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EN ESTE NÚMERO

VacCiencia es una publicación dirigida a investigadores y especialistas dedicados a la vacunología y temas afines, con el objetivo de serle útil. Usted puede realizar sugerencias sobre los contenidos y de esta forma crear una retroalimentación que nos permita acercarnos más a sus necesidades de información.

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Vacunas contra el Virus del Papiloma Humano

El virus del papiloma humano (VPH) es un virus común que se propaga a través del contacto sexual. El VPH puede causar cáncer cervical y verrugas genitales, así como también ha sido asociado con otros tipos de cánceres, incluso de vagina, de vulva, de pene, de ano, de boca y de garganta.

Hay dos grupos de VPH de transmisión sexual: de bajo y alto riesgo. Los VPH que pueden causar cáncer, se denominan de alto riesgo, y son el VPH16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58 y 59.

El cáncer de cuello uterino es el tipo más común de cáncer causado por VPH. Los VPH16 y VPH18 son responsables del 70% de los casos de cáncer de cuello de útero en todo el mundo, y si se consideran también los VPH31, 33, 45, 52 y 58, estos siete tipos son responsables del 90% de los casos de cáncer de cuello uterino.

Los VPH de bajo riesgo incluyen el VPH6 y el VPH11, que causan el 90% de las verrugas anogenitales.

La vacuna proporciona al cuerpo una forma segura para que el sistema inmunitario reconozca mejor algunas cepas del VPH. Esto significa que el cuerpo elimina esas cepas del virus con mayor facilidad si una persona las contrae más tarde.

De acuerdo al documento de posición de la Organización Mundial de la Salud (OMS) sobre las vacunas VPH, el objetivo prioritario de la inmunización contra este virus es la prevención del cáncer de cuello uterino. La Estrategia mundial de la OMS de 2020 para acelerar la eliminación del cáncer de cuello uterino como problema de salud pública recomienda que las vacunas VPH se incluyan en todos los programas nacionales de inmunización y que lleguen al 90% de todas las niñas de 15 años de edad para 2030. La mejor manera de prevenir el cáncer de cuello uterino es vacunando a las niñas antes de que sean sexualmente activas. Todas las vacunas contra el VPH bivalentes, cuadrivalentes y nonavalentes autorizadas actualmente tienen excelentes perfiles de seguridad y son muy eficaces, o han cumplido con los estándares de inmunotransferencia.

Vacunas existentes

La primera vacuna para la prevención de enfermedades relacionadas con el VPH se autorizó en 2006. Actualmente, se han autorizado 6 vacunas profilácticas contra el VPH. Todas están destinadas a administrarse, si es posible, antes del inicio de la actividad sexual, es decir, antes de la exposición al VPH. Todas las vacunas se preparan, utilizando ADN recombinante y tecnología de cultivo celular, a partir de la proteína estructural L1 purificada, que se autoensambla para formar capas vacías específicas del tipo de VPH, denominadas partículas similares al virus (VLP, por sus siglas en inglés). Las vacunas contra el VPH no contienen productos biológicos vivos ni ADN viral y, por lo tanto, no son infecciosas y utilizan diferentes sistemas de expresión, contienen adyuvantes, pero no antibióticos ni agentes conservantes.

Todas las vacunas contra el VPH contienen VLP contra los tipos de VPH de alto riesgo 16 y 18; la vacuna nonavalente también contiene VLP contra los tipos de VPH de alto riesgo 31, 33, 45, 52 y 58; y las vacunas tetravalentes y nonavalentes contienen VLP para proteger contra las verrugas anogenitales causalmente relacionadas con los tipos 6 y 11 del VPH.

Hasta la fecha, 125 países (64%) han introducido la vacuna contra el VPH en su programa nacional de inmunización para niñas, y 47 países (24%) también para niños.

Las vacunas deben administrarse por vía intramuscular en la región deltoidea. La dosis estándar es de 0,5

ml. El esquema de vacunación, según lo estipulado por los fabricantes, depende principalmente de la edad del receptor. A continuación, se incluye información basada en las etiquetas del producto.

Vacunas bivalentes contra el VPH

Cervarix fabricada por GlaxoSmithKline Biologicals s.a. (Reino Unido) En su composición contiene 20 µg de proteína L1 de VPH tipo 16 y 20 µg de proteína L1 de VPH tipo 18. La proteína L1 se presenta en forma de partículas no infecciosas similares al virus (VLPs) producidas por la tecnología del ADN recombinante mediante la utilización de un sistema de expresión en Baculovirus que utiliza células Hi-5 Rix4446 derivadas de *Trichoplusia ni*.

Está autorizada para niñas y niños de 9 a 14 años con un esquema de 2 dosis (con un intervalo de 5 a 13 meses). Si la edad del receptor en el momento de la primera dosis es ≥15 años, se deben administrar tres dosis (a los 0, 1 a 2,5 meses y 5 a 12 meses).

Cervarix no está recomendada para uso en niños de menos de 9 años de edad debido a la falta de datos de seguridad e inmunogenicidad en este grupo etario.

Cecolin fabricada por Xiamen Innovax Biotech Co. Ltd. (China), de dos componentes VPH16 y VPH18 y producida en plataforma de *E coli*. La vacuna está autorizada para niñas de 9 a 14 años con un esquema de 2 dosis (con un intervalo de 6 meses). A partir de los 15 años, se indica un esquema de 3 dosis (a los 0, 1-2 meses y 5-8 meses).

Walrinvax fabricada por Yuxi Zerun Biotechnology Co., Ltd (China) es una vacuna recombinante preparada a partir de partículas similares a virus (VLP) purificadas de la proteína principal de la cápside (L1) de los tipos 16 y 18 del VPH. Las proteínas L1 se producen por fermentaciones separadas en *Pichia pastoris* recombinante y se autoensamblan en VLP. Las VLP purificadas se adsorben en un adyuvante de fosfato de aluminio. WALRINVAX® es una suspensión de color blanco lechoso que forma un precipitado blanco fino agitable después del almacenamiento.

Está autorizada para niñas de 9 a 14 años con un esquema de 2 dosis (con 6 meses de diferencia, con un intervalo mínimo de 5 meses). A partir de los 15 años, se indica un esquema de 3 dosis (a los 0, 2-3 y 6-7 meses).

Vacunas tetravalentes contra el VPH

Gardasil fabricada por Merck & Co. (Alemania) es una vacuna recombinante contra el VPH (tipos 6, 11, 16, 18) a partir de proteína L1 en forma de partículas similares al virus producidas en células de levadura (*Saccharomyces cerevisiae* CANADE 3C-5 (Cepa 1895)) por tecnología del ADN recombinante y adsorbida en hidroxifosfato sulfato de aluminio amorfo como adyuvante.

Está autorizada para niñas y niños de 9 a 14 años con un esquema de 2 dosis (con 6 meses de diferencia). A partir de los 15 años, se debe administrar un esquema de 3 dosis (a los 0, 1-2 y 4-6 meses).

Cervavac® fabricada por Serum Institute of India, es una vacuna recombinante contra VPH (tipos 6, 11, 16, 18) producida desde la cepa *Hansenula polymorpha*.

Está autorizada para niñas y niños de 9 a 14 años con un esquema de 2 dosis (con 6 meses de diferencia). A partir de los 15 años, se debe administrar un esquema de 3 dosis (a los 0, 2 y 6 meses).

Vacuna nonavalente contra el VPH

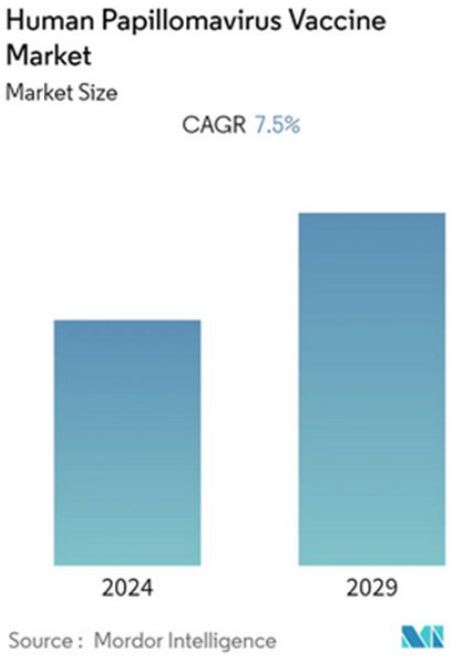
Gardasil9 fabricada por Merck & Co. (Alemania) es una vacuna contra el VPH (tipos (6, 11, 16, 18, 31, 33,

45, 52 y 58). Está preparada a partir de la proteína L1 en forma de partículas similares al virus producidas en células de levadura (*Saccharomyces cerevisiae* CANADE 3C-5 (Cepa 1895)) por tecnología del ADN recombinante y adsorbida en hidroxifosfato sulfato de aluminio amorfo como adyuvante.

Está autorizada para niñas y niños de 9 a 14 años con un esquema de 2 dosis (con un intervalo de 5 a 13 meses). A partir de los 15 años, se debe seguir un esquema de 3 dosis (a los 0, 1-2 y 4-6 meses).

Mercado global de vacunas VPH

Se revisaron reportes de pronóstico del mercado de vacunas VPH, el cual está segmentado fundamentalmente por tipo (bivalentes y polivalentes) y geografía (América del Norte, Europa, Asia-Pacífico, Medio Oriente y África, y América del Sur).



La pandemia de COVID-19 afectó significativamente al mercado estudiado. Sin embargo, con los casos de COVID-19 bajo control, el mercado recuperó su carácter prepandémico en términos de demanda de vacunas contra el VPH.

De acuerdo a un estudio de pronóstico de *Fortune Business Insights*, para el periodo 2020-2027, el tamaño del mercado mundial de la vacuna contra VPH se valoró en 3.800 millones de dólares en 2019 y se proyecta que alcance los 12.690 millones de dólares en 2027, con una tasa compuesta anual (CAGR) del 16,3 % durante el período de pronóstico. Por su parte, según *Mordor Intelligence*, se espera que el mercado de vacunas VPH registre una tasa compuesta anual de casi el 7,5% durante el periodo de pronóstico 2024-2029.

Fueron identificados entre los factores impulsores más importantes del mercado:

⇒ La eficacia y la protección que brindan las vacunas contra el VPH para reducir los efectos adversos asociados con dichas infecciones. A medida que los fabricantes han desarrollado nuevas vacunas de inmunización, en los últimos años se ha observado un cambio en las políticas y creencias sobre la vacunación en todo el mundo. Esto ha aumentado potencialmente la adopción y la aceptabilidad de las vacunas contra el VPH.

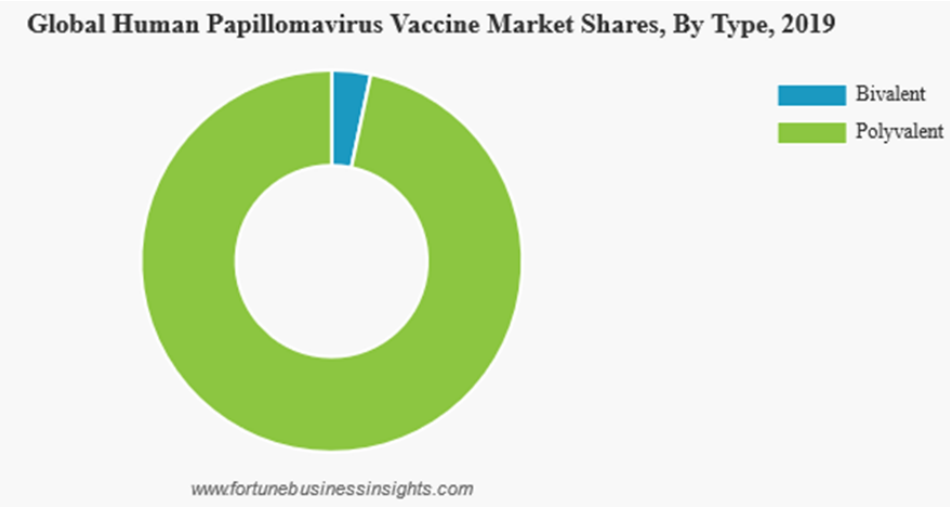
⇒ La creciente prevalencia del cáncer de cuello uterino en países de todo el mundo. Se prevé que aumenten las ventas de la vacuna VPH, lo que marca un gran crecimiento del mercado en el futuro cercano.

⇒ Creciente penetración de las dosis de la vacuna tanto en países en desarrollo como en países de bajos ingresos a través de los programas de inmunización de organizaciones internacionales como GAVI/ OPS/OMS.

Por tipo de vacuna

Según el tipo, las vacunas polivalentes, en concreto Gardasil/Gardasil 9 de Merck, tienen una participación mayoritaria en el mercado mundial. Como estos productos protegen contra múltiples cepas de VPH, tienen una gran demanda y mayores ventas en todo el mundo. El crecimiento de las ventas de Gardasil/Gardasil 9 fue impulsado por mayores ventas en la región de Asia Pacífico, en particular en China, así como por una mayor demanda en el mercado europeo.

Además, la aprobación de la Administración de Alimentos y Medicamentos de los Estados Unidos (USFDA) sobre la ampliación de la edad para la vacunación contra el VPH se reflejó en el crecimiento de las ventas de los dos productos.

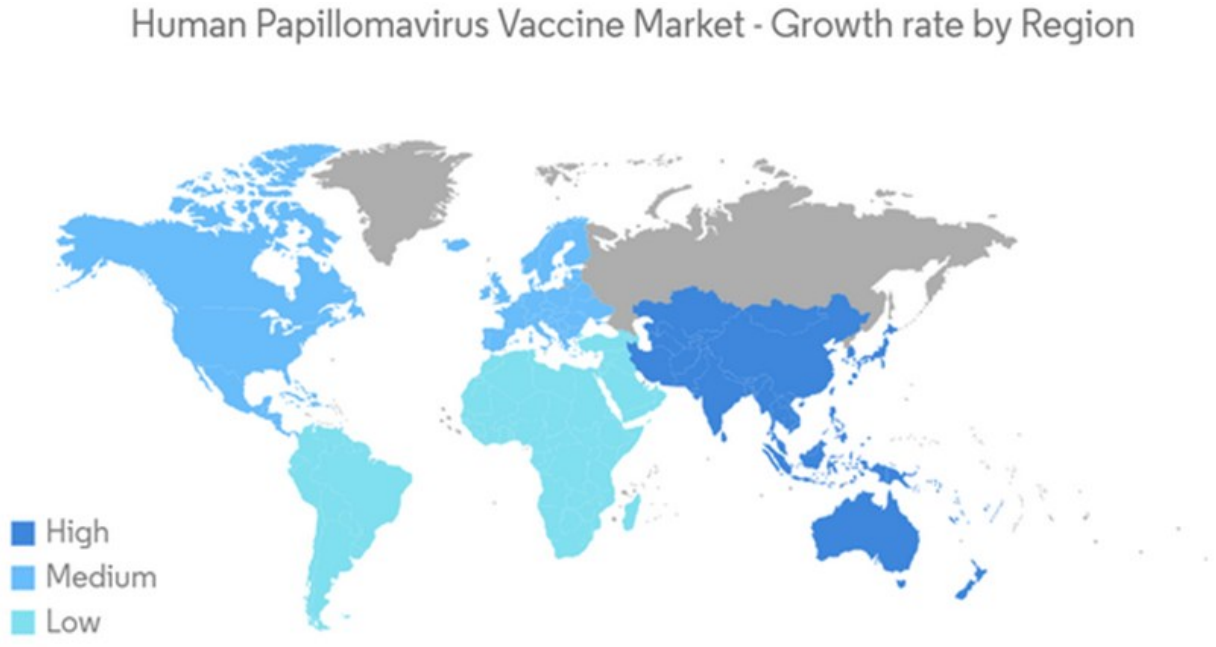


En el caso de la vacuna bivalente, Cervarix de GSK, tiene menos demanda en todo el mundo. Esto ha detenido el suministro de Cervarix en los Estados Unidos desde 2017. También se registró una disminución en las ventas totales de Cervarix en el año 2019.

