also provided.

3.WO/2025/049442SURVIVIN MRNA VACCINE

WO - 06.03.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2024/043990Solicitante H. LEE MOFFITT CANCER CENTER AND RESEARCH INSTITUTE INC.Inventor/a LOCKE, Frederick L.

Disclosed herein is an mRNA vaccine encoding a variant (double mutant form) of the survivin polypeptide and methods for treating a malignancy, such as myeloma, or for inducing an immune response, by administering the variant survivin mRNA vaccine. Also disclosed are methods for treating a malignancy using the disclosed mRNA vaccine.

4.20250073331USE OF CODON DEOPTIMISATION AND OPTIMISATION TO PRODUCE A LARYNGOTRACHEITIS VIRUS-ATTENUATED VACCINE

US - 06.03.2025

Clasificación Internacional A61K 39/245Nº de solicitud 18528294Solicitante EDGE ANIMAL HEALTH, INC.Inventor/a Kristi Mae MOORE

An improved method of deoptimization of nucleic acids, particularly nucleic acids associated with genes and/or open reading frames (ORFs) of a variety of pathogens including viruses, retroviruses, bacteria, fungi, and the like. Nucleic acids may be related to genes and/or ORFs from infectious viruses or other diseases and be associated with the elicitation of a protective response when inserted, using recombinant techniques, into a vector and used in a vaccine composition. The nucleic acid sequence of one or more ORFs may be optimized or deoptimized for use in an improved recombinant vaccine to elicit an immune response against an infectious agent when administered to a subject using a variety of dosing and timing regimens.

5.WO/2025/046130T CELL BROAD BETACORONAVIRUS VACCINE

WO - 06.03.2025

Clasificación Internacional A61K 39/215Nº de solicitud PCT/EP2024/074380Solicitante NEC ONCOIMMUNITY ASInventor/a MALONE, Brandon

The present invention relates to polypeptides, polynucleotides, compositions, microorganisms, vectors and vaccine compositions optimised for the treatment or prophylaxis of a disease or infection caused by Betacoronaviruses, including but not limited to: Embecovirus, Hibecovirus, Merbecovirus, Nobecovirus, Sarbecovirus, MERS-CoV, SARS-CoV-1 and SARS-CoV-2. In particular, the invention provides a vaccine composition comprising a polypeptide, wherein the polypeptide comprises one or more epitope sequences, wherein the one or more epitope sequences have the amino acid sequences of any one or more of the sequences of Table 1, or a variant thereof having at least 70% sequence identity thereto, and wherein the polypeptide sequence is no more than 1400 amino acids in length.

6.WO/2025/049941ATTENUATED VACCINIA VIRUS VACCINES FOR MONKEYPOX

WO - 06.03.2025

Clasificación Internacional C12N 7/04Nº de solicitud PCT/US2024/044723Solicitante ARIZONA BOARD OF REGENTS on behalf of ARIZONA STATE UNIVERSITYInventor/a KIBLER, Karen

This disclosure provides compositions and methods for treating and/or preventing monkeypox infection and/or symptoms post-infection, the method including administering a composition including at least one attenuated

vaccinia virus, the at least one attenuated vaccinia virus including a modification to the coding sequence of E3L.

7.WO/2025/048868USE OF CODON DEOPTIMISATION AND OPTIMISATION TO PRODUCE A LARYNGOTRACHEITIS VIRUS-ATTENUATED VACCINE

WO - 06.03.2025

Clasificación Internacional A61P 31/12Nº de solicitud PCT/US2023/082337Solicitante EDGE ANIMAL HEALTH, INC.Inventor/a MOORE, Kristi Mae

An improved method of deoptimization of nucleic acids, particularly nucleic acids associated with genes and/or open reading frames (ORFs) of a variety of pathogens including viruses, retroviruses, bacteria, fungi, and the like. Nucleic acids may be related to genes and/or ORFs from infectious viruses or other diseases and be associated with the elicitation of a protective response when inserted, using recombinant techniques, into a vector and used in a vaccine composition. The nucleic acid sequence of one or more ORFs may be optimized or deoptimized for use in an improved recombinant vaccine to elicit an immune response against an infectious agent when administered to a subject using a variety of dosing and timing regimens.

