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

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

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Explorando la preparación ante futuras pandemias a través del desarrollo de plataformas de vacunas preventivas

Desde la década de 1980, la aparición de más de 40 nuevas enfermedades infecciosas, muchas de ellas de origen zoonótico, ha representado un serio desafío para la salud mundial. En respuesta, numerosas organizaciones internacionales, como los Centros para el Control y la Prevención de Enfermedades (CDC, por sus siglas en inglés) de Estados Unidos, la Organización Mundial de la Salud (OMS) y el Centro Europeo para la Prevención y el Control de Enfermedades (ECDC, por sus siglas en inglés), han implementado estrategias para enfrentar estas amenazas sanitarias.

Un estudio publicado en la revista *Vaccine*, evaluó el estado actual del desarrollo de plataformas de vacunas destinadas a pandemias globales y examinó estrategias para responder eficazmente a futuras crisis pandémicas. Para ello, se realizó una revisión general de los roles desempeñados por diversas organizaciones internacionales y sus programas de apoyo. En particular, se analizaron las funciones y colaboraciones clave de la Organización Mundial de la Salud (OMS), la experiencia en investigación y desarrollo de vacunas de la Coalición para Innovaciones en Preparación para Epidemias (CEPI), la gestión de la cadena de suministro y distribución de vacunas por parte de la Alianza Global para Vacunas e Inmunización (GAVI), así como las capacidades de transferencia tecnológica del Instituto Internacional de Vacunas (IVI). Estas contribuciones respaldan el desarrollo, la producción y el abastecimiento de plataformas tecnológicas de vacunas dirigidas a enfermedades pandémicas prioritarias identificadas por la OMS y CEPI. Además, el estudio examinó sus programas y políticas de apoyo a la vacunación con el objetivo de identificar formas efectivas de responder de manera rápida y eficiente a futuras pandemias causadas por enfermedades infecciosas emergentes.

Desarrollo de plataformas vacunales

Las tecnologías de vacunas han avanzado desde las plataformas de vacunas tradicionales a nuevas plataformas de vacunas como las vacunas de vectores virales y de ARNm, cada una de las cuales tiene sus ventajas y desventajas en términos de inmunogenicidad, persistencia, seguridad, eficiencia de administración, estabilidad, compatibilidad y respuesta de producción rápida y masiva a las enfermedades infecciosas emergentes (EIDs, por sus siglas en inglés).

Vacunas de ARNm

La pandemia de COVID-19 evidenció la importancia de desarrollar plataformas innovadoras para la creación de vacunas. A pesar de las preocupaciones iniciales, la rápida incorporación de tecnologías avanzadas, las capacidades de producción en masa y la cooperación internacional, convirtieron a las vacunas de ARN mensajero (ARNm) en una tecnología revolucionaria.

En el caso específico de las vacunas de ARNm, han demostrado una eficacia significativa en cuanto a mejor eficiencia de la producción y administración de vacunas al utilizar distintos mecanismos de síntesis de proteínas humanas para generar múltiples proteínas a partir de una sola molécula de ARNm, en comparación con las plataformas tradicionales. Sin embargo, contienen lípidos, lo que resulta en una vida útil relativamente corta, de aproximadamente 2 a 3 años, y requieren almacenamiento a temperaturas ultra bajas, típicamente hasta -80 °C, lo que las hace menos favorables en términos de costos de almacenamiento y logística.

Clasificación y características de las plataformas de vacunas

Generation	Platform		Drug Effectiveness				Productivity			
			Immunogenicity	Persistency	In-Vivo Safety	Delivery Efficiency	Storage and Stability	Viral Compatibility	Production Safety	Rapid and Mass Production
1st Generation	Whole Virus Vaccine	Live Attenuated Virus Vaccine	High	High	Low	High	Refrigerated storage	Low	Low	Prolonged culture steps are required to obtain attenuated viral strains
		Inactivated Virus Vaccine	Adjuvants can be used	Low	High	Requires two or more doses to be effective	• Refrigerated storage • Possibility of structural damage to the antigen or epitope due to partial expression	Medium	High	Deploy existing cGMP-grade vaccine production infrastructure
2nd Generation	Protein-based Vaccine	Protein Subunit Vaccine	Adjuvants can be used	Low	High	• Low • A separate delivery system is required	• Refrigerated storage • Possibility of structural damage to the antigen or epitope due to partial expression	Medium	High	Securing high yield and needs for large-scale cultivation facilities limit production capacity
		Virus-Like Particle Vaccine	High	High	High	An effective immune response can be induced even at low doses	Refrigerated storage	Medium	High	Production speed is not fast enough
3rd Generation	Nucleic-Acid Vaccine	mRNA Vaccine	Adjuvants can be used	Low	High	• Low • A separate delivery system is required	Requires deep freezing due to instability of RNA and LNPs	Medium	High	Enables rapid and Low-cost production in small-scale GMP facilities
		DNA Vaccine	Low	Depending on conditions	High	Low	Room temperature storage	Medium	High	Enables rapid and low-cost production in small-scale GMP facilities
	Viral Vector Vaccine		High	Low	High	Pre-existing immunity to the vector may reduce vaccine efficacy.	Refrigerated storage	High	Medium	Securing high yield and needs for large-scale batch and down-stream process complexity limit production capacity
Next Generation	Digital Vaccine	• Networking Vaccine, • Artificial Intelligence (AI) Combined Vaccine	Development practices and validations are lacking, thereby requiring improvement and strategy refinement				-	High	High	Designing and manufacturing of vaccines by automated programs

Limitaciones y avances de la investigación de la tecnología del ARNm.

Subject	Limitations	Progress of Development
Stability	There are difficulties in transport and management due to the instability of RNA and LNPs, which requires ultra-low temperature freezing [24,25].	• Suzhou Abogen Biosciences in China is engaged in the development of a technology that enhances the quality and purity of lipid nanoparticles (LNPs) and enables storage at refrigerated temperatures (2–8 °C) [26]. • CureVac in Germany is developing a technology to fold RNA into a compact 3D structure to improve low thermal stability [26].
Dosage and Efficacy	• A mRNA vaccine requires multiple doses to achieve the same effect as a conventional vaccine. • A separate delivery system is required due to the inefficiency of in vivo delivery [27].	• The mRNA vaccine from Curevac in Germany, currently in Phase 2 clinical trials, is expected to have great potential for further development as it is effective with a relatively small dose [26]. • Vaxess Technologies in the US has developed a skin patch with dissolvable microneedles that can slowly release a vaccine [26].
Polyvalent Vaccine Technology	Each type of virus requires a redesign, and each type requires a different vaccine [26].	• Universal flu shot [1] vaccine, which is effective against various new influenza viruses without redesigning, is being developed [26]. • A vaccine made by mixing four mRNAs encoding different influenza proteins was found to protect against infection by a specific strain of influenza virus in animal experiments, such as those involving mice, at the University of Pennsylvania in the US [26].