Análisis regional

En 2019, América del Norte generó unos ingresos de 1.830 millones de dólares y se prevé que domine el mercado mundial en los próximos años. Se espera que el mayor valor de las ventas de Gardasil/Gardasil 9 y la rápida adopción de la vacuna VPH en toda la región impulsen el crecimiento del mercado en América del Norte. Además, la implementación de estrategias de marketing, distribución y lanzamiento por parte de los actores clave que garantizan mayores ventas ha llevado al dominio de América del Norte en el mercado mundial de estas vacunas.

Se espera que Asia Pacífico muestre la tasa de crecimiento más alta en el mercado debido a la modificación de las políticas de inmunización por parte de los gobiernos que impulsaron aún más la demanda de vacunas VPH en la región, lo que contribuye a la creciente demanda de suministro de vacunas, junto con las crecientes tasas de incidencia de la enfermedad por VPH, que son responsables del crecimiento del mercado de Asia Pacífico. La creciente prevalencia del cáncer asociado al VPH y la implementación efectiva de la inmunización impulsarán el crecimiento del mercado de Asia Pacífico durante el período de pronóstico.



Por otro lado, se proyecta que América Latina sea testigo de un crecimiento significativo en el mercado debido a la penetración de las vacunas contra el VPH en la región y la creciente conciencia entre el grupo de pacientes sobre los beneficios de la inmunización contra el VPH. Las organizaciones internacionales como GAVI, OPS y UNICEF también se centran en proporcionar vacunas a los necesitados mediante la adquisición de dosis de gran volumen de los fabricantes.

Fuente: Informes de los países a través del formulario electrónico conjunto OPS-OMS/UNICEF (eJRF), 2022 e informes de los países.

Se prevé que el mercado europeo de la vacuna contra el virus del papiloma humano experimente un crecimiento más lento debido a una menor prevalencia de infecciones asociadas al VPH y la falta de adopción de sus vacunas en las partes subdesarrolladas de Europa.

Oriente Medio y África serán testigos de un crecimiento restringido en el mercado en comparación con las otras regiones clave debido a la falta de conciencia sobre la disponibilidad y adopción de estas vacunas y las estrictas políticas de inmunización.

Líderes del mercado de vacunas

El mercado estudiado es un mercado consolidado debido a la presencia de algunos actores importantes. El panorama competitivo incluye algunas empresas internacionales y locales que poseen cuotas de mercado y son bien conocidas, incluidas Merck Co., Inc., GSK plc, Serum Institute of India Pvt. Limitado. Ltd. y Wantai BioPharm, entre otros.

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Noticias en la Web

Infant RSV vaccine trials on hold: FDA

Dec 12. The FDA has placed a hold on all clinical studies of vaccines for respiratory syncytial virus in infants due to safety concerns following a trial involving two mRNA-based vaccine candidates from Moderna.

A briefing document released by the FDA ahead of the Vaccine and Related Biological Products Advisory Committee revealed that a phase 1 trial evaluating two RSV vaccines in infants aged 5 to 8 months was paused in July after five severe cases of RSV-related illness were reported among infants receiving the vaccine candidates.

The trial, which tested two Moderna RSV vaccines, mRNA-1365 and mRNA-1345, found that infants who received a 15-microgram dose of either vaccine had a higher incidence of severe lower respiratory tract infections compared to those who received a placebo. Five of six infants required hospitalization, with one needing mechanical ventilation.

The safety signal prompted Moderna to halt enrollment in the trial and the FDA subsequently issued a clinical hold.

VRBPAC will review the safety data and discuss implications for the future development of RSV vaccines for infants.

Fuente: BECKER´SHOSPITALREVIEW. Disponible en https://lc.cx/q3kXX5

Fractional dosing of pneumococcal conjugate vaccine noninferior to full dosing schedule

Dec 12. The pneumococcal conjugate vaccine is highly effective at reducing vaccine-type pneumococcal disease. This vaccine has been introduced as part of routine recommended vaccinations globally. However, it is currently the most expensive component of routine immunization schedules in many countries. Currently, the vaccine is given in a three prime – no booster series of doses or a two prime – one booster schedule. The sustainability of this vaccine program is in question in countries that are transitioning out of financial support. Fractional doses of antigens have been shown to induce immune responses that are noninferior to the current full-dose vaccines in a variety of different diseases. This randomized noninferior trial aimed to assess whether the serotype-specific immunogenicity of fractional doses (20% or 40%) of PCV10 or PCV13, administered in a two prime – one booster schedule, would be noninferior to the immunogenicity of the current full doses.

"In this randomized non-inferiority trial, 40% of a full dose of the 13-valent pneumococcal conjugate vaccine (PCV13) was noninferior to the full doses for all included serotypes."

The prevalence of vaccine serotype carriage was also assessed. Infants that met the inclusion criteria were randomly assigned to one of seven groups, where groups A through F were assigned to receive either a fractional or full dose of PCV10 or PCV13, administered as two primary doses plus one booster. Participants in group G received a full dose of PCV10 as three primary doses without a booster. Results from this study found that in a three-dose schedule, 40% of doses of the PCV13 were noninferior to the full doses in all serotypes. However, lower doses of PCV13 and PCV10 did not meet noninferiority.

Click here to read the study in NEJM

This randomized noninferior trial assessed whether the immunogenicity of PCV10 and PCV13 would be noninferior to the full doses. The prevalence of vaccine serotype carriage was also assessed. Healthy infants in Kilifi and Mombasa counties in Kenya were randomly assigned to one of seven trial groups when they were six to eight weeks of age and received follow-up until 18 months of age. Participants in groups A through F were assigned to receive either a fractional or full dose of PCV10 or PCV13, administered as two primary doses plus one booster. In group A, participants received a full dose of PCV13; group B, a 40% dose of PCV13; group C, a 20% dose of PCV13; group D, a full dose of PCV10; group E, a 40% dose of PCV10; and group F, a 20% dose of PCV10. Participants in group G received a full dose of PCV10 as three primary doses without a booster. Immunogenicity was then assessed four weeks after the primary series of doses and four weeks after the booster. Noninferiority was declared if the difference in threshold response was ≤10% after the primary series, or if the GMC ratio of IgG was >0.5 after the booster. A dose was considered noninferior if it met the criterion for ≥8 of 10 PCV10 serotypes or ≥10 of 13 PCV13 serotypes; carriage was assessed at six and 18 months. The results from this study found that in a two-prime – one booster schedule, a 40% dose of the PCV13 was noninferior to the full dose for IgG responses in all serotypes. However, when PCV13 and PCV10 were administered in lower doses (20%), the immunogenicity was not noninferior to the full dose. The prevalence of vaccine serotype carriage was similar across all PCV13 groups when the participants were 9 to 18 months of age. In summary, fractional dosing of PCV13 was noninferior to full dosing for all studied serotypes.

Fuente: 2 minute medicine. Disponible en https://lc.cx/ZQe545

Study finds early HPV vaccination boosts completion rates

Dec 13. A new study from Nemours Children's Health reveals a promising approach to increasing human papillomavirus (HPV) vaccination rates by beginning vaccinations at age 9, rather than the current standard of age 11. The study, published in Academic Pediatrics, demonstrates significant improvements in vaccination completion rates and a narrowing of racial and ethnic disparities.

The initiative, implemented across 20 Nemours primary care sites between 2019 and 2022, introduced updates to electronic health records (EHR), targeted provider education, and routine feedback on vaccination performance. These measures encouraged clinicians to recommend the HPV vaccine at well visits for children as young as 9 years.

Results

The study measured progress using the Healthcare Effectiveness Data Information Set (HEDIS) rate, which tracks the percentage of patients completing the 2-dose HPV vaccine series by age 13. Key outcomes included:

HEDIS rate: Increased from 49.2% in 2019 to 59.5% in 2022, with a subsequent rise to 63.9% by 2023, after the study period concluded.

Early initiation: Vaccination initiation at ages 9 and 10 surged from 13.2% in 2019 to 42.2% in 2022.

Demographic gains: Early vaccination initiation improved across all racial and ethnic groups. Hispanic patients saw an increase from 27.6% to 51.5%; Black patients from 19.0% to 45.7%; Asian patients from 4.8% to 44.8%; and white patients from 6.1% to 36.5%.

Addressing barriers and stigma

Researchers attributed part of the success to reduced stigma around discussing the vaccine when it is framed as cancer prevention rather than a measure against sexually transmitted infections. Providers also noted that parents were more receptive to earlier vaccination recommendations.

“Initiating HPV vaccination at age 9 allows us to make leaps in this important public health measure,” said Jonathan Miller, MD, associate chief of Primary Care at Nemours Children’s Health. “We were thrilled to discover that this project led to significant improvements in racial disparities in vaccination rates, even though we did not design the intervention specifically to do that.”

Expanding evidence for early vaccination

HPV is a common virus, with 85% of people expected to be infected in their lifetime. While vaccination can prevent 90% of cervical cancers and significant proportions of other HPV-related cancers, the United States adolescent vaccination completion rate remains at just 62.6%, far below other routine immunizations. Starting vaccinations at age 9 provides more time to complete the series, which may benefit families facing access barriers.

"Our study showed that initiating vaccination at age 9 leads to more adolescents being fully protected against cervical cancer and several other cancer types, which adds to a growing body of evidence and broader national push to begin the series at that age," concluded Caitlin Miller, a medical student and lead author.

Fuente: Contemporary OB/GYN. Disponible en https://lc.cx/-Ba0OP

Unitaid and Gavi establish new partnership to improve access to cervical cancer prevention

Dec 13. Unitaid and Gavi, the Vaccine Alliance (Gavi), will pilot integrated cervical cancer screening and treatment with human papillomavirus (HPV) vaccination programs through a new partnership. The initiative will build off Unitaid’s existing cervical cancer screen-and-treat programs in Côte d’Ivoire and Nigeria, incorporating vaccination awareness and service delivery with the goal of increasing coverage for both women and girls.

Cervical cancer is a leading cause of cancer deaths among women, especially in low- and middle-income countries where access to vaccination, screening and treatment is limited.

Sub-Saharan Africa bears the highest burden, exacerbated by high HIV prevalence, which increases the risk of invasive cervical cancer six-fold. In Côte d'Ivoire and Nigeria, it is the second most common cancer among women, with mortality rates far exceeding the global average.

The World Health Organization's (WHO) global strategy to eliminate cervical cancer focuses on three main pillars: vaccination, screening, and treatment. The Gavi-Unitaid partnership leverages Gavi's focus on vaccine delivery and Unitaid's expertise in introducing innovative health solutions. It also responds to the need for "coordinated cooperation among partners at all levels," emphasized as a key component of WHO's global elimination strategy, and the call for coordinated action among global health actors outlined in the Lusaka Agenda.

In 2022, Gavi and partners launched a push to revitalize HPV vaccination in lower-income countries. Meanwhile, Unitaid has worked with the governments of both countries since 2020 to introduce secondary prevention – ensuring women who cannot be vaccinated receive lifesaving screening and treatment options. While coverage rates have improved drastically, including in Nigeria and Cote d'Ivoire, they remain far too low – and much more needs to be done to ensure girls and women are protected against cervical cancer.

Led by partners Expertise France (EF) and the Clinton Health Access Initiative (CHAI), the project will test innovative approaches to increasing vaccination coverage for girls and screening for adult women through enhanced service delivery models in schools, homes and clinics, targeting both girls and their female caretakers. The project will also emphasize targeted health communication campaigns, knowing that girls' ability to access HPV vaccination is often influenced by their families, communities, and other decision-makers.

EF and CHAI will support ministries of health in Cote d'Ivoire and Nigeria to reach girls, teachers and caretakers through school-based health communication campaigns, while also building on Unitaid's existing community-level awareness initiatives. Leveraging the success that Unitaid-backed programs have had in introducing community-based screening, the partnership will pilot home-based delivery of HPV vaccination alongside the distribution of self-collection kits for HPV testing1 and referrals for treatment. The project will also work within existing healthcare infrastructure, including HIV treatment sites and routine health services, to better integrate cervical cancer-related services to expand awareness and uptake of lifesaving preventive measures.

"Through this partnership, we are combining two powerful tools that are critical to cervical cancer elimination – vaccination to protect young girls and screening and treatment for women who have not been vaccinated," said Dr. Philippe Duneton, Executive Director of Unitaid. "Our goal is to address the unique challenges faced by women and girls in these countries. This partnership will generate valuable insights that shape strategies for delivering information, tools, and services directly to the communities where women and girls live."

"Vaccination against HPV is the first pillar of the cervical cancer elimination agenda, but it is also an important entry point to ensure other key health services are being delivered. It is important for countries that we find opportunities to integrate immunization into the provision of primary healthcare, which is why Gavi is proud to partner with UNITAID on vaccination, screening and treatment to protect women and girls against cervical cancer," said Dr. Sania Nishtar, CEO of Gavi.

"Providing women and girls with integrated, comprehensive information and services has the potential to improve health literacy and service uptake – ultimately advancing progress on eliminating cervical cancer,"

said Prebo Barango, Cross-cutting Specialist, Non-communicable Diseases and Special Initiatives at WHO. "We expect the program to generate valuable lessons for other low- and middle-income settings wishing to accelerate progress on the cervical cancer elimination agenda."

The partnership will generate evidence on the feasibility, acceptability, and cost of integrated cervical cancer prevention approaches over one year, with the goal of scaling up successful models more widely to increase access to cervical cancer prevention in other low- and middle-income countries.