8.WO/2025/049708HUMAN NEUTRALIZING ANTIBODIES AGAINST HIV ENV

WO - 06.03.2025

Clasificación Internacional A61K 39/42Nº de solicitud PCT/US2024/044375Solicitante INTERNATIONAL AIDS VACCINE INITIATIVEInventor/a LANDAIS, Elise

The present disclosure relates to anti-HIV antibodies and their use in the treatment or prevention of HIV/AIDS and in the development of HIV vaccines.

9.WO/2025/044923ANTIGENIC RESPIRATORY SYNCYTIAL VIRUS POLYPEPTIDE, NUCLEIC ACID, AND VACCINE

WO - 06.03.2025

Clasificación Internacional C07K 14/135Nº de solicitud PCT/CN2024/114156Solicitante SHENZHEN RHEGEN BIOTECHNOLOGY CO., LTD.Inventor/a HU, Yong

An antigenic respiratory syncytial virus polypeptide, a nucleic acid, and a vaccine. Compared with a respiratory syncytial virus wild-type Pre-F protein, the antigenic respiratory syncytial virus polypeptide or an immunogenic fragment thereof has the following changes of amino acid sites: replacing the 104th-144th areas of the Pre-F protein with a GS linker; introducing two groups of disulfide bonds into S155C, S290C, A149C, and Y458C; enabling S190F and V207L to implement cavity filling; and P102A, L373R, I379V, and M447V. Moreover, the C terminal comprises a cytoplasmic tail fragment, and the cytoplasmic tail fragment is a continuous 3-10 amino acid residue fragment derived from the cytoplasmic tail of the Pre-F protein. The improvement of the immunogenicity and/or stability of the Pre-F can be realized, and the increase of the protein expression level is facilitated.

10.WO/2025/044922VECTORED DEV AVIAN INFLUENZA H9 VACCINES

WO - 06.03.2025

Clasificación Internacional Nº de solicitud PCT/CN2024/114152Solicitante BOEHRINGER INGELHEIM VETMEDICA (CHINA) CO., LTD.Inventor/a HUANGFU, Yifan

The present invention relates to the field of animal health. Particularly, the present invention relates to a composition, comprising a modified Duck Enteritis Virus (DEV) which comprises and is capable of expressing a heterologous polynucleotide coding for an antigen of a chicken pathogen. Furthermore, the present invention relates to a composition, comprising the modified DEV as vector-vaccine for chicken, and the use thereof. More particularly, the present invention relates to a vaccine composition against a chicken pathogen, comprising a modified DEV that shows no or reduced pathogenicity in chicken.

11.4516313IMMUNAKTIVATOR, IMPFSTOFFADJUVANS UND VERFAHREN ZUR INDUZIERUNG VON IMMUNITÄT

EP - 05.03.2025

Clasificación Internacional A61K 39/39Nº de solicitud 23796458Solicitante UNIV TEIKYOInventor/a SUZUKI RYO

Dislcosed is an immunoactivator that is capable of enhancing induction of both humoral immunity and cellular immunity and contains an active ingredient derived from cell walls (derived from a natural product); a vaccine adjuvant; and a method for inducing immunity including administering the immunoactivator. Theimmunoactivator contains, as an active ingredient, particles having a maximum diameter within a range of 1 to 800 nm, wherein the particles comprise cell-wall-derived polysaccharides.

12.20250073328COMPOSITIONS AND METHODS FOR TREATING OR PREVENTING HIV INFECTION

US - 06.03.2025

Clasificación Internacional A61K 39/21Nº de solicitud 18821631Solicitante The United States Government As Represented By The Department Of Veterans AffairsInventor/a Catarina E. Hioe

Disclosed are trimeric complexes comprising an uncleaved prefusion optimized gp140 env trimer. Disclosed are compositions comprising a trimeric complex, wherein the trimeric complex comprises an uncleaved prefusion optimized gp140 env trimer. Disclosed are methods of inducing an immune response against HIV in a subject comprising administering one or more of the disclosed compositions to a subject in need thereof. Disclosed are methods of generating neutralizing antibodies (nAbs) to HIV in a subject comprising administering one or more of the disclosed compositions to a subject in need thereof. Disclosed are method of treating a subject infected with HIV comprising administering one or more of the disclosed compositions to a subject in need thereof. Disclosed are methods of inducing an immune response against HIV in a subject comprise administering a composition or vaccine comprising a trimeric complex, wherein the trimeric complex comprises an uncleaved prefusion optimized gp140 env trimer, as disclosed herein, in combination with administering a composition or vaccine comprising a nucleic acid construct, wherein the nucleic acid construct comprises a nucleic acid sequence that encodes for a polypeptide comprising an HIV-1 derived V1V2 domain and a trimer-forming scaffold.