[1] Universal flu shot: vaccination that is effective against all influenza strains regardless of virus mutation, antigenic drift, or antigenic variation.

Próxima generación: vacuna digital

Una **vacuna digital** es un método para compartir globalmente información genética que comprende antígenos diana de la vacuna a través de internet, lo que permite el desarrollo de vacunas autosuficientes en las instalaciones de fabricación de vacunas. Las vacunas digitales tienen la ventaja de no depender de componentes obtenidos de patógenos vivos.

La vacuna de ARNm contra la COVID-19 es un buen ejemplo de vacuna digital. En 2020, el Centro para el Control y la Prevención de Enfermedades de China compartió la secuencia genómica del SARS-CoV-2 en línea, y cientos de laboratorios de todo el mundo utilizaron genes sintéticos del SARS-CoV-2 que codifican la proteína S para desarrollar vacunas de ARNm sin el virus del SARS-CoV-2. La vacuna de ARNm desarrollada por Moderna comenzó las pruebas clínicas aproximadamente 60 días después de que se hiciera pública la información genética del SARS-CoV-2, y la Administración de Alimentos y Medicamentos de EE. UU. otorgó la autorización de uso de emergencia a las vacunas de ARNm desarrolladas por Moderna y Pfizer-BioNTech 10 meses después. Con este enfoque, las vacunas digitales no solo proporcionaron inmunizaciones vitales con rapidez a los pacientes durante la pandemia, sino que también marcaron el comienzo de una revolución en la fabricación de vacunas.

Además, las vacunas digitales utilizan técnicas de inteligencia artificial (IA) para analizar las vacunas candidatas y recopilar datos, como la secuenciación, mediante el análisis computacional de genes patógenos. Se deben realizar ensayos clínicos para recopilar datos sobre los posibles efectos secundarios de las vacunas en función de las diferentes características de los pacientes (edad, sexo y afecciones médicas subyacentes). Asimismo, el diseño teórico y la producción de vacunas pueden automatizarse por completo y se puede proporcionar asesoramiento remoto. Asimismo, una red global de hospitales para la distribución de vacunas permite una evaluación basada en datos de los factores de producción y distribución, lo que puede tener un efecto positivo en la fabricación y el suministro. También puede reducir la carga de los sistemas sanitarios al equilibrar la oferta y la demanda. En general, la IA puede acelerar el proceso de desarrollo, reducir costos y mejorar significativamente la eficiencia.

Enfermedades infecciosas priorizadas que se espera que causen futuras pandemias

Este estudio examinó las vacunas actualmente en desarrollo para enfermedades prioritarias, excluyendo aquellas para las que ya se han aprobado vacunas y centrándose en las que aún están en desarrollo. En particular, se están desarrollando activamente vacunas vectoriales, vacunas de ARN y plataformas de vacunas de ADN. Se están desarrollando además, plataformas que integran tecnologías, como las de las vacunas de la "Enfermedad X", para abordar una amplia gama de virus. Las organizaciones internacionales brindan apoyo para vacunas preventivas contra enfermedades prioritarias en términos de tecnología y financiación. Laboratorios, empresas, instituciones y gobiernos están realizando investigación y desarrollo a diversas escalas. Se realizan activamente ensayos clínicos en regiones vulnerables al riesgo de infección y en áreas con abundante financiación y personal de investigación.

Específicamente para la Enfermedad X se están desarrollando vacunas que aun no cuentan con autorización, fundamentalmente en las plataformas de ARNm, vectores virales y basadas en proteínas. Entre los desarrolladores de estos candidatos vacunales se encuentran BioNTech, Curevac, Moderna TX, Inc., University of Oxford y SK Bioscience, todas en colaboración con CEPI.

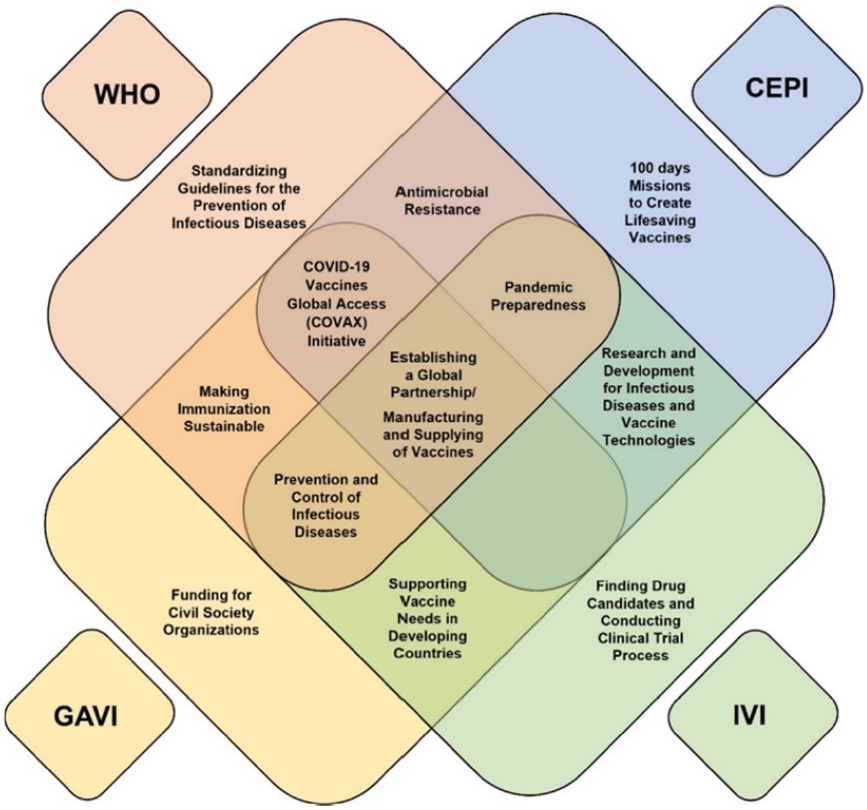
Enfermedades priorizadas anunciadas por la OMS y CEPI