Fuente: relief web. Disponible en https://lc.cx/ZrURGK

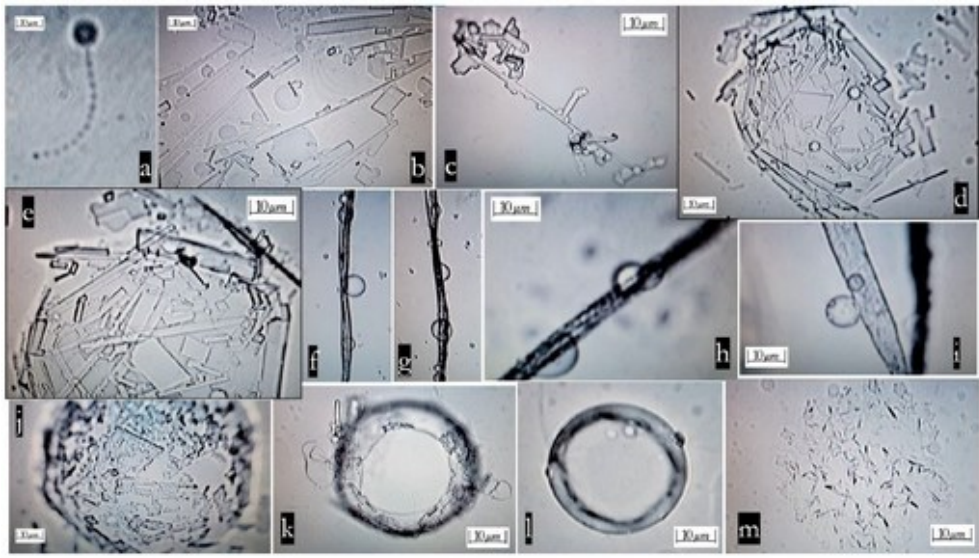
Nanotecnología en vacunas COVID-19: El hallazgo de una científica tucumana conmueve al mundo y desafía al establishment farmacéutico

15 dic. La biotecnóloga tucumana Lorena Diblasi lideró una investigación internacional que detectó 55 elementos no declarados en vacunas COVID-19, incluyendo nanopartículas metálicas y componentes utilizados en dispositivos electrónicos. El estudio publicado por la prestigiosa International Journal of Vaccine Theory, Practice, and Research reveló la presencia de 55 elementos no declarados en vacunas COVID-19 AstraZeneca, CanSino, Moderna, Pfizer, Sinopharm y Sputnik V, incluyendo lantánidos citotóxicos empleados en optogenética y nanotecnología, así como metales pesados como cromo, arsénico y níquel en concentraciones alarmantes. El hallazgo de la valiente científica tucumana y su equipo, cuestionan la seguridad de las nanopartículas lipídicas (LNP) utilizadas en vacunas de ARNm y plantean serias dudas sobre la transparencia de la industria farmacéutica en el desarrollo de vacunas durante la pandemia en 2020.

La biotecnóloga tucumana Lorena Diblasi, egresada de la Universidad Nacional de Tucumán (UNT), lideró un estudio que ha sacudido los cimientos de la industria farmacéutica a nivel mundial: Según su investigación—publicada en la prestigiosa International Journal of Vaccine Theory, Practice, and Research—se hallaron 55 elementos químicos no declarados en las vacunas contra la COVID-19 de AstraZeneca, CanSino, Moderna, Pfizer, Sinopharm y Sputnik V. El descubrimiento incluye nanopartículas metálicas, metales pesados e incluso lantánidos citotóxicos, lo que plantea interrogantes sobre la transparencia y seguridad de estos biológicos administrados en todo el mundo.

Hallazgos inéditos y preocupantes

Diblasi y su equipo utilizaron espectrometría de masas con plasma acoplado inductivamente (ICP-MS) para identificar la composición de las vacunas. Este método permitió detectar 12 de los 15 lantánidos (comúnmente usados en electrónica y optogenética) y 11 metales pesados, entre los que destacan:



- ⇒ Cromo: presente en el 100% de las muestras.
- ⇒ Arsénico: encontrado en el 82%.
- ⇒ Níquel: detectado en el 59%.

"Es preocupante encontrar estos elementos no declarados en productos que han sido administrados a millones de personas. La heterogeneidad en la composición de las vacunas analizadas plantea serias dudas sobre su seguridad", enfatizó Diblasi.

¿Por qué es relevante este descubrimiento?

Transparencia y seguridad: La presencia de elementos no declarados—especialmente metales pesados y nanopartículas metálicas—abre la discusión sobre los controles de calidad que deberían garantizar los laboratorios y los entes reguladores.

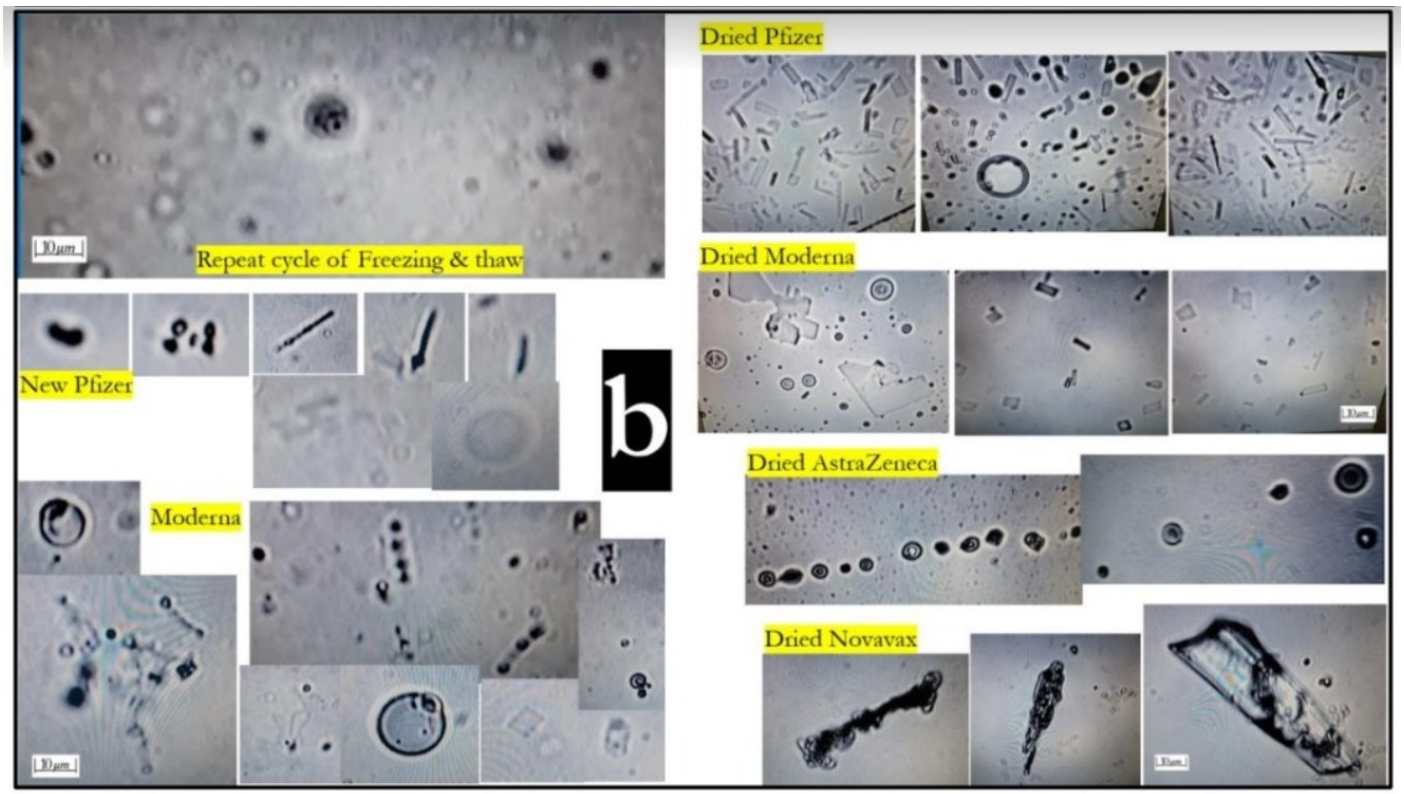
Desarrollo acelerado: Muchas de estas vacunas surgieron con procedimientos de autorización de emergencia. El estudio expone la falta de transparencia en los componentes de formulaciones que se elaboraron bajo plazos muy ajustados.

Debate global: Voces críticas como la del activista estadounidense Robert F. Kennedy Jr.—conocido por su postura cuestionadora frente a la industria farmacéutica—refuerzan el debate sobre la ética, la influencia económica y la responsabilidad social de estas corporaciones.

Implicaciones para la salud pública mundial

Esta investigación reaviva la discusión sobre las nanopartículas lipídicas (LNP) utilizadas especialmente en vacunas basadas en ARN mensajero (ARNm). La preocupación central es la citotoxicidad potencial de algunos componentes químicos que, según este análisis, no fueron oportunamente declarados.

En línea con el pensamiento de Robert F. Kennedy Jr., quien ha calificado a las vacunas COVID-19 como "las más mortales jamás fabricadas", se subraya la urgencia de promover ensayos clínicos transparentes y un mayor escrutinio regulatorio. Organizaciones internacionales, como Transparency International, denuncian la opacidad contractual entre farmacéuticas y gobiernos, lo que pone a prueba la confianza pública y la credibilidad de los organismos de control.



Por su parte, los autores del estudio exigen que de ahora en más se promueva:

⇒ Investigaciones independientes repliquen y profundicen estos hallazgos.

⇒ Transparencia en la declaración de componentes por parte de las farmacéuticas.

⇒ Fortalecimiento de procesos regulatorios para resguardar la seguridad de la población.

La investigación encabezada por la comprovinciana Lorena Diblasi abre la puerta a un escrutinio más riguroso de las vacunas COVID-19 y plantea la necesidad de reformular los estándares de control de calidad y regulación sanitaria. Mientras el debate sobre la seguridad y eficacia de estas vacunas continúa, el rol de la comunidad científica en la vigilancia y divulgación de información se vuelve aún más relevante.

Fuente: EL TUCUMANO. Disponible en https://lc.cx/lwgHfD

A more effective vaccine to combat dengue

Dec 16. Dengue continues to be a significant public health concern, with cases surpassing 340,000 this year alone. With rising dengue cases, a second-generation vaccine is crucial for Filipinos, offering a more effective way to prevent the disease and supporting public health efforts amid lingering distrust after the 2018 Dengvaxia controversy.controversy.

"The second-generation dengue vaccine addresses issues previously associated with first generation vaccines," explains Dr. Anna Ong-Lim, an infectious disease specialist. "With this new vaccine, there's no longer a need to determine if a person has had dengue before getting vaccinated. It's safe for both those who've had dengue before and those who haven't."

The new vaccine's profile is a major step forward from the first-generation vaccine, which required healthcare providers to check for prior infection. Without this screening, those without a previous dengue infection, known as "seronegative" patients, faced a risk of developing severe dengue if vaccinated. However, the second-generation vaccine eliminates that concern, making immunization accessible without testing for past infection.

For Dr. Ong-Lim, the second-generation vaccine represents a powerful addition to existing dengue prevention strategies. She compares it to other preventive measures taken in infectious diseases, such as COVID-19, where vaccines complement practices like physical distancing. "In high-risk diseases, prevention options are critical. When you have the chance to lower your risk with a vaccine, it's a valuable opportunity," she notes.

While the vaccine may initially be available only in private healthcare settings, Dr. Ong-Lim believes this doesn't diminish its significance. Like the chickenpox vaccine, which is available privately in the Philippines, the dengue vaccine can still provide crucial protection for those who choose to receive it.

Dr. Ong-Lim encourages people to discuss the vaccine with healthcare providers, emphasizing that a well-informed public will make better choices. "It's essential to consult with your physician to understand the benefits and risks and get answers to any questions you may have," she advises. "With better knowledge about the options available, individuals can make decisions with confidence."

The Philippine Medical Association (PMA) has reaffirmed its commitment to strengthening vaccination efforts in the country, emphasizing the critical role of immunization in preventing vaccine-preventable diseases (VPDs) like dengue, measles, and mumps. The PMA urged the medical community to restore public trust in vaccines by relying on evidence, research, and data to promote accurate information and reassure patients about vaccine safety. Backing initiatives like the Department of Health's "Oplan Balik-Eskwela" program, the PMA underscored the importance of vaccination for children and adults alike, alongside fostering trust in regulatory agencies to ensure vaccine efficacy and safety.

Fuente: Malaya Business Insight. Disponible en https://lc.cx/lSdLZ_

DKSH Supports MSD's Expansion with New Partnership to Improve Vaccine Access in Thailand

Dec 16. DKSH has been appointed by MSD (Thailand) Ltd. to support its expansion efforts in Thailand. This collaboration aims to enhance market coverage of MSD's vaccines and improve accessibility to such healthcare solutions, empowering patients in the fight against HPV-related diseases.

DKSH Business Unit Healthcare, a Strategic Healthcare Solutions Partner and leading provider of Market Expansion Services for pharmaceutical, over-the-counter (OTC), consumer health and medical device companies, has entered a new strategic partnership with MSD (Thailand) Ltd., the local subsidiary of a global research-intensive biopharmaceutical company. Through this collaboration, DKSH will support the commercialization of human papillomavirus (HPV) vaccines in Thailand. The partnership aims to expand market coverage and improve access to preventive healthcare for Thai patients.

This partnership marks another step forward in increasing awareness and vaccination rates for HPV in Thailand, a market that continues to face challenges in preventive care uptake.[1] According to a study on "Policy and plan for vaccine production and development in Thailand: a narrative review", the country faces challenges in ensuring adequate vaccine availability for Thai citizens, particularly during health crises and epidemics. This hampers efforts to achieve health equity and improve outcomes for vulnerable populations.

Under this agreement, DKSH will provide comprehensive Contract Sales Organization (CSO) services and patient solutions ensuring more convenient patient access to the HPV vaccine through hospitals, clinics, and health care partners throughout Thailand.

"By partnering with DKSH, we will be able to further improve healthcare consumers' access to our vaccines, ultimately improving vaccine coverage rates," said Dr. Mary Srethapakdi, Managing Director, MSD Thailand. "DKSH's one hundred year presence in Thailand and their unique go-to market model gives MSD full confidence in this partnership."

"Partnering with MSD, a globally recognized leader in medicines and vaccines, enables us to deepen our commitment to improving access and delivery of vaccines through innovative and integrated solutions to healthcare consumers," said Patrik Grande, Vice President, Regional Head of Commercial Outsourcing APAC

Healthcare, DKSH. "This collaboration brings our mission to life. With our proven expertise in developing brands with tailored go-to-market strategies, along with our extensive local network, we aim to provide greater access to MSD's HPV vaccine."

This partnership with MSD strengthens DKSH's commitment to addressing critical public health needs in Thailand. As a trusted healthcare partner, DKSH ensures that innovative solutions reach the people who need them most, contributing to a healthier future for Thai communities.

Fuente: newswit. Disponible en https://lc.cx/3vTpSR

SINOVAC inició un ensayo clínico de fase III sobre la vacuna bivalente contra la enfermedad de boca-mano-pie, (HFMD, por sus siglas en inglés)

17 dic. Sinovac Biotech Ltd. ("SINOVAC" o la "Compañía") (NASDAQ: SVA), un proveedor líder de productos biofarmacéuticos en China, hoy inició la inscripción para un ensayo clínico de fase III sobre una vacuna candidata para prevenir el HFMD causado por el enterovirus 71 (EV71) y Coxsackievirus 16 (CA16). Cabe destacar que todavía no se ha aprobado la comercialización de ninguna vacuna multivalente contra el HFMD en todo el mundo.