13.20250073177LIPID NANOPARTICLES FOR OLIGONUCLEOTIDE DELIVERY

US - 06.03.2025

Clasificación Internacional A61K 9/51Nº de solicitud 18705454Solicitante ZIPHIUS NVInventor/a Sophie VALEMBOIS

The current invention relates to ionizable lipid-like compound according to Formula (I) or pharmaceutically acceptable salt, tautomer, or stereoisomer thereof.

The present invention also provides a lipid nanoparticle comprising an ionizable lipid-like compound according to Formula I and one or more RNA molecules, as well as a pharmaceutical composition or vaccine, comprising such lipid nanoparticles.

14.4514387VERFAHREN ZUR ERHÖHUNG DER IMMUNITÄT

EP - 05.03.2025

Clasificación Internacional A61K 39/215Nº de solicitud 23797561Solicitante XANADU BIO INCInventor/a IWASAKI AKIKO

The invention relates to a method of enhancing immunity, mRNA-based vaccines for SARS-CoV-2 have demonstrated the enormous potential of mRNA therapeutics for safe and effective use in the general population. However, more recent studies have demonstrated decreasing vaccine effectiveness in terms of asymptomatic infection as well as symptomatic and severe infections starting around 4 months post second dose with mRNA-lipid nanoparticles (LNP) based regimens.

15.WO/2025/044919NEW DEV VECTORS

WO - 06.03.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/CN2024/114136Solicitante BOEHRINGER INGELHEIM VETMEDICA (CHINA) CO., LTD.Inventor/a MA, Chengtai

The present invention relates to the field of animal health. Particularly, the present invention relates to an attenuated Duck Enteritis Virus (DEV). More particularly, the present invention relates to an attenuated DEV that shows no or a reduced pathogenicity in duck and chicken. Furthermore, the present invention relates to a composition, comprising the attenuated DEV of the invention as vector-vaccine for poultry, and the use thereof.

16.20250077857METHOD TO GENERATE SAFE NATURAL LANGUAGE MEDICAL REPORTS FOR DISEASE CLASSIFICATION

US - 06.03.2025

Clasificación Internacional G06N 3/08Nº de solicitud 18398328Solicitante NEC Laboratories Europe GmbHInventor/a Zhao XU

The present invention provides a computer-implemented, machine learning method for generating safe text. A first portion of a trainable prompt is generated using negative influential features and positive influential features of a predicted condition. A second portion of the trainable prompt is trained to steer a pre-trained

large language model (PLLM) to generate the safe text using at least the first portion of the trainable prompt. The method has applications including, but not limited to, use cases in medicine (e.g., digital medicine, personalized healthcare, AI-assisted drug or vaccine development, diagnosis or treatment, disease prediction, etc.), and cyber security.

17.202500733334INJECTABLE HYDROGEL FOR SUSTAINED CO-DELIVERY OF AN ANTIGEN AND AN ADJUVANT, AND USES THEREOF

US - 06.03.2025

Clasificación Internacional A61K 39/00Nº de solicitud 18826093Solicitante The Regents of the University of CaliforniaInventor/a Szu-Wen Wang

The disclosure provides for a vaccine depot formulation that comprises a biodegradable thermosensitive hydrogel that has been loaded or embedded with nanoparticles that comprise an antigen and adjuvant, and uses thereof for protecting a subject from an infection or disease.

18.4516907VERFAHREN ZUR HERSTELLUNG UND VERWENDUNG UNIVERSELLER ZENTRALISIERTER INFLUENZAIMPFSTOFFGENE

EP - 05.03.2025

Clasificación Internacional C12N 15/44Nº de solicitud 24213290Solicitante UNIV NEBRASKAInventor/a WEAVER ERIC ANTHONY

This disclosure describes a number of different polypeptide sequences, and the nucleic acid sequences encoding such polypeptide sequences, that can be used alone or in combination as universal vaccines (e.g., against influenza A or influenza B in humans or influenza in swine).

19.WO/2025/046493BIOENGINEERED IMMUNOMODULATORY FUSION PROTEIN COMPOSITIONS

WO - 06.03.2025

Clasificación Internacional C07K 14/705Nº de solicitud PCT/IB2024/058377Solicitante JANSSEN BIOTECH, INC.Inventor/a TAMOT, Ninkka

Provided herein are, inter alia, materials and methods for bioengineered immunomodulatory fusion proteins and uses thereof for modulating immune responses, as well as improving a response of a subject in need therefore, such as to a vaccine, or treating a disease or disorder, such as cancer or a pathogen infection.