No.	Priority Disease	Viral Family	WHO *	CEPI **	Type of Authorized Vaccines ***
1	COVID-19	Coronaviridae	O	O	Viral Vector, RNA, Inactivated, Subunit, etc.
2	Crimean-Congo Haemorrhagic Fever	Bunyaviridae	O	-	None
3	Ebola Virus Disease	Filoviridae	O	O	Viral Vector
4	Marburg Virus Disease	Filoviridae	O	-	None
5	Lassa Fever	Arenaviridae	O	O	None
6	Middle East Respiratory Syndrome Coronavirus (MERS-CoV)	Coronaviridae	O	O	None
7	Severe Acute Respiratory Syndrome (SARS)	Coronaviridae	O	-	None
8	Nipah And Henipaviral Diseases	Paramyxoviridae	O	O	None
9	Rift Valley Fever(RVF)	Bunyaviridae	O	O	None
10	Zika	Flaviviridae	O	-	None
11	Chikungunya	Togaviridae	-	O	Live-attenuated
12	Disease X [1]	-	O	O	None

* The latest priority diseases announced in February 2018 by the WHO are marked with "O". ** The latest priority diseases announced in January 2019 by CEPI are marked with "O". *** Diseases for which there are no authorized vaccines have been marked as "None". [1] The potential for a serious international pandemic to be caused by a pathogen currently unknown to cause human disease is represented by "Disease X".

Funciones clave y programas de las organizaciones internacionales de apoyo a las vacunas para futuras pandemias.

La colaboración global es necesaria para crear una plataforma justa que ofrezca beneficios equitativos a todos los países mediante vacunas y medicamentos seguros, eficaces y de calidad garantizada. En este estudio, se seleccionaron la OMS, CEPI, GAVI e IVI como las principales organizaciones internacionales desempeñan un papel clave en la preparación y respuesta ante pandemias y en el desarrollo y distribución de vacunas preventivas. Estas organizaciones han trabajado conjuntamente para mejorar el acceso a las vacunas, fortalecer la respuesta global frente a enfermedades infecciosas y afrontar los desafíos de la salud pública mundial. La respuesta a la pandemia de COVID-19 pone de manifiesto cómo la colaboración sinérgica de las directrices estandarizadas de la OMS, la experiencia en investigación y desarrollo de CEPI, el control de la cadena de suministro y distribución por parte de GAVI, y la capacidad de transferencia tecnológica del IVI, puede dar lugar a un proceso exitoso de desarrollo y distribución de vacunas.



En esencia, para estar adecuadamente preparados frente a futuras pandemias, resulta fundamental desarrollar una plataforma de vacunas equilibrada que contemple una inversión proporcional en tecnologías innovadoras, como las vacunas basadas en ARN mensajero y vectores virales, así como en las plataformas tradicionales. El objetivo es desarrollar tecnologías de plataformas de vacunas que puedan aplicarse de manera efectiva ante enfermedades infecciosas emergentes, además de ampliar la capacidad de producción y distribución para enfrentar futuras crisis sanitarias. Asimismo, las organizaciones internacionales que apoyan el desarrollo y suministro de vacunas deben asumir un papel central en orientar la creación de redes globales y coordinar programas internacionales que superen las deficiencias identificadas en respuestas a pandemias anteriores. Como resultado, al transformar las futuras amenazas pandémicas de crisis impredecibles en desafíos superables, se espera fortalecer los sistemas de salud a nivel mundial y disminuir a largo plazo el impacto social y económico de las enfermedades infecciosas emergentes.

Fuente: Jihee J, Eunyoung K. *Exploring Future Pandemic Preparedness Through the Development of Preventive Vaccine Platforms and the Key Roles of International Organizations in a Global Health Crisis*.
Disponible en https://n9.cl/tmwfu

Noticias en la Web

Amplían Esquema Nacional de Vacunación con nuevas vacunas contra el VPH y la neumonía en Perú

19 jul. El Ministerio de Salud (Minsa) dio un paso decisivo en la prevención de enfermedades infecciosas al aprobar la inclusión de dos nuevas vacunas en el Esquema Nacional de Vacunación del Perú: la vacuna antineumocócica conjugada 20-valente (PCV20) y la vacuna nonavalente contra el virus del papiloma humano (VPH). Ambas han sido incorporadas a través de la Resolución Ministerial N.° 474-2025/MINSA, que modifica la Norma Técnica de Salud vigente desde 2022.

Con esta medida, el país fortalece su capacidad para prevenir enfermedades de alto impacto en salud pública, como la neumonía, la meningitis, la enfermedad neumocócica invasiva y distintos tipos de cáncer relacionados al VPH, como el cáncer de cuello uterino, el segundo más frecuente entre las mujeres peruanas.

Mayor protección contra la neumonía con la vacuna PCV20

Desde el año 2015, el Perú ha venido utilizando la vacuna antineumocócica conjugada 13-valente (PCV13), principalmente en niños menores de 5 años y adultos mayores, para prevenir casos de neumonía y otras enfermedades neumocócicas. La introducción de la vacuna PCV20 representa un avance significativo al ampliar la cobertura a 20 serotipos de neumococo, es decir, siete más que su predecesora.

Esta nueva vacuna ofrece una protección más amplia y con alta eficacia. Según el Minsa, su uso contribuirá directamente a reducir los casos graves de neumonía, meningitis y enfermedad neumocócica invasiva (ENI), particularmente en los grupos más vulnerables como lactantes, niños, adultos mayores y personas con enfermedades crónicas.

Uno de los aspectos más destacados de la PCV20 es que no requiere modificar el esquema de vacunación actual, lo que facilita su implementación. Además, puede administrarse junto con otras vacunas del calendario sin generar efectos adversos significativos, optimizando los recursos y el tiempo del personal de salud.

Nueva vacuna contra el VPH protegerá contra más tipos de cáncer

En paralelo, el Minsa anunció la introducción de la vacuna nonavalente contra el virus del papiloma humano (VPH), que sustituirá a la actual tetravalente aplicada desde 2011. Esta nueva versión amplía la protección de cuatro a nueve genotipos virales de VPH, lo cual incrementa significativamente la eficacia del biológico.

Con esta actualización, se estima que será posible prevenir hasta el 90 % de los casos de cáncer de cuello uterino en un futuro próximo. Pero los beneficios no se limitan a ese tipo de cáncer, pues la vacuna también ofrece protección contra otros tumores como el anal, vulvar, vaginal, peniano y orofaríngeo.