El ensayo clínico de fase III está diseñado como un ensayo multicéntrico, aleatorizado, doble ciego y controlado para evaluar la eficacia, seguridad e inmunogenicidad de esta vacuna candidata en lactantes y niños pequeños de entre 6 y 71 meses.

SINOVAC ha iniciado un ensayo clínico de fase I/II sobre su vacuna bivalente en China desde septiembre de 2023. Los resultados del ensayo clínico de fase I/II demostraron que la vacuna candidata tiene una seguridad e inmunogenicidad favorables.

El HFMD puede ser causado por varios enterovirus, que a menudo exhiben una baja inmunogenicidad cruzada, lo que lleva a una protección insuficiente. La HFMD afecta principalmente a niños menores de 5 años, y representa al menos el 90% del total de pacientes con HFMD. Para mejorar la protección de los niños, SINOVAC se ha comprometido a investigar y desarrollar vacunas multivalentes que aborden las protecciones contra una gama más amplia de tipos de virus dominantes. Basándose en estos esfuerzos, la compañía también ha desarrollado la primera vacuna de enterovirus inactivado tetravalente del mundo que recientemente fue aprobada para ensayos clínicos este diciembre. Esta vacuna está dirigida a prevenir el HFMD causado por EV71, CA16, CA10 y CA6.

Dedicada a proporcionar una protección integral para los niños, SINOVAC colaborará con socios para avanzar en la investigación clínica sobre las vacunas inactivadas de enterovirus bivalente y tetravalente, con el objetivo de que estas vacunas estén disponibles en el mercado lo antes posible.

Acerca de SINOVAC

Sinovac Biotech Ltd. (SINOVAC) es una empresa biofarmacéutica con sede en China que se dedica a I+D, fabricación y comercialización de productos biomédicos que protegen contra enfermedades infecciosas de seres humanos.

La cartera de productos de SINOVAC incluye vacunas contra la COVID-19, la enfermedad de boca-mano-pie causada por el enterovirus 71 (EV71), la hepatitis A, la varicela, la gripe, la poliomielitis, la enfermedad neumocócica, las paperas, etc.

La vacuna COVID-19, CoronaVac®, ha sido aprobada para su uso en más de 60 países y regiones de todo el mundo. La vacuna contra la hepatitis A, Healive®, superó los requisitos de precalificación de la OMS en 2017. La vacuna contra el EV71, Inlive®, es una vacuna innovadora de la "Categoría 1 de productos biológicos preventivos" y comercializada en China en 2016. En 2022, la vacuna antipolioviral (SIPV) y la vacuna contra la varicela de la cepa Sabin de SINOVAC fueron precalificadas por la OMS.

Fuente: BUSINESS WIRE. Disponible en https://lc.cx/s8OtYb

Butantan seeks approval for world's first single-dose dengue vaccine

Dec 17. The Butantan Institute, affiliated with the São Paulo government, has completed its application to health regulator ANVISA for the registration of its dengue vaccine candidate, Butantan-DV. On Monday, the institute submitted the final set of required documents, concluding the submission of three comprehensive information packages about the vaccine.

The vaccine candidate is a tetravalent, single-dose immunization. If approved, Butantan-DV would become the world's first single-dose vaccine against dengue fever. Clinical trials concluded in June when the last participant completed five years of monitoring.

Recently, the vaccine's safety and efficacy data were published in the New England Journal of Medicine, revealing an overall efficacy of 79.6% in preventing symptomatic dengue cases. Phase 3 clinical trial results, published in The Lancet Infectious Diseases, also demonstrated 89% protection against severe dengue and dengue with warning signs, with sustained efficacy and safety lasting up to five years.

Upon approval by ANVISA, the Butantan Institute could supply approximately 100 million shots to Brazil's Ministry of Health over the next three years. One million doses could be delivered as early as 2025, with the remaining doses provided between 2026 and 2027. The Ministry of Health will determine the vaccination criteria for the population.

Fuente: Valor International. Disponible en https://lc.cx/xtFWJn

New Vaccine Technologies Lead the Charge as Global Immunization Efforts Evolve

Dec 18. According to the World Health Organization, at least 154 million lives have been saved over the past five decades, thanks to vaccines, leading to the eradication of diseases like smallpox, with polio on the brink of elimination. Research from the Office of Health Economics earlier this year shows that adult vaccination programs can deliver returns of up to 19 times their initial investment. Prioritizing disease prevention naturally requires implementing effective immunization campaigns while also fostering an environment that encourages the development of new vaccine technologies. Behind the scenes, there are several innovators working towards new vaccines and new technologies to deliver them, with recent developments coming from BioVaxys Technology Corp. (CSE: BIOV) (OTCQB: BVAXF), Arcturus Therapeutics Holdings Inc. (NASDAQ: ARCT), Gilead Sciences, Inc. (NASDAQ: GILD), GeoVax Labs, Inc. (NASDAQ: GOVX, GOVXW), and Vaxcyte, Inc. (NASDAQ: PCVX).

According to analysts at Precedence Research the Global Vaccine Adjuvants Market is predicted to grow to US$2.18 billion by 2034, and projecting that the Oral Vaccine Market will hit US$9.62 billion by 2034, expanding at a 9.54% CAGR. Business Research Insights projects a 19% CAGR for the Global mRNA Cancer Vaccines and Therapeutics Market to touch US$960 million by 2032.

BioVaxys Secures GMP-Grade Lipid Supply for Production of DPX-Based Vaccines in Advance of Preclinical and Clinical Program Ramp-Up

BioVaxys Technology Corp. (CSE: BIOV) (OTCQB: BVAXF), a clinical-stage biopharmaceutical company, recently announced that in anticipation of restarting clinical studies of various DPX formulations and initiating new preclinical studies, it has acquired a 48kg supply of GMP-grade lipid to enable production of its DPX antigen packaging delivery platform.

These unused lipids from the former IMV, Inc. (the intellectual property of which was officially acquired by BioVaxys in February), had been previously produced in advance of anticipated IMV clinical studies and commercial ramp up. In February 2024, BioVaxys acquired 100% of the intellectual property and programs formerly owned by IMV.

BioVaxys' DPX™ technology (DPX), is a patented delivery platform that can package/deliver a range of bioactive molecules, such as mRNA/polynucleotides, peptides/proteins, virus-like particles, and small molecules, to produce targeted, long-lasting immune responses enabled by various formulated components. The DPX platform, which is non-aqueous and non-systemic, facilitates immune cell recruitment and antigen uptake at the injection site for delivery to regional lymph nodes via Antigen Presenting Cells, stimulating a robust and durable antigen-specific immune response.

"We were able to acquire the lipids on commercially attractive terms, with 48 kg of lipid anticipated to cover production for any conceivable preclinical or clinical trials over the next several years and save the Company over one year in manufacturing lead time for this drug substance," said Kenneth Kovan, President & Chief Operating Officer of BioVaxys.

BioVaxys has also signed a binding LOI to develop DPX™-Based Vaccines for Life Threatening Food Allergies, and has highlighted DPX's potential across multiple infectious disease studies and announced its plans for partnering and further development.

Arcturus Therapeutics Holdings Inc. (NASDAQ: ARCT), a commercial messenger RNA medicines company focused on the development of infectious disease vaccines and opportunities within liver and respiratory rare diseases, recently announced that the U.S. Food and Drug Administration (FDA) has issued a "Study Can Proceed" notification for the Company's Investigational New Drug (IND) application, ARCT-2304, a self-amplifying mRNA (sa-mRNA) vaccine candidate for active immunization to prevent pandemic influenza disease caused by H5N1 virus. The clinical study is funded by Biomedical Advanced Research and Development Authority (BARDA) and designed to enroll approximately 200 healthy adults in the United States.

"Arcturus is actively engaged with the U.S. government to prepare for the next pandemic, and clearance to proceed into the clinic with our STARR® self-amplifying mRNA technology is a key step in this important process," said Joseph Payne, President and CEO of Arcturus.

"The Phase 1 clinical trial is designed to evaluate the safety, reactogenicity, and immunogenicity of ARCT-2304 as a potential vaccine to protect against the highly pathogenic H5N1 avian influenza."

Gilead Sciences, Inc. (NASDAQ: GILD), an antiviral specialist, recently acquired investigational assets related to the HTI therapeutic HIV vaccine from Spanish HIV immunotherapies company AELIX Therapeutics, a spin-off of IrisCaixa. The transaction represented a significant step forward in the development of innovative strategies for curing HIV. Financial details of the deal were not disclosed. Prior to the acquisition, Gilead and AELIX first collaborated in 2018 to investigate AELIX's vaccine with Gilead's antiviral vesatolimod in HIV-infected individuals.

The HTI vaccine has undergone Phase I and Phase II clinical trials. In February 2023, AELIX reported positive results from the Phase II AELIX-003 trial (NCT04364035), confirming the study achieved its primary and secondary endpoints for safety, tolerability, and immunogenicity. The trial assessed the vaccine in combination with vesatolimod in individuals with HIV receiving antiretroviral therapy.

In December 2022, the FDA approved Gilead's Sunlenca (lenacapavir) as a treatment for HIV patients with resistance to other medications. Lenacapavir, the active ingredient in Sunlenca, is also being studied in the PURPOSE-1 (NCT04994509) and PURPOSE-2 clinical trials as a PrEP medication, aimed at reducing the risk of HIV infection in HIV-negative individuals.

GeoVax Labs, Inc. (NASDAQ: GOVX, GOVXW), a biotechnology company developing immunotherapies and vaccines against cancers and infectious diseases, recently announced that the U.S. Patent and Trademark Office has issued a Notice of Allowance for its patent titled "Vaccinia Viral Vectors Encoding Chimeric Virus Like Particles." The patent strengthens GeoVax's intellectual property for its MVA-VLP platform, which expresses tumor-associated antigens (TAAs) in virus-like particles. This includes its MUC1 immunotherapy candidate, MVA-VLP-MUC1, targeting cancers such as breast, colon, ovarian, prostate, pancreatic, and lung. In preclinical studies, MVA-VLP-MUC1 combined with anti-PD-1 showed a 57% reduction in tumor growth, while a preventive model demonstrated 100% tumor growth prevention compared to untreated controls.

"This patent allowance adds to our growing portfolio of wholly owned, co-owned, and in-licensed intellectual property, now standing at over 120 granted or pending patent applications spread over 24 patent families," said David Dodd, President and CEO of GeoVax. "The initial results with our MVA-VLP-MUC1 immunotherapy candidates have been encouraging. We believe our MVA vector platform is well-suited for development of therapeutic cancer vaccines based on the expression of tumor-associated antigens such as MUC1 and Cyclin B1, among others."

Vaxcyte, Inc. (NASDAQ: PCVX), a clinical-stage vaccine innovation company engineering high-fidelity vaccines to protect humankind from the consequences of bacterial diseases, recently announced the initiation of the Phase 2 study of VAX-31 in healthy infants and that the first study participants have been dosed. This study is evaluating the safety, tolerability and immunogenicity of VAX-31, a 31-valent pneumococcal conjugate vaccine (PCV) candidate designed to prevent invasive pneumococcal disease (IPD). Vaxcyte expects to share topline data from the primary three-dose immunization series of the study in mid-2026, followed by topline data from the booster dose approximately nine months later.

"The initiation of the VAX-31 Phase 2 infant study marks a significant milestone as we continue advancing our PCV clinical programs, which also include the fully enrolled, ongoing VAX-24 Phase 2 infant study," said Grant Pickering, CEO and Co-founder of Vaxcyte. "PCVs are vital to combating Streptococcus pneumoniae, a serious public health threat exacerbated by increasing antimicrobial resistance. As the broadest-spectrum PCV candidate in the clinic today, VAX-31 has the potential to expand coverage and provide protection against both currently circulating and historically prevalent serotypes.

We look forward to sharing topline data for safety, tolerability and immunogenicity from the VAX-31 Phase 2 infant study's primary immunization series in mid-2026, and from the booster dose approximately nine months later."

Fuente: The Globe and Mail. Disponible en https://lc.cx/EaHa4R

IPN participa en desarrollo de vacuna contra virus Mayaro

19 dic. El Instituto Politécnico Nacional (IPN), junto con la Universidad de Oxford y el Centro Médico de la Universidad de Texas (UTMB), desarrolló una vacuna contra el virus Mayaro, relacionado con chikungunya y transmitido por el mosquito Aedes.


FOTO: IPN

El proyecto incluyó la colaboración de instituciones internacionales como las universidades de Bonn,en Alemania; la de Helsinki, en Finlandia, y la de São Paulo, en Brasil. Además, el director general del IPN, Arturo Reyes Sandoval, participó como investigador Senior.

De acuerdo con el artículo "Las partículas similares al virus Mayaro recombinantes inmunogénicas presentan una glicoproteína ensamblada de forma nativa", publicado por las Revistas Asociadas de Nature, el virus Mayaro podría adaptarse a ciclos de transmisión urbana a través de los mosquitos Aedes. Este causa fiebre y artritis crónica grave.

Sin vacuna existente

Actualmente, no existen vacunas ni tratamientos específicos para combatirlo.

En la publicación se enfatizan los avances en el uso de partículas similares a virus (VLP), tecnología probada con éxito en vacunas como la del Virus del Papiloma Humano (VPH). Estas VLP podrían ser una opción eficaz contra el Mayaro por su capacidad de generar una respuesta inmune rápida y segura.

El investigador de la Universidad de Oxford, Young Chan David Kim, agradeció a los científicos involucrados en la investigación, destacando la relevancia de la cooperación internacional en este esfuerzo.

Fuente: Once Noticias Digital. Disponible en https://lc.cx/bqLhEr

La Comisión Federal para la Protección contra Riesgos Sanitarios aprueba la vacuna contra el virus sincitial respiratorio para embarazadas y adultos mayores

19 dic. La Comisión Federal para la Protección contra Riesgos Sanitarios (COFEPRIS) aprobó el lunes 16 de diciembre la vacuna contra el virus sincitial respiratorio (VSR), que puede administrarse durante el embarazo.

La vacuna bivalente, recombinante, contra el virus sincicial respiratorio se puede administrar entre las semanas 32 y 36 del embarazo. Administrado como una inyección intramuscular de dosis única en personas embarazadas, la COFEPRIS aprobó la vacunación para "la prevención de enfermedades respiratorias causadas por el virus sincitial respiratorio en lactantes desde los 0 hasta los 6 meses de edad". Asimismo, se puede aplicar en personas de 60 años y más.

El virus sincitial respiratorio es una causa común de enfermedad en pacientes pediátricos, y los lactantes son un grupo que corre riesgo de presentar una enfermedad muy grave, al igual que los adultos mayores, señala el comunicado de prensa.