20.WO/2025/045124SOAT1 INHIBITOR AND USE THEREOF

WO - 06.03.2025

Clasificación Internacional C07D 409/04Nº de solicitud PCT/CN2024/115329Solicitante AOBIO PHARMACEUTICAL CO., LTD.Inventor/a HOU, Steven Xianyu

Provided in the present disclosure is a compound of formula (I), or a stereoisomer, an isotopic variant, or a pharmaceutically acceptable salt or solvate thereof, with R_1, R_2, R_3, X_1, ring A, ring B and ring C being as described in the present disclosure, which can be used as an SOAT1 inhibitor. Also provided are a pharmaceutical composition containing same and the use thereof in the treatment or prevention of diseases

related to SOAT1 pathway activity, such as cancers or tumors in a subject. Further provided is the use thereof in the preparation of a therapeutic vaccine for blocking tumor development.

21.20250074961NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST SMALL CELL LUNG CANCER AND OTHER CANCERS

US - 06.03.2025

Clasificación Internacional C07K 14/47Nº de solicitud 18947499Solicitante Immatics Biotechnologies GmbHInventor/a Andrea MAHR

The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

22.WO/2025/044920NEW DEV VECTORS FOR AVIAN VACCINES

WO - 06.03.2025

Clasificación Internacional A61K 39/00Nº de solicitud PCT/CN2024/114146Solicitante BOEHRINGER INGELHEIM VETMEDICA (CHINA) CO., LTD.Inventor/a MA, Chengtai

The present invention relates to the field of animal health. Particularly, the present invention relates to a modified Duck Enteritis Virus (DEV). More particularly, the present invention relates to a modified DEV that shows no or reduced pathogenicity in chicken. Furthermore, the present invention relates to a composition, comprising the modified DEV of the invention as vector-vaccine for chicken, and the use thereof.

23.4514388KOMBINATIONSTHERAPIE ZUR BEHANDLUNG VON KREBS MIT EINEM FAS-ACHSEN-ANTAGONISTEN UND EINEM T-REG-ZELLDEPLETIONSMITTEL-ANTAGONISTEN

EP - 05.03.2025

Clasificación Internacional A61K 39/395Nº de solicitud 23722852Solicitante HOFFMANN LA ROCHEInventor/a AMANN MARIA

The present disclosure is directed to the combination of a Fas axis antagonist, such as an anti-FasL antibody, and a Treg cell depletion therapy, for example an anti-CD25 antibody, optionally with a cancer vaccine, for use in the treatment of cancer.

24.WO/2025/046121LIPID NANOPARTICLE WITH NUCLEIC ACID CARGO AND IONIZABLE LIPID

WO - 06.03.2025

Clasificación Internacional A61K 9/51Nº de solicitud PCT/EP2024/074369Solicitante NOVOARC GMBHInventor/a HAIDER, Max

Disclosed is a lipid nanoparticle (LNP) encapsulating a nucleic acid cargo preferably comprising messenger ribonucleic acid (mRNA). The LNP comprises at least an ionizable lipid fraction, and a stabilizer fraction. The

stabilizer fraction preferably comprises at least one polyethylenglycol (PEG) lipid. Furthermore, the ionizable lipid fraction comprises at least one ionizable glycerol dialkyl glycerol tetraether (GDGT) lipid. Also disclosed is a pharmaceutical composition comprising the LNP, such as an mRNA vaccine. In a further aspect, the invention relates to the ionizable GDGT lipids and methods for producing them.

25.4516306CHIMÄRER ZIKA-VIRUS-ANTIKREBSIMPFSTOFF UNTER VERWENDUNG EINER BRUSTKREBSZELL-SUBLINE

EP - 05.03.2025

Clasificación Internacional A61K 35/768Nº de solicitud 23796815Solicitante SK BIOSCIENCE CO LTDInventor/a HONG SEUNG-HYE

The present invention relates to a pharmaceutical composition for prevention or treatment breast cancer, containing a chimeric Zika virus obtained through breast cancer cell passages as an active ingredient.

26.2025900485MERS VACCINE ANTIGEN

AU - 06.03.2025

Clasificación Internacional Nº de solicitud 2025900485Solicitante Macfarlane Burnet Institute for Medical Research and Public Health LimitedInventor/a Given, Not

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