La incorporación de la vacuna VPH nonavalente reafirma el compromiso del Perú en la lucha contra los tipos de cáncer prevenibles mediante inmunización. Gracias a esta medida, el país se posiciona como pionero en la región de las Américas al adoptar una estrategia preventiva robusta y basada en evidencia científica.

Vacunación universal, segura y gratuita

Ambas vacunas, tanto la PCV20 como la VPH nonavalente, serán administradas de forma gratuita en los centros de salud públicos a nivel nacional, en cumplimiento del principio de equidad del acceso a la salud.

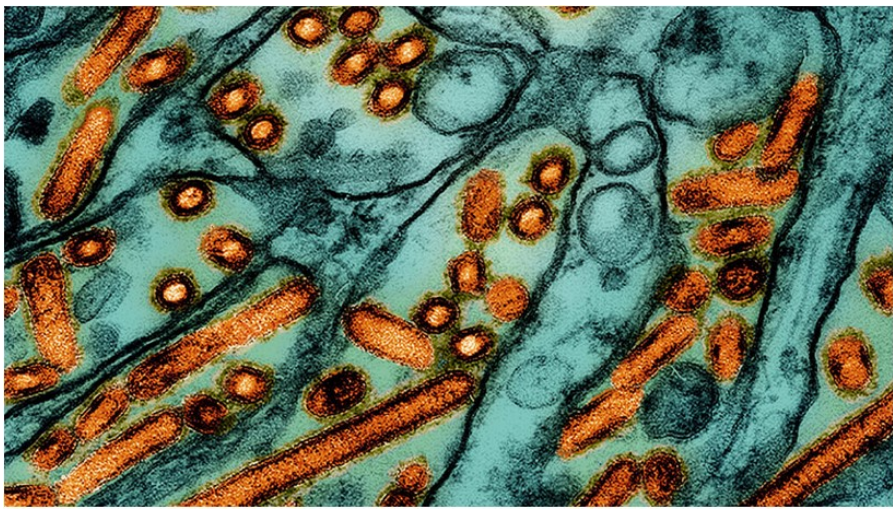
El Ministerio de Salud ha confirmado que estas vacunas forman parte del esquema regular y se encuentran disponibles en las brigadas de vacunación y campañas escolares. Para el caso de la vacuna contra el VPH, continuará aplicándose principalmente a niñas y adolescentes entre los 9 y 13 años, aunque también se está promoviendo su aplicación en varones, siguiendo las recomendaciones de la Organización Mundial de la Salud.

En cuanto a la vacuna PCV20, los grupos prioritarios seguirán siendo los niños menores de 5 años, adultos mayores y personas con enfermedades que comprometan el sistema inmunológico. Las autoridades sanitarias recomiendan que los padres de familia verifiquen el carné de vacunación de sus hijos y acudan al centro de salud más cercano para completar las dosis necesarias.

Fuente: infobae. Disponible en https://n9.cl/8uoric

New Study Shows Path to Scalable H5N1 Vaccine Solutions

Jul 19. The escalating threat posed by highly pathogenic H5N1 avian influenza viruses—now entrenched in U.S. dairy cattle, poultry, and wildlife—has catalyzed urgent efforts to develop effective countermeasures. In a newly published study in the Journal of Virology, researchers from Duke University report promising preclinical results from novel DNA and mRNA-lipid nanoparticle (mRNA-LNP) vaccines that target a human-infecting strain of H5N1 influenza (A/Texas/37/2024). These next-generation vaccines, developed with support from the National Institute of Allergy and Infectious Diseases (NIAID), offer a powerful and scalable strategy for pandemic preparedness.



Colorized transmission electron micrograph showing avian influenza A (H5N1) virus particles replicating in epithelial cells. These vaccines could be key to halting the virus's spread in livestock and preventing future zoonotic pandemics. Photo credit: CDC / NIAID

Rising Threat from Zoonotic Influenza

Since early 2024, clade 2.3.4.4b H5N1 viruses have been spreading across at least 17 U.S. states, affecting over 950 dairy herds and multiple poultry flocks. Milk production losses, viral shedding in milk, and confirmed zoonotic infections—including a fatal case in Louisiana—have elevated concerns. While most human infections have been linked to direct animal contact, several have occurred without any known exposure, suggesting possible environmental or foodborne transmission routes. These developments mark a significant evolutionary shift in H5N1's behavior and amplify the risk of a future influenza pandemic.

Dual-Antigen Vaccine Design: HA and NA in One Platform

A key innovation in the study was the dual-antigen design of the vaccines. Rather than focusing solely on hemagglutinin (HA)—the standard target for influenza vaccines—the researchers incorporated neuraminidase (NA), a viral surface protein increasingly recognized for its role in mitigating disease severity and reducing transmission.

The team engineered both DNA and mRNA-based vaccine constructs that encode HA and NA from the A/Texas/37/2024 H5N1 strain within a single open reading frame. This compact genetic configuration enables the efficient co-expression of both antigens from a single molecule, simplifying production and improving immunogenicity.

Robust Protection in Preclinical Models

In mouse models, both DNA and mRNA-LNP versions of the vaccine elicited strong antibody responses that effectively neutralized the virus. Upon challenge with a lethal dose of H5N1, vaccinated mice were fully protected from weight loss, clinical disease, and death. Lung viral loads were undetectable in most vaccinated animals, and key markers of inflammation—CXCL-10, IFN-β, and TNF-α—were significantly reduced.

The DNA vaccine also demonstrated protective potential in animals and could be an important tool for livestock vaccination, especially given its thermal stability, cost-effectiveness, and production scalability.

Implications for Public Health and National Security

The findings underscore the real and growing threat that zoonotic H5N1 influenza poses to public health, agriculture, and national security. With human-to-human transmission not yet documented but increasingly plausible, vaccines that can be rapidly deployed to both animals and humans could decisively blunt the emergence of a pandemic.

Containing H5N1 at its source—in cattle and poultry—reduces the risk of broader outbreaks and preserves food system stability. A coordinated vaccination strategy that spans both human and animal health aligns with the principles of One Health and is in the national interest, especially amid heightened biosecurity concerns.

A Versatile and Scalable Platform

The study's use of generic LNP formulations for the mRNA vaccine ensures that the platform is not tied to proprietary manufacturing pipelines, enhancing global adaptability. The lipid components are GMP-compatible and suitable for mass production, improving readiness for real-time outbreak response.

This work builds on the proven success of mRNA-LNP technology during the COVID-19 pandemic and positions it as a central pillar in future influenza preparedness. Unlike traditional flu vaccines, which can take months to produce, mRNA vaccines can be adapted and manufactured quickly in response to emerging strains.