La mayoría de los pacientes pediátricos se infectan con el virus al menos una vez cuando llegan a los 2 años de edad. Los pacientes muy pequeños corren un riesgo especial de sufrir complicaciones graves, como neumonía o bronquitis, riesgos que la vacunación reduce.

Antes de que la vacuna estuviera disponible, hasta 3 % de los lactantes infectados con virus sincitial respiratorio necesitaba ser hospitalizado en Estados Unidos, según datos de Centros para el Control y la Prevención de Enfermedades (CDC). En el hospital, el tratamiento generalmente incluye oxígeno, líquidos intravenosos y ventilación mecánica.

El virus sincitial respiratorio suele causar síntomas de resfriado común, pero el virus plantea el riesgo de complicaciones graves que pueden provocar la muerte en lactantes y personas mayores. CDC de Estados Unidos estima que entre 100 y 300 muertes de menores de 5 años y entre 6.000 y 10.000 muertes de personas de 65 años o más están relacionadas con el virus sincitial respiratorio cada año. En México para la semana epidemiológica 50 en la temporada estacional 2024-2025, se han confirmado 2.244 casos positivos a infecciones por otros virus respiratorios, 44,7 % correspondientes a virus sincicial respiratorio.

Actualmente en México también está disponible para la prevención de enfermedad grave en lactantes menores de 1 año (principalmente para prematuros y aquellos con problemas pulmonares o cardiacos) el uso de palivizumab, inmunización pasiva con anticuerpos monoclonales frente a la proteína F del virus sincitial respiratorio, de administración después del nacimiento.

Fuente: MedScape. Disponible en https://lc.cx/d5gTrx

Nigeria pioneers global rollout of new meningitis vaccine

Dec 20. Nigeria has become the first country worldwide to introduce a groundbreaking five-in-one meningitis vaccine, Men5CV, in a landmark public health achievement, the World Health Organization (WHO) said on Thursday night.

The WHO-recommended Men5CV vaccine offers protection against five major strains of meningococcal bacteria (A, C, W, Y, and X), marking a significant advancement in the fight against the deadly disease.

“Nigeria has become the first country in the world to roll out a ‘revolutionary' five-in-one vaccine against

meningitis. The Men5CV vaccine, recommended by WHO, protects people against five strains of the meningococcal bacteria," the health agency announced on X.

WHO notes the vaccine has the potential to dramatically reduce the burden of meningitis in Nigeria and across sub-Saharan Africa, a region that experiences frequent outbreaks.

Deadly infection

Meningitis is a serious infection of the membranes surrounding the brain and spinal cord and can cause severe complications, including brain damage, hearing loss, and even death.

WHO says the vaccine coverage is particularly important in regions like sub-Saharan Africa, where multiple strains of meningitis can circulate simultaneously.

Around 30,000 cases are still reported each year, with high fatality (up to 50% when untreated), according to the Africa Centre for Disease Control and Prevention (AFRICA CDC).

WHO praised the Nigerian government and other partners for the vaccine rollout as part of its commitment to improving public health and protecting its citizens from preventable diseases.

WHO also announced Senegal has become the first African country to establish an emergency medical team in line with WHO standards.

"The team can deploy to health crises around the world. A milestone for the country and the region's emergency response capacity," the WHO statement added.

Fuente: TRT AFRIKA. Disponible en https://lc.cx/QwLP4w

Is Moderna Stock a Buy?

Dec 20. Moderna's (NASDAQ: MRNA) wild success in the COVID-19 vaccine market has worn off. The company's revenue, earnings, and stock price have been moving in the wrong direction for the past three years, a period during which the biotech has lost 85% of its value.

Despite what it seems, though, Moderna has made clinical and regulatory progress. If that continues and the company's plans pan out, it could deliver excellent returns to investors who initiate positions now. Let's find out whether this scenario is realistic for Moderna.

The COVID-19 vaccine market is still alive

Though we are no longer in a state of extreme emergency, COVID-19 is still a problem. Thousands of people continue to get sick, become hospitalized, and die. That's especially the case with those who are at a higher risk from the disease, including seniors and people with some pre-existing conditions. So, there remains a market for Moderna's COVID-19 vaccine, although the demand has fallen off a cliff since 2021. In the third quarter, Moderna reported $1.9 billion in revenue, roughly flat compared to the year-ago period.

On the bottom line, the biotech reported net earnings per share of $0.03 compared to a net loss of $9.53 recorded in the year-ago period. Moderna's sales were almost entirely from Spikevax, its coronavirus vaccine.

It also had a 40% share of the U.S. commercial coronavirus vaccine market. Moderna will likely remain a leader in this space for the next five years.

Looking at other opportunities

In March, Moderna earned approval for a vaccine for the respiratory syncytial virus (RSV), mRESVIA. In Q3, this product generated just $10 million in sales. That's not much, but Moderna has more tricks up its sleeves. In June, it reported positive phase 3 results for a combination COVID/flu vaccine. Moderna's late-stage pipeline also features candidates for the cytomegalovirus (CMV), a stand-alone flu candidate, a potential norovirus vaccine, and a personalized cancer vaccine.

Some of these products look promising. There are currently no approved vaccines for the CMV or the norovirus. Moderna's candidates could be the first or at least among the first. Furthermore, consider Moderna's personalized cancer vaccine, which it is developing in collaboration with Merck. In a phase 2b study in melanoma patients, this candidate, combined with Merck's cancer drug Keytruda, decreased the risk of disease recurrence or death by 49% and the risk of metastasis or death by 62% compared to Keytruda alone after 34.9 months of follow-up.

Moderna should release some data from its late-stage candidates through the next year. However, the company's pipeline extends beyond that. Moderna has several more programs in phase 1 and 2 studies. From cancer to Lyme disease to HIV, the company is going after many targets, including some very challenging ones. They won't all pan out. No biotech company has a 100% success rate. But Moderna could transform its lineup over the next five years.

Fuente: The Globe and Mail. Disponible en https://lc.cx/5_EOhs

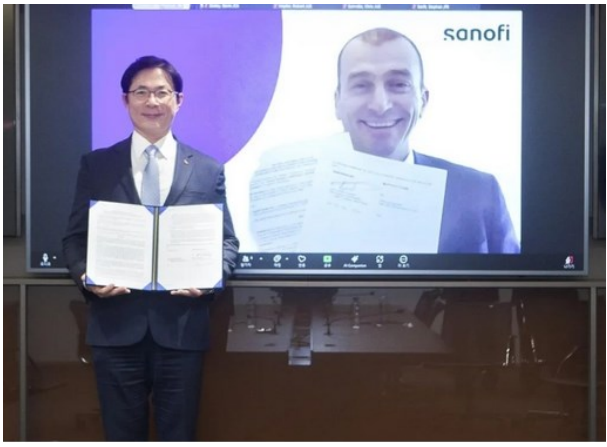
CanSino Biologics Inc. Anuncia el inicio de un ensayo clínico de fase II/III y la finalización de la inscripción del primer paciente en el ensayo clínico de fase II para TDCP Adolescente y Adulto

20 dec. CanSino Biologics Inc. anunció que el ensayo clínico de fase II/III para la vacuna combinada absorbida contra la difteria, el tétanos y la tos ferina acelular (componentes) (para personas a partir de seis años) (la "Tdcp Adolescente y Adulto") desarrollada por la empresa se inició oficialmente hace poco y se ha inscrito formalmente el primer caso de paciente del ensayo clínico de fase II. La TDCP Adolescente y Adulto es una vacuna de refuerzo contra la difteria, el tétanos y la tos ferina acelular para adolescentes y adultos a partir de seis años. Mientras que los principales países desarrollados ya han incorporado esta vacuna a sus programas de vacunación rutinarios, en China no existe actualmente ninguna vacuna de refuerzo aprobada contra la difteria, el tétanos y la tos ferina acelular para adolescentes y adultos.

Por lo tanto, el lanzamiento con éxito de este producto cubrirá la laguna existente en el mercado nacional. El proceso de fabricación de la vacuna copurificada contra la difteria, el tétanos y la tos ferina acelular actualmente disponible en China utiliza un proceso de copurificación de los antígenos de la tos ferina. Como vacuna contra la difteria, el tétanos y la tos ferina acelular (componentes), cada antígeno de tos ferina de la Tdcp Adolescente y Adulto puede purificarse por separado y formularse en una proporción definida, garantizando así la consistencia de la calidad del producto lote a lote y haciendo que el producto sea más estable.

Fuente: Market Screener. Disponible en https://lc.cx/qhQHkC

Sanofi expands collaboration with SK Bioscience



Dec 23. In parallel with the expansion of its collaboration with SK Bioscience Co. Ltd, the French pharmaceutical company Sanofi SA has announced Phase III testing of its licensed pneumococcal conjugate vaccine PCV21.

Sanofi SA and SK Bioscience Co. Ltd have entered into a new chapter of their collaboration in pneumococcal vaccines with an expanded agreement to develop, license and commercialize next-generation PCVs for both pediatric and adult populations, reaffirming their commitment to fighting pneumococcal disease.

Under the terms of the expanded agreement, both companies will co-fund research and development costs. Sanofi will pay €50m upfront to SK Bioscience, which is set to cash in success-dependent development and commercial milestone payments. Once registered, Sanofi will commercialise the vaccines worldwide except for South Korea, where SK Bioscience will have commercial exclusivity. SK Bioscience will receive royalty payments on product sales outside South Korea.

The expansion builds on the companies' existing collaboration to develop and commercialize a PCV21 pediatric vaccine. Next week, Sanofi will kickoff Phase III testing of its 21-valent pneumococcal conjugate vaccine (PCV21) against more than 20 serotypes infants & toddlers. The PCV21 Phase III programme is based on positive Phase II results announced last year and will include more than 7,700 infants and adolescents across multiple geographies, including the US, Europe, Australia, Asia, and Latin America.

Despite decades of public health vaccination programs, invasive pneumococcal disease (IPD) continues to inflict a substantial burden of disease, primarily due to Streptococcus pneumoniae serotypes that are not covered bn currently available conjugate vaccines. According to data from Evaluate Pharma, the global pneumococcal vaccine market is projected to grow from €7.85bn in 2024 to €9.1bn in 2028, with an average annual growth rate (CAGR) of 4.7%. The pediatric market represents 65 to 70 % of the pneumococcal vaccine market.

Fuente: European Biotechnology. Disponible en https://lc.cx/KtblqI

La OMS insta a mantener la composición antigénica actual de las vacunas contra la COVID-19

23 dic. En la última reunión del Grupo Técnico Asesor de la Organización Mundial de la Salud sobre la Composición de las Vacunas contra la COVID-19 (TAG-CO-VAC) se emitieron nuevas recomendaciones sobre las vacunas contra el coronavirus. El TAG-CO-VAC, que sigue de cerca la evolución genética y antigénica del SARS-CoV-2, las respuestas inmunitarias a la infección y la vacunación, y el rendimiento de las vacunas frente a las variantes circulantes, ha insistido en la necesidad de mantener la composición antigénica actual de las vacunas, a pesar de las variaciones y mutaciones observadas en los linajes descendientes del virus.

A pesar de que el SARS-CoV-2 sigue causando un considerable número de infecciones graves, muertes y secuelas en todo el mundo, el TAG-CO-VAC ha resaltado que las variantes circulantes actualmente están derivadas principalmente del linaje JN.1. Aunque variantes emergentes como LP.8.1, NP.1 y LF.7.2 están

siendo monitorizadas, hasta ahora no han mostrado una capacidad de escape inmunológico significativamente mayor que la variante XEC, que sigue siendo la principal variante en circulación. Sin embargo, el TAG-CO-VAC subraya que estas variantes emergentes podrían representar un riesgo futuro, por lo que el monitoreo de las mutaciones y sus posibles impactos en la salud pública sigue siendo una prioridad.

"Aunque variantes emergentes como LP.8.1, NP.1 y LF.7.2 están siendo monitorizadas, hasta ahora no han mostrado una capacidad de escape inmunológico mayor que la variante XEC, que sigue siendo la principal variante en circulación."

La evidencia revisada por este grupo asesor también muestra que las vacunas monovalentes, como las que incluyen el antígeno del linaje JN.1, continúan proporcionando una respuesta robusta de anticuerpos neutralizantes, especialmente frente a los linajes descendientes de JN.1. Los datos preclínicos y clínicos indican que estas vacunas mantienen una buena eficacia contra las variantes predominantes, aunque se ha observado que la neutralización es algo menor para variantes como XEC y KP.3.1.1.

Limitaciones en los datos

Uno de los principales retos que enfrenta la comunidad científica en la lucha contra la COVID-19 sigue siendo la falta de datos completos y actualizados sobre la evolución del virus y su respuesta inmunitaria. El TAG-CO-VAC ha señalado varias limitaciones en los estudios disponibles, incluyendo la escasa vigilancia genética y genómica, especialmente en países con menos recursos, lo que ha llevado a una reducción en la cantidad y diversidad geográfica de las secuencias del SARS-CoV-2 enviadas a GISAID. Esto dificulta la identificación temprana de nuevas variantes y la evaluación de su impacto potencial.

Además, el grupo ha advertido que aún es incierto cómo las variantes emergentes pueden afectar la inmunidad generada tanto por la vacunación como por las infecciones previas, ya que las respuestas inmunitarias son complejas y no se limitan a la producción de anticuerpos neutralizantes. Aunque estos anticuerpos son considerados factores importantes de protección, otros componentes de la respuesta inmune, como la inmunidad celular, todavía no están lo suficientemente estudiados.

Recomendaciones para la composición antigénica

El TAG-CO-VAC recomendó mantener la composición antigénica actual de las vacunas contra la COVID-19, es decir, las vacunas monovalentes que incluyen el antígeno del linaje JN.1. Este enfoque ha demostrado eficacia en la inducción de respuestas de anticuerpos neutralizantes que proporcionan una protección considerable contra las variantes actuales, incluidas las derivadas de JN.1 como KP.3.1.1 y XEC.

No obstante, también han considerado otros enfoques para las futuras formulaciones de vacunas. El grupo señaló que se podrían considerar antígenos derivados de variantes más recientes si estos logran inducir una respuesta inmunitaria más amplia y robusta. Sin embargo, debido a la incertidumbre sobre las futuras mutaciones y el impacto que puedan tener en la efectividad de las vacunas, las autoridades sanitarias deben continuar monitoreando la situación constantemente.

Así, han instado a una mayor inversión en la vigilancia epidemiológica y virológica, especialmente en países en desarrollo donde la recolección de datos sigue siendo insuficiente. Para mejorar la precisión de las estimaciones de efectividad de las vacunas y la identificación de nuevas variantes, el grupo asesor recomendó reforzar la recopilación de datos de inmunogenicidad y efectividad clínica, lo cual permitirá a las autoridades sanitarias tomar decisiones basadas en evidencia actualizada.

También han enfatizado la necesidad de realizar estudios comparativos directos entre las vacunas monovalentes JN.1, KP.2 y XBB.1.5, así como con otras composiciones antigénicas, para proporcionar una mejor comprensión de su rendimiento frente a las variantes circulantes.

Fuente: Gaceta Médica. Disponible en https://lc.cx/A5lwkN

World's 1st RSV vaccine, GSK's Arexvy, lands in Korea

Dec 25. GSK's Arexvy, the world's first vaccine for respiratory syncytial virus (RSV), has landed in Korea.

On Tuesday, the Ministry of Food and Drug Safety (MFDS) approved the use of Arexvy for the prevention of lower respiratory tract disease (LRTD) caused by RSV in adults aged 60 years and older.

RSV, also known as human respiratory syncytial virus (hRSV) or human orthopneumovirus, is a common contagious respiratory virus.

It typically causes cold-like symptoms and most people recover within a week or two, but symptoms can be particularly severe in infants and older adults.

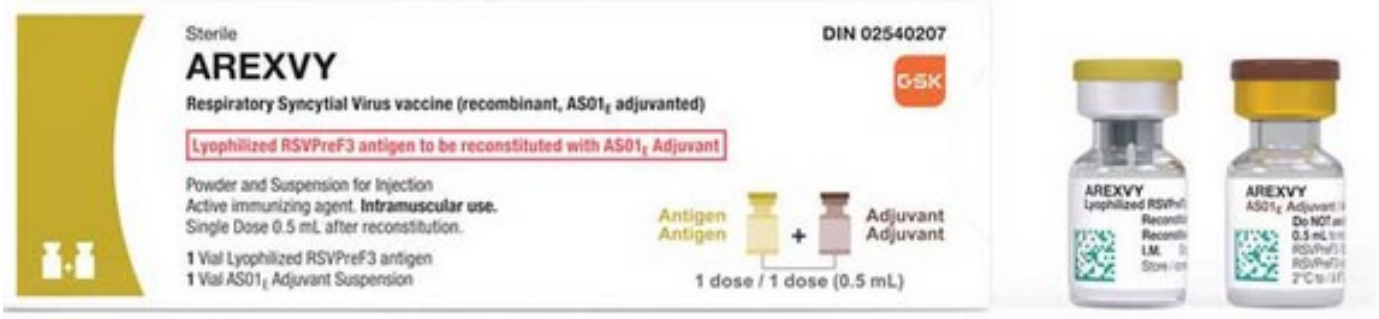
The disease burden of RSV in Korea has not been systematically assessed. However, according to the local medical community, there were about 11,000 hospitalizations for lower respiratory tract illnesses caused by RSV in Korea last year.

In particular, children under the age of two with underlying medical conditions may require hospitalization and even intensive care unit treatment in the event of LRTI, and in older adults with weakened immune systems, the disease can lead to pneumonia, chronic obstructive pulmonary disease, and congestive heart failure.

The KCDA is operating a hospitalized patient sample surveillance system to monitor RSV infection trends. Recently, the agency announced that it will consider introducing a national immunization program (NIP) for RSV vaccine during the winter season.

In general, the RSV market can be broadly divided into adult and maternal/pediatric segments, and the adult market is expanding as the aging population progresses.

In Korea, AstraZeneca's preventive antibody Synagis (palivizumab) has been used to prevent lower respiratory tract diseases caused by RSV in children, and recently, Sanofi's Beyfortus (nirsevimab) was introduced in April, expanding options, but there is no RSV vaccine for adults.



Amid this, Arexvy arrived in Korea as the first adult RSV vaccine.

The Korean approval of Arexvy was based on the results of the ongoing phase 3 clinical RSV OA=ADJ-006 study conducted in 17 countries in the Northern and Southern Hemispheres.

The study was designed to evaluate the safety and effectiveness of a single dose of Arexvy in adults aged 60 years and older, with participants enrolled in the study for three RSV seasons to assess the duration of effectiveness and the safety and effectiveness of repeated vaccination.

The study is ongoing, and the MFDS approved Arexvy based on efficacy data through the second season. In the first season, Arexvy reduced the risk of developing RSV-related LRTD by 82.6 percent and the risk of developing severe RSV-related LRTD by 94.1 percent compared to placebo in adults 60 and older. In the second season, the efficacy of Arexvy for RSV-related LRTD was 56.1 percent.

The safety profile was based on 12,467 patients who received a single dose of Arexvy and 12,499 patients who received a placebo in the study. The results showed that the most common adverse events reported (≥10 percent) were injection site pain (60.9 percent), fatigue (33.6 percent), myalgia (28.9 percent), headache (27.2 percent), and arthralgia (18.1 percent). Serious adverse events were reported at similar rates in the Arexvy (4.2 percent) and placebo (4.0 percent) arms.

Fuente: Korea Biomedical Review. Disponible en https://lc.cx/A3Fk0a

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Patentes registradas en Patentscope

Estrategia de búqueda: (Vaccine) AND DP:([12.12.2024 TO 25.12.2024]) *as the publication date 37 records.*

1.4477231KOMBINATIONSIMPFSTOFF
EP - 18.12.2024
Clasificación Internacional A61K 39/155 Nº de solicitud 24199040 Solicitante CUREVAC SE Inventor/a KALLEN KARL-JOSEF
The present invention relates to a vaccine, especially a combination vaccine providing at least a first and a second antigenic function, the combination vaccine comprising at least one RNA encoding at least one or more proteins or fragments, variants or derivatives of proteins awarding antigenic function, wherein the first antigenic function being a Fusion (F) protein or a fragment, variant or derivative of a Fusion (F) protein derived

from the virus family Paramyxoviridae and the second antigenic function being an Hemagglutinin (HA) protein or a fragment, variant or derivative of an Hemagglutinin (HA) protein derived from the virus family Orthomyxoviridae. Furthermore, the present invention is directed to a kit or kit of parts comprising the components of said combination vaccine and to said combination vaccine for use in a method of prophylactic or therapeutic treatment of diseases, particularly in the prevention or treatment of infectious diseases like RSV and influenza.

2.20240415950MULTIVALENT VACCINE COMPOSITION FOR PREVENTION OF PORCINE MYCOPLASMA AND PORCINE CIRCOVIRUS INFECTIONS
US - 19.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 18703680 Solicitante INNOVAC Inventor/a Tae Wook HAHN

The present invention relates to a multivalent vaccine composition for prevention of porcine *mycoplasma* and porcine circovirus infections and an infection prevention method using same. The multivalent vaccine composition according to the present invention exhibits a reciprocally supplemental effect on immune responses in pigs used as experimental animals and target animals and does not allow for interference between antigens. When inoculated into pigs, the vaccine composition induces high serological levels of antibody titers and neutralizing antibody titers and produces a high level of IFN-γ for Mhp or PCV2 stimulation in PBMC. Thus, the vaccine composition can find advantageous applications for preventing porcine *mycoplasma* and porcine circovirus infections.

3.4475881IMPFSTOFF GEGEN CAMPYLOBACTER JEJUNI
EP - 18.12.2024
Clasificación Internacional A61K 39/02 Nº de solicitud 22706273 Solicitante ENVIROTECH INNOVATIVE PRODUCTS LTD Inventor/a WARD PATRICK

The invention provides a polypeptide that is antigenic in a host. The invention also provides a vaccine for use in reducing or preventing *Campylobacter* colonization in a host. The vaccine comprises a polypeptide of the present invention and / or antibodies against the polypeptide of the present invention. The host may be a human, cow, sheep, goat, and chicken. The invention has particular application for reducing or preventing *Campylobacter jejuni* colonization in poultry. The invention also provides a vaccine for use in reducing or preventing campylobacteriosis; and a vaccine composition comprising the polypeptide of the present invention; or antibodies raised against the polypeptide of the present invention, in association with a pharmaceutically acceptable vehicle useful for inducing an immune response in a host.

4.20240408189MULTI-CBV VACCINE FOR PREVENTING OR TREATING TYPE I DIABETES US - 12.12.2024
Clasificación Internacional A61K 39/125 Nº de solicitud 18418050 Solicitante Vactech Oy Inventor/a Heikki Hyöty

The invention is directed to a vaccine comprising: i) coxsackie B virus CBV1 and CBV2, and ii) at least one coxsackie B virus selected from CBV3, CBV4, CBV5 and CBV6. The CBVs are present in the vaccine in inactivated form, in the form of a component of the virus or as an antibody against the virus. The vaccine is effective in preventing and treating type 1 diabetes. So is an anti-coxsackie B virus composition provided.

5.WO/2024/250376IN-VITRO ACTIVATED MIXED CELL CANCER VACCINE CONTAINING DENDRITIC CELLS AND B CELLS, AND USE THEREOF

WO - 12.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2023/106906 Solicitante SUZHOU ERSHENG BIOMEDICAL CO., LTD. Inventor/a LIU, Mi
Provided are an in vitro activated mixed cell cancer vaccine containing dendritic cells and B cells, and a use thereof. The mixed cell vaccine is obtained by simultaneously activating dendritic cells and B cells in vitro by means of antigen delivery particles; the antigen delivery particles are nanoparticles and/or micronparticles loaded with an antigen component; the antigen component is derived from one or more of the following: (1) a water-soluble component and/or a non-water-soluble component in cancer cells and/or cells in a tumor tissue; (2) a protein and a polypeptide component in the water-soluble component and/or non-water-soluble component; (3) an RNA component in the water-soluble component and/or non-water-soluble component; (4) a protein and/or polypeptide synthesized in vitro and containing an antigen polypeptide epitope; and (5) a nucleic acid synthesized in vitro and capable of expressing an antigen polypeptide epitope. In the present invention, the current technical prejudice against the effect of initial activation of T cells by B cells is overcome, and it is found that the mixed cell vaccine system of dendritic cells and B cells is significantly more effective than existing dendritic cell vaccines.

6.202404159 53ORAL THERAPEUTIC VACCINE COMPOSITIONS, METHODS AND TREATMENT OF COVID
US - 19.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18712678 Solicitante Immunitor (Thailand) Co. Ltd. Inventor/a Vichai Jirathitikal

Described herein are oral vaccine compositions for preventing and treating COVID and COVID related complications (e.g., cytokine storm related complications). These oral vaccine compositions comprise hydrolyzed and heat inactivated anti-viral antisense and other nucleic acid components that target the expression of SARS-CoV-2 viral proteins. Such oral vaccine compositions are room temperature stable and stimulate humoral (antibody), cellular and mucosal immunity.

7.WO/2024/251281RSV VACCINE COMPOSITION, METHOD AND USE THEREOF
WO - 12.12.2024
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/CN2024/098246 Solicitante SICHUAN CLOVER BIOPHARMACEUTICALS, INC. Inventor/a LIANG, Joshua
An immunogenic composition comprising a recombinant peptide and a protein, wherein the recombinant peptide and the protein comprise a respiratory syncytial virus (RSV) viral antigen and an immunogen such as an RSV F protein peptide. The immunogenic composition comprises a secreted fusion protein, the secreted fusion protein comprises a soluble RSV virus antigen, and the soluble RSV virus antigen is linked with the Cterminal part of collagen by means of in-frame fusion to form a disulfide bond-linked trimer fusion protein. The immunogenic composition can be used for producing an immune response, for example for treating or preventing RSV infection. The immunogenic composition can be used in a vaccine composition, for example as part of a prophylactic and/or therapeutic vaccine. Further provided are a method for producing the recombinant peptide and protein, prevention, treatment and/or diagnosis methods and related kits.

8.4477232REKOMBINANTER MULTIVALENTER IMPFSTOFF
EP - 18.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 23851587 Solicitante SHANGHAI PUBLIC HEALTH CLINICAL CT Inventor/a YAN HUIMIN

The present invention relates to a recombinant multivalent vaccine, including a recombinant protein, wherein the recombinant protein includes, from a N-terminus to a C-terminus, a first antigenic peptide, an Npolypeptide (SEQ ID NO. 1), a second antigenic peptide, a C-polypeptide (SEQ ID NO. 3) and a third antigenic peptide, wherein the N-polypeptide and the C-polypeptide are intramolecular scaffold-forming polypeptides, forming an intramolecular scaffold NC for supporting and stabilizing conformations of the first antigenic peptide, the second antigenic peptide and the third antigenic peptide. The present invention provides recombinant multivalent vaccines 3Ro-NC (SEQ ID NO. 17) and 3Rs-NC (SEQ ID NO. 19) against SARS-CoV-2 variants. The present invention uses 3Ro-NC plus KFD as a prophylactic mucosal SARS-CoV2 vaccine to provide protection against Omicron infection in upper and lower respiratory tracts.

9.20240410878EX VIVO HUMAN MODEL INTENDED FOR EVALUATING THE VACCINE POTENTIAL OF A COMPOSITION
US - 12.12.2024
Clasificación Internacional G01N 33/50 Nº de solicitud 18785910 Solicitante GENOSKIN Inventor/a Manon SCHOLAERT

The present invention relates to an in vitro method intended to determine the vaccine potential of a composition comprising the steps of: ia) transcutaneous administration of the composition to a skin explant, comprising the epidermis, dermis and skin appendages as well as a thickness of at least 5 millimeters of hypodermis; ib) determination of the activation status of antigen-presenting cells within the skin explant; and ii) determination of the vaccine potential of the composition.

10.WO/2024/255026POSITIVE SERUM FOR LUMPY SKIN DISEASE VIRUS, AND PREPARATION METHOD THEREFOR AND USE THEREOF
WO - 19.12.2024
Clasificación Internacional C07K 16/08 Nº de solicitud PCT/CN2023/123909 Solicitante JINYU BAOLING BIO-PHARMACEUTICAL CO., LTD Inventor/a XIN, Junli
The present invention relates to the technical field of veterinary biological products, and in particular to a positive serum for a lumpy skin disease virus, and a preparation method therefor and a use thereof. Healthy negative cattle are inoculated with an inactivated vaccine, the number of inoculations is greater than or equal to 2, and the dose of the inactivated vaccine inoculated each time is larger than or equal to 6 mL, so that a positive serum for a lumpy skin disease virus is finally prepared. The positive serum for a lumpy skin disease virus has a neutralizing antibody titer of ≥1:32, and can be fully applicable to each test item involved in the vaccine development process, so that the present invention solves the bottleneck problem of quality control in the development process of inactivated vaccines for lumpy skin diseases, fills the gap in the preparation process of positive serums for a lumpy skin disease virus, and has important significance for long-term development of veterinary biological product industry.

11.WO/2024/258248INFECTIOUS BRONCHITIS CHIMERIC VIRUS COMPRISING FOREIGN QX-LIKE VIRUS SPIKE PROTEIN AND VACCINE COMPOSITION COMPRISING SAME
WO - 19.12.2024
Clasificación Internacional C12N 7/00 Nº de solicitud PCT/KR2024/008293 Solicitante GENINER CO., LTD. Inventor/a KWON, Hyuk-Joon
The present specification relates to an infectious bronchitis chimeric virus comprising a foreign QX-like virus spike protein, and a vaccine composition comprising same, wherein the chimeric virus has excellent vaccine efficacy against a QX-like type infectious bronchitis virus.