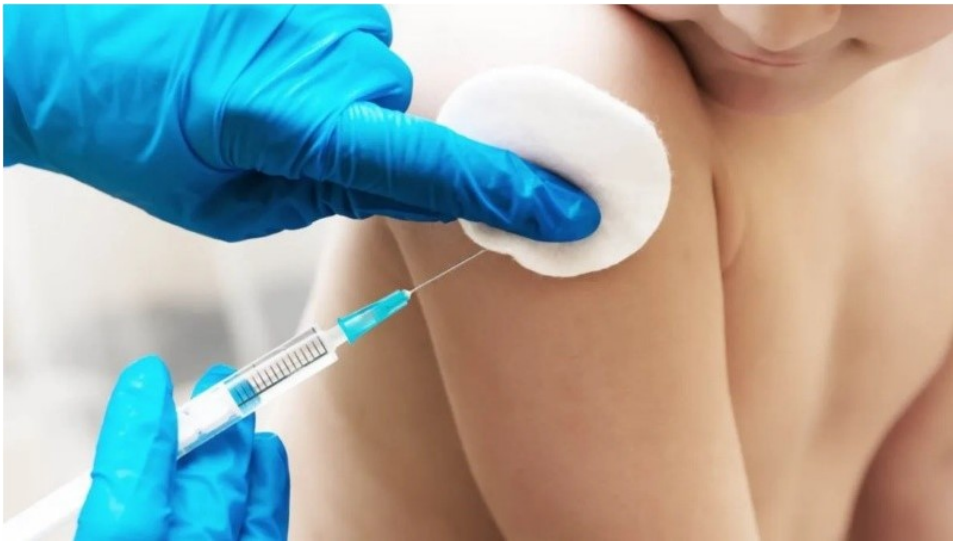
Looking Ahead: From Bench to Field

While these findings are promising, further work is needed to validate the results in ferret models and eventually in humans. The durability of the immune response and cross-protection against diverse H5N1 variants also remain critical areas for future investigation.

Still, the dual-antigen approach provides a blueprint for building more comprehensive and responsive influenza vaccines—tools that are urgently needed in an era of accelerating zoonotic threats.

Fuente: Global Biodefense. Disponible en https://n9.cl/rmv3j

La vacunación infantil muestra avances en las Américas



21 jul. Si bien la vacunación infantil en las Américas mostró señales alentadoras en torno a su recuperación en 2024, continúan persistiendo brechas importantes. Una nueva publicación de UNICEF y la Organización Mundial de la Salud (OMS) dio cuenta de que más de 1,4 millones de niños de la región no ha recibido ni una sola dosis de vacuna contra difteria, tétanos y tos ferina (DTP), marcando un aumento de los "niños cero dosis".

Los hallazgos forman parte de las Estimaciones OMS/UNICEF de la Cobertura Nacional de Inmunización (WUENIC en inglés) que muestran que, si bien la cobertura mundial de vacunación infantil se estabilizó, hay casi 20 millones de niños en todo el mundo que no recibió si quiera una sola dosis de DTP incluyendo 14,3 millones que no recibieron ni una sola vacuna. En América, la cifra de niños cero dosis aumentó en 186.000 respecto del año anterior, alcanzando así un total de 1.465.000.

“Las Américas han mostrado un compromiso firme con la protección de su población infantil, pero las brechas en la cobertura nos recuerdan que debemos hacer más”, señaló el doctor Jarbas Barbosa, Director de la Organización Panamericana de la Salud (OPS), oficina regional de la OMS para las Américas. “La vacunación sigue siendo una de las herramientas más efectivas para prevenir enfermedades y salvar vidas. No podemos permitir que ningún niño quede sin protección”, añadió.

La cobertura de vacunación mejoró en varios antígenos clave:

- ⇒ Triple viral (sarampión, paperas, rubéola – MMR): la cobertura con la primera dosis subió del 86% al 88%, y la segunda dosis del 75% al 77%.
- ⇒ Vacuna neumocócica conjugada (PCV3): aumentó del 76% al 79%.
- ⇒ Hepatitis B al nacer: pasó del 64% al 68%, un avance importante hacia la eliminación de esta enfermedad.

En cuanto a la vacuna contra el virus del papiloma humano (VPH), las Américas lideran a nivel mundial, con un 76% de cobertura en niñas menores de 15 años que han recibido al menos una dosis. Sin embargo, todavía falta avanzar para alcanzar el objetivo mínimo del 90%.

Desafíos persistentes en la cobertura de DTP y tasas de deserción

A pesar de estos avances, la cobertura de la primera dosis de DTP (DTP1) en las Américas disminuyó ligeramente del 90% en 2023 al 89% en 2024, revirtiendo una tendencia positiva y contribuyendo al aumento de niños cero dosis. La cobertura con la tercera dosis (DTP3) se mantuvo en 86%, pero 9 de los 35 países y territorios reportaron niveles inferiores al 80%, lo que aumenta el riesgo de brotes. Además, tres países registraron tasas de deserción superiores al 10% entre la primera y la tercera dosis.

Estas brechas reflejan barreras persistentes en el acceso equitativo y la continuidad de la vacunación, especialmente en comunidades marginadas o de difícil acceso.

Fortalecer los sistemas de inmunización en la región

Actualmente se buscan fortalecer los programas nacionales de inmunización mediante las evaluaciones de madurez del Programa Ampliado de Inmunización (PAI), que ya se realizaron en 12 países en los últimos dos años y medio, y actualmente están en marcha en Honduras, República Dominicana y Bolivia.

Además, la Organización Panamericana de la Salud (OPS) también brinda apoyo a los países para recuperar a los niños que no fueron vacunados durante la pandemia de COVID-19, con aumentos esperados de cobertura de entre 1 y 4% en esos grupos.

En tal sentido, la OPS recomienda a los países priorizar acciones como:

⇒ Identificar y alcanzar a los niños cero dosis con estrategias adaptadas a nivel local.

⇒ Fortalecer los sistemas de seguimiento para reducir las tasas de deserción.

⇒ Garantizar la disponibilidad y el acceso a las vacunas.

⇒ Capacitar al personal de salud y trabajar con las comunidades para combatir la desinformación.

⇒ Integrar la vacunación en una atención primaria de salud sólida para evitar oportunidades perdidas.

“Los Estados Miembros deben seguir comprometidos con el fortalecimiento de sus estrategias de vacunación mediante esfuerzos conjuntos,” enfatizó el doctor Barbosa. “Así, la región podrá recuperar su liderazgo histórico en inmunización y proteger la salud de las generaciones presentes y futuras", subrayó.