12.WO/2024/250371CANCER VACCINE BASED ON LYSATE COMPONENTS AND SYNTHETIC CANCER ANTIGENS IN CANCER CELLS AND/OR TUMOR TISSUES AND PREPARATION METHOD
WO - 12.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2023/105792 Solicitante SUZHOU ERSHENG BIOPHARMACEUTICAL CO., LTD Inventor/a LIU, Mi
A vaccine system based on whole-cell components/holoantigen components and tumor-specific antigens or tumor-associated antigens in cancer cells and/or tumor tissues, and a preparation method therefor and a use thereof. Whole-cell components or whole-cell antigen components in cancer cells and/or tumor tissues are first obtained, the substances are then mixed with a known tumor-specific/associated antigen polypeptide or a nucleic acid expressing same, and the mixture is co-supported on nanoparticles or microparticles for preventing or treating cancers. The vaccine system comprises nanoparticles and/or microparticles, whole-cell components/holoantigen components in cancer cells and/or tumor tissues and prepared quantitative tumorspecific/associated antigen polypeptides/nucleic acids, can efficiently activate specific immune response of cancer cells, and can be used for preventing and treating diseases such as cancers.

13.WO/2024/259188SARS-COV 2 VACCINE COMPOSITIONS AND METHODS OF USING SAME WO - 19.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2024/033948 Solicitante CHILDREN'S HOSPITAL MEDICAL CENTER Inventor/a TAN, Ming
Disclosed herein arc vaccine compositions, in particular, polyvalent icosahedral compositions for presentation of a SARS-CoV-2 antigen. The disclosed compositions may contain an S particle comprising a norovirus (NoV) S domain protein and a SARS-CoV-2 antigen, which may be linked via a linker protein domain operatively connected to the norovirus S domain protein and the SARS- CoV-2 antigen. Methods of using the disclosed vaccine composition are also provided.

14.20240417744EXPRESSION OF EIMERIA SEQUENCES IN PLANTS AND PLANT PRODUCED VACCINE FOR SAME
US - 19.12.2024
Clasificación Internacional C12N 15/82 Nº de solicitud 18756402 Solicitante Mazen Animal Health Inc. Inventor/a John Howard

Vaccines and methods of expressing a polypeptide of *Eimeria* are provided in which a protective response to *Eimeria* is produced when administered to an animal. The vaccine provides for expression of *Eimeria* vaccine proteins 3-1e, Gam82, and/or EF-1a polypeptide in a plant or plant part, linked to a promoter preferentially directing expression to embryo tissue of the plant or plant part. Further embodiments provide that the polypeptide may be targeted to the apoplast/cell wall or the endoplasmic reticulum. Increased expression levels in the plant or plant part are obtained. The plant or plant materials in an embodiment may be orally administered.

15.20240415954VACCINE PREPARATION
US - 19.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18718892 Solicitante HCEMM Nonprofit Kft. Inventor/a Stefan GRABUSCHNIG

A vaccine preparation to be administered intramuscularly without or at least minor adverse effects comprises in addition to a mRNA-vaccine at least one vasoconstrictive agent, such as epinephrine, levonorderfrine and norepinephrine.

16.WO/2024/256369VACCINE COMPOSITIONS
WO - 19.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2024/066027 Solicitante INSTITUTO DE MEDICINA MOLECULAR JOÃO LOBO ANTUNES Inventor/a BERNARDES, Gonçalo
This invention relates to a cancer vaccine conjugate that comprises a CRM_{197} carrier protein and an immunogenic peptide covalently linked by a linker to residues C186 and 0201 of the CRM_{197} carrier. Suitable immunogenic peptides include glycopeptides, for example glycopeptides comprising tumor-associated carbohydrate antigens (TACAs), such as GalNAc, Galb(1,3)GalNAc, or Neu5Acα(2-6)GalNAc. Cancer vaccine conjugates and methods for their production and use are provided.

17.WO/2024/257026VIRUS-LIKE PARTICLES FOR THE TREATMENT OF SARS-COV2 WO - 19.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/IB2024/055822 Solicitante SEQIRUS INC. Inventor/a CAI, Yongfei
The present disclosure relates to a virus-like particle (VLP) comprising one or more antigens for use as a vaccine. The present disclosure further relates to uses of the vaccine for the treatment of a SARS-CoV-2 infection or coronavirus disease 2019 (COVID-19).

18.20240415952HUMAN METAPNEUMOVIRUS VIRAL VECTOR-BASED VACCINES
US - 19.12.2024
Clasificación Internacional A61K 39/155 Nº de solicitud 18671660 Solicitante SANOFI PASTEUR INC. Inventor/a Yvonne CHAN
The present disclosure provides a human metapneumovirus (hMPV) vaccine comprising an hMPV F protein antigen, and methods of eliciting an immune response by administering said vaccine.

19.20240409555CYANO CYCLOBUTYL COMPOUNDS FOR CBL-B INHIBITION AND USES THEREOF
US - 12.12.2024
Clasificación Internacional C07D 498/08 Nº de solicitud 18747129 Solicitante Nurix Therapeutics, Inc. Inventor/a Arthur T. SANDS

Compounds, compositions, and methods for use in inhibiting the E3 enzyme Cbl-b in the ubiquitin proteasome pathway are disclosed. The compounds, compositions, and methods can be used to modulate the immune system, to treat diseases amenable to immune system modulation, and for treatment of cells in vivo, in vitro, or ex vivo. Also disclosed are pharmaceutical compositions comprising a Cbl-b inhibitor and a cancer vaccine, as well as methods for treating cancer using a Cbl-b inhibitor and a cancer vaccine; and pharmaceutical compositions comprising a Cbl-b inhibitor and an oncolytic virus, as well as methods for treating cancer using a Cbl-b inhibitor and an oncolytic virus.

20.20240409954GENE CONSTRUCT FOR EXPRESSING MRNA
US - 12.12.2024
Clasificación Internacional C12N 15/85 Nº de solicitud 18700912 Solicitante GENOMICTREE, INC. Inventor/a Sunghwan AN

The present invention relates to a gene construct for expressing an mRNA, and a pharmaceutical composition, a vaccine composition, and a gene therapy composition, each comprising the gene construct. More specifically, the present invention relates to a gene construct including a coronavirus (SARS-COV-2: Severe acute respiratory syndrome coronavirus 2)-derived 5' untranslated region (UTR) and/or 3' untranslated region (UTR), and a pharmaceutical composition, a vaccine composition, and a gene therapy composition, each comprising the gene construct.

21.20240408166PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST HEPATOCELLULAR CARCINOMA (HCC) AND OTHER CANCERS
US - 12.12.2024
Clasificación Internacional A61K 38/04 Nº de solicitud 18814073 Solicitante IMMATICS BIOTECHNOLOGIES GMBH Inventor/a Toni WEINSCHENK

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 tumorassociated 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. In particular, the present invention relates to several novel peptide sequences and their variants derived from HLA class I and class II molecules of human tumor cells that can be used in vaccine compositions for eliciting anti-tumor immune responses or as targets for the development of pharmaceutically/immunologically active compounds and cells.

22.20240408193SARS-COV-2 VACCINES
US - 12.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 17996608 Solicitante NEC ONCOIMMUNITY AS Inventor/a Richard Stratford

The present invention relates to a coronavirus vaccine composition, comprising one or more epitopes suitable for stimulating a broad adaptive immune response across a plurality of human leukocyte antigen (HLA) populations, for either MHC Class I and/or MHC Class II immunogenicity. The selection of such epitopes is made possible by the generation of predictive data by an artificial intelligence (AI)-driven platform, through the analysis of large scale epitope mapping of the SARS-CoV-2 proteome and epitope scoring based upon predicted immunogenicity, followed by robust statistical analysis and Monte Carlo-based simulation. The vaccine compositions of the present invention are suitable for use in the therapeutic or prophylactic treatment of SARS-CoV-2 infections. The invention also describes methods for using said compositions.

23.WO/2024/253449MELITTIN-CONJUGATED LIPID NANOPARTICLES AND METHOD FOR PREPARING SAME
WO - 12.12.2024
Clasificación Internacional A61K 47/69 Nº de solicitud PCT/KR2024/007780 Solicitante INSBIOPHARM CO.,LTD. Inventor/a KIM, Hyun Cheol
The present invention relates to melittin-conjugated lipid nanoparticles and a method for preparing same and, more specifically, to melittin-conjugated lipid nanoparticles and a method for preparing same, wherein melittin,

which is a peptide capable of directly penetrating a cell membrane, is conjugated to a biocompatible lipid to form a melittin-lipid conjugate, and the melittin-lipid conjugate as well as ionized lipids, helper lipids, cholesterol and lipid-PEG are further used to prepare lipid nanoparticles, and thus the lipid nanoparticles exhibit high stability and low toxicity and, at the same time, can effectively deliver genetic material. Details of the project that supported this invention are as follows. [Project identification number]1475013317[Project number]DY0002259456-22213vaccinetoxicity421-2-1[Ministry name]Ministry of Food and Drug Safety[Project management (professional) organization name]National Institute of Food and Drug Safety Evaluation[Research project name]Infectious disease response innovation technology support research[Research project name]Research on development of toxicity assessment technology for mRNA vaccines and the like[Contribution rate]0.5/0.5[Name of organization carrying out project]Sogang University Industry-Academic Cooperation Foundation[Research period]01 February 2022-31 December 2022 Details of another business that supported this invention are as follows: [Project identification number]1711160207[Project number]2022M3E5F1017553[Ministry name]Ministry of Science and ICT[Project management (professional) organization name]National Research Foundation of Korea[Research project name]Next-generation infectious disease vaccine basic core technology development project[Research project name]Development of next-generation RNA construct and carrier for rapid and universal mRNA vaccine development[Contribution rate]0.5/0.5[Name of organization carrying out project]Sogang University Industry-Academic Cooperation Foundation[Research period]01 January 2023-31 December 2023

24.20240415949MUCOSAL VACCINE, METHODS OF USE AND ADMINISTRATION THEREOF
US - 19.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 18702695 Solicitante Jiangsu Recbio Technology Co., Ltd. Inventor/a Kejian Yang

A method of vaccinating a subject against a respiratory viral infection comprises concurrently or separately administering to a subject in need thereof one of more polynucleotide vector(s) encoding a respiratory virus antigen and one or more aerosolized respiratory virus antigen(s) to induce a mucosal immune response in the subject against an infection by respiratory viral infection. In another aspect, the present application provides a mucosal vaccine kit comprising one of more polynucleotide vector(s) encoding a respiratory virus antigen, one or more aerosolized respiratory virus antigen(s).

25.20240417431VACCINE CANDIDATES FOR HUMAN RESPIRATORY SYNCYTIAL VIRUS (RSV) HAVING ATTENUATED PHENOTYPES
US - 19.12.2024
Clasificación Internacional C07K 14/08 Nº de solicitud 18758660 Solicitante THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HE Inventor/a Cyril LE NOUEN

Reported herein are presumptively de-attenuating mutations that are useful, either individually or in combinations that may include other known mutations, in producing recombinant strains of human respiratory syncytial virus (RSV) exhibiting attenuation phenotypes. Also described herein is a novel RSV construct, Min_L-NPM2-1(N88K) L, which exhibits an attenuated phenotype, is stable and is as immunogenic as wild type RSV. The recombinant RSV strains described here are suitable for use as live-attenuated RSV vaccines. Exemplary vaccine candidates are described. Also provided are polynucleotide sequences capable of encoding the described viruses, as well as methods for producing and using the viruses.

26.WO/2024/251874VACCINE FORMULATION COMPRISING A SURFACTANT THAT DOES NOT COMPRISE AN ESTER BOND
WO - 12.12.2024
Clasificación Internacional A61K 9/00 Nº de solicitud PCT/EP2024/065590 Solicitante VAXXINOVA NEDERLAND BV Inventor/a MOMBARG, Erwin
The present invention relates to a vaccine formulation comprising at least one inactivated virus or bacterium, or an immunogenic fragment thereof. The formulation further comprises one or more surfactants, wherein at least one surfactant does not comprise an ester bond (Fig. 1).

27.WO/2024/258141RECOMBINANT VIRUS AGAINST JAPANESE ENCEPHALITIS VIRUS GENOTYPE 5 DOMESTIC ISOLATE MK541529.1, AND USE THEREOF
WO - 19.12.2024
Clasificación Internacional C12N 15/86 Nº de solicitud PCT/KR2024/007941 Solicitante THE INDUSTRY & ACADEMIC COOPERATION IN CHUNGNAM NATIONAL UNIVERSITY (IAC) Inventor/a SHIN, Hyun-Jin
The present invention relates to a recombinant virus against Japanese encephalitis virus type 5 domestic isolate MK541529.1 and a use thereof, and provides a composition for producing the recombinant Japanese encephalitis virus, a method for producing the recombinant Japanese encephalitis virus, the recombinant Japanese encephalitis virus produced by the method, and a vaccine composition against Japanese encephalitis, the vaccine composition comprising the recombinant virus as an active ingredient.

28.WO/2024/253482RECOMBINANT PROTEIN COMPRISING PEDV SPIKE PROTEIN S1 AND FERRITINDERIVED PROTEIN, AND USE THEREOF
WO - 12.12.2024
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/KR2024/007861 Solicitante THE INDUSTRY & ACADEMIC COOPERATION IN CHUNGNAM NATIONAL UNIVERSITY (IAC) Inventor/a SHIN, Hyun-Jin
The present invention relates to: a recombinant protein comprising an S1 protein of a porcine epidemic diarrhea virus (PEDV) spike and a ferritin-derived protein; and a use thereof, and provides a protein structure produced from the recombinant protein, a vaccine composition comprising the protein structure, and a method for preventing or treating PEDV infectious diseases, the method comprising a step for administering the vaccine composition to a non-human subject.

29.WO/2024/251997VACCINE FOR THE TREATMENT OF AMYLOIDOSIS
WO - 12.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2024/065817 Solicitante NEURIMMUNE AG Inventor/a MICHALON, Aubin
Provided is a peptide-based vaccine for treating or preventing amyloid transthyretin amyloidosis (ATTR).

30.20240415948MENINGOCOCCAL B RECOMBINANT VACCINE
US - 19.12.2024
Clasificación Internacional A61K 39/095 Nº de solicitud 18746742 Solicitante SANOFI PASTEUR INC. Inventor/a Nadège ARNAUD-BARBE

The present disclosure relates to an immunogenic composition comprising a combination of meningococcal antigens which comprises at least one factor H binding protein (fHBP) A protein, at least one fHBP B protein, at least one *Neisseria* adhesin A (NadA) protein, and at least one detergent-extracted Outer Membrane Vesicle (dOMV). The meningococcal antigens may be from a *Neisseria meningitidis* serogroup B. The

combination of antigens provided a broad coverage of bacteria strains. Further, the present disclosure relates to the use of the immunogenic composition in methods for eliciting an immune response.

31.4475824IMMUNOGENE MRNA-ABGABEVEHIKEL
EP - 18.12.2024
Clasificación Internacional A61K 9/51 Nº de solicitud 23711330 Solicitante CORNER THERAPEUTICS INC Inventor/a CORNFORTH ANDREW N

The present disclosure relates to lipid-based delivery vehicles for mRNA vaccines, which include a lysophosphatidylcholine (LPC) compound for enhancing vaccine immunogenicity. The present disclosure also relates to methods for use of the mRNA vaccines.

32.WO/2024/254461METHODS AND COMPOSITIONS FOR VACCINE DEVELOPMENT AND DELIVERY
WO - 12.12.2024
Clasificación Internacional A61K 9/51 Nº de solicitud PCT/US2024/033024 Solicitante NUTECH VENTURES Inventor/a VU, Hiep
This document describes methods and compositions that can be used to rapidly develop and deliver new vaccines.

33.WO/2024/253141PREDICTION OF SARSR-COV BREAKTHROUGH INFECTION SYMPTOMS
WO - 12.12.2024
Clasificación Internacional C12Q 1/6806 Nº de solicitud PCT/JP2024/020613 Solicitante NATIONAL CANCER CENTER Inventor/a NAKATSURA Tetsuya
Provided is a method for collecting data for predicting symptoms of a breakthrough infection in a subject who received a SARSr-CoV vaccine, the method comprising: a step for preparing a leukocyte-containing specimen collected from the subject; a step for adding a plurality of peptides to the specimen; and a step for measuring the level of expression of mRNA of any one of T cell function-related markers selected from the group consisting of IFNγ, CXCL9, CXCL10, and IL-1A. The plurality of peptides correspond to a plurality of fragments of the amino acid sequence of a spike protein, and cover 40% or more of the total length of the amino acid sequence of the spike protein. If the level of expression of the mRNA of the T-cell function-related marker is equal to or higher than a predicted reference level, the subject is predicted to be asymptomatic in a case where a breakthrough infection occurs in the subject. If the expression level of the mRNA of the T-cell function-related marker is less than the predicted reference level, the subject is predicted to be symptomatic in case where a breakthrough infection occurs in the subject.

34.20240408194DNA ORIGAMI SUBUNIT VACCINE FOR PREVENTION OF SARS-CoV-2 VARIANT INFECTION
US - 12.12.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18701892 Solicitante ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY Inventor/a Nicholas Stephanopoulos

The present disclosure relates to DNA nanocarriers and methods of use for stimulating an immune response in a host. In some embodiments, the DNA nanocarriers comprise SARS-CoV-2 surface glycoprotein.

35.20240415923RNA-Dependent RNA Polymerase Inhibitory Compounds, Uses in Managing Viral Infections, and Pharmaceutical Compositions
US - 19.12.2024
Clasificación Internacional A61K 38/12 Nº de solicitud 18742659 Solicitante Emory University Inventor/a Bo

Liang

Disclosed herein are methods of treating or preventing a viral infection comprising administering an effective amount an RNA-dependent RNA Polymerase (RdRP) inhibitory compound, derivative, or salt thereof as disclosed herein to a subject in need thereof. In certain embodiments, the viral infection is a positive or negative-sense RNA virus. In certain embodiments, the compound is administered in combination with an anti-viral agent or vaccine.

36.20240408221Multivalent Pneumococcal Polysaccharide-Protein Conjugate Composition US - 12.12.2024

Clasificación Internacional A61K 47/64 Nº de solicitud 18441311 Solicitante Wyeth LLC Inventor/a A. Krishna Prasad

An immunogenic composition having 13 distinct polysaccharide-protein conjugates and optionally, an aluminum-based adjuvant, is described. Each conjugate contains a capsular polysaccharide prepared from a different serotype of *Streptococcus pneumoniae* (1, 3, 4, 5, 6A, 66, 7F, 9V, 14, 18C, 19A, 19F and 23F) conjugated to a carrier protein. The immunogenic composition, formulated as a vaccine, increases coverage against pneumococcal disease in infants and young children globally, and provides coverage for serotypes 6A and 19A that is not dependent on the limitations of serogroup cross-protection. Methods for making an immunogenic conjugate comprising *Streptococcus pneumoniae* serotype 19A polysaccharide are also provided in which the serotype 19A polysaccharide is co-lyophilized with a carrier protein and conjugation is carried out in dimethyl sulfoxide (DMSO) via a reductive amination mechanism.

37.20240408173SILK FIBROIN-CONTAINING COMPOSITION AND METHODS OF USE THEREOF US - 12.12.2024

Clasificación Internacional A61K 38/17 Nº de solicitud 18664616 Solicitante Georgetown University Inventor/a Morarji PEESAY

Provided are compositions comprising silk fibroin, perfluorocarbon (PFC), and surfactant, and methods of use thereof. The compositions can further comprise a drug, an antibody, or a vaccine. Compositions of the invention are useful in the treatment of certain lung diseases and conditions, including in particular those characterized by surfactant deficiency. Compositions of the invention are particularly useful in the treatment of respiratory distress syndrome (RDS). Also provided are methods for making the compositions, and kits comprising components of the compositions.

38.WO/2024/254147COMPOSITIONS AND METHODS FOR GENERATING IMMUNITY TO BACTERIAL INFECTION

WO - 12.12.2024

Clasificación Internacional C07K 14/245 Nº de solicitud PCT/US2024/032547 Solicitante SYNTIRON LLC Inventor/a RANDLES, Leah

The present disclosure relates, in part, to a polypeptide of formula (I), or a salt or solvate thereof, and a vaccine composition thereof further comprising at least one pharmaceutically acceptable excipient. The present disclosure further relates to isolated mRNA and/or isolated polynucleotides encoding the polypeptide of formula (I), vectors and/or LNPs comprising the same, and pharmaceutical compositions thereof. The present disclosure further relates to methods of treating, preventing, and/or ameliorating a bacterial infection, and/or generating immunity to infection by one or more pathogenic bacteria, in a subject in need thereof, the

method comprising administering to the subject at least one composition of the present disclosure. In certain embodiments, the bacterial infection is a urinary tract infection, sepsis (e.g, neonatal sepsis), or pneumonia.

39.WO/2024/254447COMPOSITIONS AND METHODS FOR A DIFFERENTIAL DIAGNOSTIC FOR SALMONELLA TYPHIMURIUM INFECTION IN POULTRY
WO - 12.12.2024
Clasificación Internacional C12Q 1/10 Nº de solicitud PCT/US2024/033003 Solicitante UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC. Inventor/a SHARIAT, Nusrat
A PCR diagnostic assay, methods and a kit for differentiating between wild-type virulent *Salmonella* Typhimurium and vaccine-associated *Salmonella* Typhimurium in a subject vaccinated against *Salmonella* Typhimurium.

40.4477662NUKLEINSÄUREMOLEKÜLE UND VERWENDUNGEN DAVON
EP - 18.12.2024
Clasificación Internacional C07K 14/005 Nº de solicitud 24201472 Solicitante CUREVAC SE Inventor/a RAUCH SUSANNE
The present invention is directed to an artificial nucleic acid and to polypeptides suitable for use in treatment or prophylaxis of an infection with Norovirus or a disorder related to such an infection. In particular, the present invention concerns a Norovirus vaccine. The present invention is directed to an artificial nucleic acid, polypeptides, compositions and vaccines comprising the artificial nucleic acid or the polypeptides. The invention further concerns a method of treating or preventing a disorder or a disease, first and second medical uses of the artificial nucleic acid, polypeptides, compositions and vaccines. Further, the invention is directed to a kit, particularly to a kit of parts, comprising the artificial nucleic acid, polypeptides, compositions and vaccines.

41.20240408188NANOEMULSION ADJUVANT COMPOSITIONS FOR HUMAN PAPILLOMAVIRUS VACCINES
US - 12.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 18735616 Solicitante Merck Sharp & Dohme LLC Inventor/a Patrick L. Ahl

The present disclosure provides, among other things, a vaccine composition that includes a squalene nanoemulsion (SNE) adjuvant and HPV virus-like particles (VLPs) of at least one type of human papillomavirus (HPV) selected from the group consisting of HPV types: 6, 11, 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 55, 56, 58, 59, 66, 68, 73, and 82.

42.WO/2024/251831NODA-LIKE RNA-VACCINE PHARMACON AND PRODUCTION AND USES THEREOF
WO - 12.12.2024
Clasificación Internacional A61P 31/14 Nº de solicitud PCT/EP2024/065493 Solicitante VETERNA SRL Inventor/a SEIDLER, Randolph Wilfried Richard
The invention discloses a ribonucleic acid (RNA)-pharmacon comprising at least a functional part of a transamplifying RNA (taRNA) replication element of an Alphanoda virus.

43.WO/2024/259195USE OF CD200AR-L FOR ENHANCING ADOPTIVE T-CELL THERAPY WO - 19.12.2024
Clasificación Internacional A61K 35/17 Nº de solicitud PCT/US2024/033958 Solicitante ELIAS ANIMAL HEALTH Inventor/a REYES, Noe

The present disclosure is generally directed to methods of injecting a subject having cancer with a vaccine comprising cancer cells isolated from the subject and CD200AR-L peptide to produce activated T cells from the subject, particularly dogs, and optionally reintroducing these activated T cells to the subject to treat the cancer.

44.20240415951LENTIVIRAL VECTOR FOR EXPRESSION OF HUMAN PAPILLOMAVIRUS (HPV) ANTIGENS AND ITS IMPLEMENTATION IN THE TREATMENT OF HPV INDUCED CANCERS
US - 19.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 18706610 Solicitante THERAVECTYS Inventor/a Pierre CHARNEAU

The present invention relates to a lentiviral vector, in particular a non-integrative lentiviral vector, comprising at least four distinct nucleic acid sequences encoding HPV antigens, to a lentiviral vector particle comprising said vector, to an isolated cell comprising the same, and to a vaccine composition comprising the said lentiviral vector, lentiviral vector particle or cell. The present invention further relates to their implementation in the treatment or prevention of an HPV induced cancer.

45.4475878THERAPEUTISCHE IMPFSTOFFE GEGEN ALPHA-SYNUCLEIN
EP - 18.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud 23703593 Solicitante AC IMMUNE SA Inventor/a PFEIFER ANDREA

The present invention relates to a liposomal vaccine composition comprising: a peptide antigen displayed on the surface of the liposome; a peptide comprising a T-cell epitope; and an adjuvant; wherein the peptide antigen comprises, consists essentially of or consists of the structure: X_1-X_2-X_3-E-X_4-X_5-P-V-D-P-D-N-E-X_6, wherein: E is glutamic acid, P is proline; V is Valine, D is aspartic acid, N is asparagine; X_1 is present or not and, if present, is G, wherein G is glycine; X_2, is present or not and, if present, is G, wherein G is defined as above; X_3 is L, K, or S, wherein L is leucine, K is lysine, and S is serine; X_4 is D, K or S, wherein D, K and S are as defined above; X_5 is M, wherein M is methionine or methionine sulfoxide; X_6 is A, K or S, wherein A is alanine and K, and S are as defined above; with the proviso that X_3-E-X_4-X_5-P-V-D-P-D-N-E-X_6 is not L-E-DM-P-V-D-P-D-N-E-A, and which comprises between 1 and 5 amino acid differences compared with the amino acid sequence G-I-L-E-D-M-P-V-D-P-D-N-E-A, and wherein the peptide antigen does not comprise the dipeptide Y-E immediately following X_6, wherein Y is tyrosine and E is as defined above.

46.WO/2024/254226NANOEMULSION ADJUVANT COMPOSITIONS FOR HUMAN PAPILLOMAVIRUS VACCINES
WO - 12.12.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2024/032682 Solicitante MERCK SHARP & DOHME LLC Inventor/a AHL, Patrick L.
The present disclosure provides, among other things, a vaccine composition that includes a squalene nanoemulsion (SNE) adjuvant and HPV virus-like particles (VLPs) of at least one type of human papillomavirus (HPV) selected from the group consisting of HPV types: 6, 11, 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 55, 56, 58, 59, 66, 68, 73, and 82.

47.20240418731IDENTIFICATION OF IMMUNOGENIC MUTANT PEPTIDES USING GENOMIC, TRANSCRIPTOMIC AND PROTEOMIC INFORMATION
US - 19.12.2024

Clasificación Internacional G01N 33/68 Nº de solicitud 18762502 Solicitante Genentech, Inc. Inventor/a Lelia DELAMARRE

The present disclosure provides methods of identifying a disease-specific immunogenic peptide through a series of selection steps. Immunogenic epitopes identified by methods of the present disclosure are applicable for use in peptide-based immunotherapy, preferably cancer therapy. Furthermore, the methods of the present disclosure may be performed in a high-throughput manner and serve as a means of personalized vaccine development and therapy. Also provided are compositions of immunogenic peptides as well as methods of treatment comprising said compositions.

48.20240415947MALARIA VACCINE FORMULATIONS
US - 19.12.2024
Clasificación Internacional A61K 39/015 Nº de solicitud 18704632 Solicitante NOVAVAX AB Inventor/a Jenny M. REIMER

Disclosed herein are immunogenic compositions comprising an antigen of a *Plasmodium* parasite. Methods of administering the aforementioned compositions are also disclosed.

49.WO/2024/257959COMPOSITION FOR PREVENTION OR TREATMENT OF PARKINSON'S DISEASE COMPRISING ALPHA-SYNUCLEIN EPITOPE AS ACTIVE INGREDIENT
WO - 19.12.2024
Clasificación Internacional A61K 38/17 Nº de solicitud PCT/KR2023/016956 Solicitante INDUSTRY-ACADEMIC COOPERATION FOUNDATION GYEONGSANG NATIONAL UNIVERSITY Inventor/a KIM, Myeong Ok
The present invention relates to a composition for the prevention or treatment of Parkinson's disease, comprising an alpha-synuclein epitope as an active ingredient. More specifically, the alpha-synuclein epitope, which is the active ingredient of the present invention, comprises an alpha-synuclein peptide VAEKTKEQVT, and has an acetylated N-terminal and a C-terminal that is conjugated with a carrier protein (keyhole limpet hemocyanin (KLH) or ovalbumin (OVA)) by using cysteine as a linker. The alpha-synuclein epitope was confirmed to have the effect of preventing and treating Parkinson's disease in an animal model with induced Parkinson's disease and an *in vitro* model, and therefore, the active ingredient of the present invention can be effectively used as a medicine and a vaccine for the prevention or treatment of Parkinson's disease.

50.WO/2024/258829SARS-COV-2 VACCINE COMPOSITIONS AND RELATED METHODS WO - 19.12.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2024/033365 Solicitante FLAGSHIP PIONEERING INNOVATIONS VII, LLC Inventor/a AFZELIUS, Ellen Lovisa Larsdotter
Provided herein are SARS-CoV-2 spike proteins and polypeptides (*e.g.,* SARS-CoV-2 spike proteins and polypeptide immunogens (and immunogenic fragments and immunogenic variants thereof)) comprising at least one set of amino acid substitutions (*e.g.,* described herein), and nucleic acid molecules encoding the same. Further provided herein are compositions (*e.g.,* pharmaceutical compositions) and vaccines comprising the same for use in *e.g.,* the prevention, treatment, and/or amelioration of a SARS-CoV-2 infection.

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