Contexto mundial y llamado a la acción

Los hallazgos en las Américas reflejan las tendencias globales descritas en el informe de la OMS y UNICEF. Si bien el 85% de los niños en el mundo completaron la serie completa de DTP3 en 2024, el progreso se ha estancado y los logros siguen siendo frágiles ante los conflictos, la desinformación y la presión sobre los sistemas de salud.

Los datos mundiales también refuerzan la necesidad de actuar con urgencia, especialmente en las regiones donde están aumentando los niños cero dosis. La OMS y UNICEF han hecho un llamado para:

⇒ Aumentar la inversión nacional en vacunación.

⇒ Cerrar la brecha de financiamiento para el próximo ciclo estratégico de Gavi (2026–2030).

⇒ Llegar a los niños que viven en contextos frágiles o afectados por conflictos.

Fuente: Rosario3. Disponible en https://n9.cl/llqq2

Promising First Steps Toward a Universal mRNA Cancer Vaccine

Jul 21. Researchers at the University of Florida (UF) in Gainesville, Florida, U.S., have taken a step closer to developing a universal cancer vaccine that could potentially serve as an alternative to surgery, radiation, or chemotherapy. Their mRNA cancer vaccine was able to boost the immune system’s response to tumors in mouse models.

Unlike current approaches to cancer vaccine development, which involve finding a target expressed by many cancer patients or developing personalized cancer vaccines, the researchers used an experimental mRNA vaccine in combination with

common immunotherapy drugs called immune checkpoint inhibitors. In a mouse study, they successfully boosted the immune system to support the tumor-fighting effects of the immunotherapy.

"[…] What we found is by using a vaccine designed not to target cancer specifically but rather to stimulate a strong immunologic response, we could elicit a very strong anticancer reaction. And so this has significant potential to be broadly used across cancer patients—even possibly leading us to an off-the-shelf cancer vaccine," explained co-author of the paper Duane Mitchell, MD, PhD, Director of the UF Clinical Translational Science Institute, and Co-Director of the Preston A. Wells, Jr. Center for Brain Tumor Therapy at UF Health.

In the study, published in the journal Nature Biomedical Engineering with the title "Sensitization of Tumors to Immunotherapy by Boosting Early Type-I Interferon Responses Enables Epitope Spreading," the researchers developed a "generalized" mRNA vaccine based on a similar formulation as the COVID-19 vaccines. However, this mRNA vaccine does not target specific proteins on a virus or mutated cancer cells, but rather triggers a strong, generalized immune response.

"This paper describes a very unexpected and exciting observation: that even a vaccine not specific to any particular tumor or virus—so long as it is an mRNA vaccine—could lead to tumor-specific effects," said senior author Elias Sayour, MD, PhD, UF Health pediatric oncologist, and principal investigator at the RNA Engineering Laboratory within UF's Preston A. Wells Jr. Center for Brain Tumor Therapy.

The researchers' experimental mRNA cancer vaccine boosted the immune system by stimulating the expression of a protein called Programmed Death-Ligand 1, or PD-L1, inside tumors. PD-L1 is often used by tumor cells to evade detection and subsequent death by the immune system's T cells.

Together with standard-of-care immune checkpoint inhibitors, called PD-1 inhibitors, the mRNA cancer vaccine was able to attack normally treatment-resistant tumors in mouse models of melanoma.

Then, to see if the mRNA cancer vaccine, with a slightly different formulation, could also work as a standalone treatment, the research team tested it in mouse models of skin, brain, and bone cancers. They discovered that it was capable of activating the immune system by itself, achieving beneficial effects and even eliminating tumors completely in some cancer models.

The researchers observed that their mRNA cancer vaccine seems capable of activating T cells that didn't work before, to multiply and attack the cancer, thereby strengthening the immune system's response.

These findings, said Mitchell, make the study's implications striking: "It could potentially be a universal way of waking up a patient's own immune response to cancer. And that would be profound if generalizable to human studies."

As a next step, the research team is optimizing the current formulations of their mRNA cancer vaccine to be able to move into in-human clinical trials as fast as possible, potentially paving the way for the first universal cancer vaccine.

Fuente: Inside Precisión Medicine. Disponible en https://n9.cl/sqqto

India on course to developing first indigenous dengue vaccine

Jul 23. The Phase 3 clinical trial for India's first dengue vaccine has enrolled over 7,248 participants since its launch in August 2024, marking a major milestone in the development of an indigenous dengue vaccine. The trial, led by the Indian Council of Medical Research (ICMR) in collaboration with Panacea Biotec, is testing DengiAll, a tetravalent vaccine designed to protect against all four known dengue virus serotypes.

"The vaccine strain (TV003/TV005), originally developed by the US National Institutes of Health (NIH), has shown promising results in global studies."

The vaccine strain (TV003/TV005), originally developed by the US National Institutes of Health (NIH), has shown promising results in global studies. The NIH later sub-licensed the technology to several firms globally including Indian companies like Panacea Biotec and Indian Immunologicals.

Among the Indian licensees, Panacea Biotec is the most advanced, having completed Phase 1 and 2 trials in 2018–19. The company has since developed a full vaccine formulation and holds a process patent.

The ongoing multi-centre, double-blind, randomized, placebo-controlled Phase 3 trial began on August 14, 2024, and aims to recruit 10,355 healthy volunteers aged 18–60 years across 19 clinical sites in India. The trial has received all regulatory approvals from the Drug Controller General of India (DCGI). Enrolment is expected to conclude by October 2025, with each participant to be monitored for two years. Data will be submitted to the Central Drugs Standard Control Organisation (CDSCO) for review.

“This is the first-ever Phase 3 dengue vaccine trial in India,” said Dr Shrikant Tripathi, Research Head at Dr DY Patil Vidyapeeth, Pune, one of the trial sites. “It is primarily funded by ICMR, with some support from Panacea Biotec—no external funding is involved. This trial reflects India’s push toward vaccine self-reliance.”

Dr Rajesh Karyakarte, Head of Microbiology department, at B J Medical College, Pune, one of the Sentinel Surveillance Institute for National Centre for Vector Borne Disease Control, told HT, “India is contributing nearly a third of global dengue cases. Dengue cases and minor to major outbreak are now being reported round the year. The climate change, monsoon pattern and humidity are further fuelling expansion and transmission of the vector borne disease. In India, out of the four Dengue serotypes, the DENV-2 serotype strongly associated with severe manifestations such as dengue haemorrhagic fever and dengue shock syndrome is prominent in circulation. A safe and effective dengue vaccine is no longer optional but essential to protect the community to reduce hospital burden and prevent repeat infections that can be fatal,” he said.

According to Panacea Biotec, there is no fixed timeline for the efficacy endpoint—it depends on dengue transmission and infection rates. DengiAll activates immune responses against all four dengue virus strains. “Once efficacy is established and approved by authorities, the vaccine can be included in national immunisation programmes. Currently, there is no dengue vaccine in India’s routine immunisation schedule for children or adults,” said a source from Panacea Biotec.

Dr Sheela Godbole, Director of ICMR’s National Institute of Translational Virology, is the national principal investigator for the trial. An email query sent to ICMR, ICMR-NITVAR, and national principal investigator Dr Sheela Godbole remained unanswered.

Meanwhile, the Serum Institute of India (SII) too is preparing to roll out Phase 3 trials for its own dengue vaccine Dengusiil, for which Phase 1 and 2 trials in adults and children have been successful. The Phase 3 study will cover about 10,000 children aged two to under 18 years across multiple sites in India, considering regional dengue epidemiology. The trial is expected to begin by the end of 2025, with follow-up for at least three years and an overall duration of four to five years for the vaccine to be rolled out in the market.

Dengusiil, like DengiAll, is a live attenuated tetravalent vaccine that generates neutralising antibodies against all four dengue serotypes. Earlier trials demonstrated safety and high immunogenicity in both adults and children, with no serious adverse events reported.

SII and ICMR have signed an MoU for the upcoming study. Once protocol approvals are in place, study site details will be finalised and submitted to CDSCO.

Fuente: Hindustan Times. Disponible en https://n9.cl/tm8hn

Ndhlovu Lab Study Highlights Crucial Genetic Diversity for Effective Vaccine Development in Africa

Jul 23. A recent study from the Ndhlovu Lab at the Ragon Institute has uncovered significant gaps in global vaccine strategies, revealing that immune system gene diversity in African populations has been widely overlooked in current vaccine design approaches.

The study, published in Scientific Reports, investigated high-resolution data on Human Leukocyte Antigen (HLA) genes in populations from Eastern and Southern Africa, including Kenya, Rwanda, Uganda, Zambia, and South Africa. HLA genes are critical for immune responses and influence how effectively individuals respond to vaccines.

Findings revealed extensive genetic variation among these populations, with major differences compared to genetic profiles commonly used for vaccine development, which are predominantly based on U.S. and European populations. The study shows that African populations have unique and highly diverse HLA profiles, significantly different even from African American populations. This diversity affects immune response, vaccine efficacy, and susceptibility to disease, underscoring the ineffectiveness of applying vaccine data from other regions directly to African populations.

This groundbreaking research highlights the importance of including diverse populations in genetic studies to improve health outcomes worldwide, and could potentially influence the way future studies are conducted to ensure more accurate results are found.

Fuente: Ragon Institute. Disponible en https://n9.cl/hmeguy

What the WHO Pandemic Agreement and IHR Reforms Mean for the Future of Pandemic Preparedness

Jul 23. In the wake of the COVID-19 pandemic and amidst rising biosecurity threats, the international community has taken significant steps to strengthen pandemic preparedness and response. Two major developments now define the next era of global health governance: the 2024 amendments to the International Health Regulations (IHR) and the 2025 WHO Pandemic Agreement. Both instruments were crafted through multi-year negotiations under the World Health Organization (WHO) and aim to correct systemic failures revealed by the pandemic while embedding equity, transparency, and legal authority into global health responses.

A recent editorial published in Medical Science Monitor provides an overview of how these reforms aim to reshape the global health architecture. These instruments are not intended to serve as reactive measures, but as foundational tools to proactively coordinate cross-border responses, ensure equitable access to health technologies, and foster resilience in health systems worldwide.

Key Reforms to the International Health Regulations (2024)

The International Health Regulations—originally adopted in 1951 and most recently revised in 2005—underwent significant amendments in June 2024 after nearly two decades of implementation. The 2024 revisions reflect lessons from the COVID-19 pandemic, emphasizing:

- ⇒ Equity in Emergency Response: Revised Article 13 mandates that the WHO facilitate access to health products—such as vaccines and therapeutics—during declared Public Health Emergencies of International Concern (PHEICs).
- ⇒ Pandemic Emergency Declaration Authority: Changes to Articles 1 and 12 clarify that the WHO Director General can now declare both PHEICs and pandemic emergencies for communicable diseases.
- ⇒ Sustainable Financing and Governance: Article 44 establishes a coordinating financial mechanism to support developing countries, while Article 54 forms a new advisory subcommittee to enhance multilevel implementation.
- ⇒ Shift from Technical to Political Framework: While still a technical tool, the IHR now includes mechanisms that make it more explicitly political and legally binding, aligning national actions with international expectations for equity and solidarity.

These changes are set to take effect in September 2025, and they mark a shift toward a more enforceable and ethically grounded model of global health cooperation.

The 2025 WHO Pandemic Agreement: A Treaty for Equity and Resilience

Adopted by 124 countries during the 78th World Health Assembly in May 2025, the WHO Pandemic Agreement is the second major legally binding treaty negotiated under Article 19 of the WHO Constitution (following the 2003 Framework Convention on Tobacco Control). The agreement was born out of three years of negotiations aimed at addressing structural inequities and governance failures in the global COVID-19 response.

Key components include:

- ⇒ Equitable Access to Health Tools: The agreement mandates timely and fair distribution of diagnostics, vaccines, and therapeutics, particularly for low- and middle-income countries.
- ⇒ Global Supply Chain and Logistics Network (GSCL): A newly envisioned system to coordinate rapid, affordable access to health products during emergencies.
- ⇒ Support for Research and Development (R&D): Article 9 emphasizes the importance of sustained investment in R&D infrastructure, clinical trials, and data-sharing networks.
- ⇒ Pathogen Access and Benefit Sharing (PABS): Though still under development, the PABS system aims to ensure fair sharing of pathogen samples and genetic data alongside benefits like vaccine access and IP-sharing arrangements.

Critically, the Pandemic Agreement lays a foundation for operationalizing equity not just in principle, but through concrete legal and financial mechanisms.

Implications for National and Global Health Security

For the general public, these legal frameworks are more than bureaucratic exercises. They directly influence how quickly a country can access vaccines during an outbreak, how fast a novel pathogen is detected and reported, and how well local health systems can respond without being overwhelmed.

From a national interest perspective, these frameworks help stabilize geopolitical relationships, protect economies from pandemic shocks, and ensure that national responses are informed by global data and best practices. For the U.S. and other high-income nations, investment in these multilateral systems reduces long-term risk, protects supply chains, and enhances soft power through global health leadership.

The growing risks of airborne zoonotic transmission—such as the recent detection of transmissible H5N1 avian influenza from a Michigan dairy farm worker—underscore the urgent relevance of these frameworks. With measles resurging in unvaccinated populations and global health funding under pressure, a globally coordinated response mechanism is no longer optional—it is essential.

Looking Ahead: Implementation Challenges and Opportunities

While the adoption of these instruments is historic, their success will depend on implementation. Critical questions remain:

- ⇒ How will equity commitments be operationalized in real-time emergencies?
- ⇒ Can Member States agree on key details of the PABS system, such as intellectual property rights, indigenous data access, and fair benefit-sharing?
- ⇒ Will there be sufficient political and financial will to support global R&D infrastructure, especially as donor fatigue and domestic pressures grow?

Continued negotiation is planned through 2026 to finalize the PABS annex and further refine implementation tools. The next year will be pivotal in determining whether these agreements can fulfill their promise.

The 2024 amendments to the IHR and the 2025 WHO Pandemic Agreement together represent a major evolution in how the world prepares for and responds to pandemics. Their success will depend on robust governance, sustainable financing, and unwavering commitment to equity. For the global health community—including government agencies, NGOs, academic institutions, and private-sector partners—these instruments provide both a roadmap and a mandate to build a safer, more resilient world.

Fuente: Global Biodefense. Disponible en https://n9.cl/8f70e

New protein vaccine approach could enable faster responses to Disease X

Jul 23. New research is set to investigate a pioneering approach using protein-tagging technology in nanoparticles that could speed up making vaccines against epidemic and pandemic threats, including a future 'Disease X'. The nanoparticle design could also support more potent and targeted vaccine delivery and help boost immune responses.

The expert team, based at the pharmaceutical start-up POP BIO, are being awarded up to US $1.5 million from CEPI to advance research into POP BIO's SNAP™ (Spontaneous Nanoliposome Antigen Particleization) protein vaccine platform. The technology has been designed to rapidly develop potent nanoparticle vaccine candidates, while simultaneously purifying antigens. Inert protein fragments of a disease-causing pathogen, known as antigens, are added to a vaccine to teach the body's immune system how to recognise and defend against it.

“Antigens added to vaccine formulations have to be purified to ensure safety, efficacy and consistency of the vaccine. However, conventional purification methods can be costly and involve multiple steps, typically lasting several days, slowing down the vaccine development process” said Dr. Kent Kester, Executive Director of Vaccine R&D at the Coalition for Epidemic Preparedness Innovations (CEPI).

Through an innovative approach, the SNAP proprietary technology makes use of a small protein tag, termed a polyhistidine or his-tag, that is attached to the vaccine antigens—for a purification technique commonly used in basic protein research—and is also used to embed them into small, spherical liposomes combined with metallic cobalt to aid the immune response. Compared to traditional purification methods, the enhanced technique could rapidly remove potential contaminants from vaccine antigens in as little as 30 minutes.

“As every day counts during an incipient outbreak, faster development of purified vaccine constructs could help more quickly contain a fast-spreading new or re-emerging viral threat before it spreads to pandemic proportions, in line with the 100 Days Mission” says Dr. Kester.

SNAP’s versatile plug-and-play design could also be beneficial in an outbreak as the antigen sourced from the disease-causing pathogen could be easily and quickly "plugged” into the vaccine platform for faster development and deployment of vaccines. With fewer, less complex stages involved in its purification process, the SNAP technology could also be more efficient than traditional protein vaccine purification methods, producing higher antigen yields that help extend available vaccine supplies and allow more people to be vaccinated in an outbreak.

“The dual use of the his-tag to facilitate protein purification and to then easily, rapidly and stably convert those proteins into potent nanoparticle vaccine candidates has been instrumental for the momentum POP BIO has achieved,” says POP BIO co-founder Jonathan Lovell. “Importantly, when the his-tag is used to anchor proteins on the surface SNAP nanoparticles, there is no significant immune response against the tag itself, as observed in human clinical testing.”

The SNAP technology has already been tested through a large-scale, late-stage Phase III trial of SNAP’s COVID-19 vaccine, where it demonstrated positive safety and efficacy results. Positive results were also published earlier this year in the journal Cell Biomaterials for an avian H5N1 influenza vaccine developed with POP BIO’s SNAP platform in preclinical models.

The CEPI-supported project will first explore the technology’s potential to protect against severe fever with thrombocytopenia syndrome (SFTS), a tick-borne viral disease affecting East Asia, in preclinical trials. Led by POP BIO, the project will be performed by an international team of researchers at the University of Buffalo and SUNY Upstate Medical University in the US and The National Institute of Infectious Diseases, within the Japan Institute for Health Security. CEPI is exploring options to select antigens for testing from CEPI’s existing partners, including our partners using AI to inform antigen design.

If the project is successful, the SNAP platform has the potential to be rapidly adapted to develop vaccine candidates against other pathogens, including a Disease X.

CEPI and POP BIO are committed to enabling equitable access to the outputs of their partnership, in line with CEPI’s Equitable Access Policy. Project results, including related data, will be published open access for the benefit of the global scientific community.

About POP Biotechnologies

POP Biotechnologies, Inc. is a privately held biotechnology company developing novel therapeutics and vaccines based on its proprietary porphyrin-phospholipid (PoP) liposome technology. The PoP platform, exclusively licensed from the State University of New York Research Foundation (SUNY-RF), was invented by co-founder Dr. Jonathan Lovell at SUNY Buffalo. POP Biotechnologies operates from the SUNY Buffalo incubator at Baird Research Park.

About POP BIO's SNAP™ Technology

POP BIO's SNAP™ (Spontaneous Nanoliposome Antigen Particleization) enables therapid development of potent particle-based vaccines by leveraging a cobalt-modified PoP liposome system (CoPoP). This platform allows for stable, spontaneous liposome display of protein and peptide antigens, substantially enhancing immunogenicity. POP BIO's SNAP™ demonstrated favorable safety and immunogenicity profiles in Phase 3 trials of the EuCorVac-19 COVID-19 vaccine.

About CEPI

CEPI was launched in 2017 as an innovative partnership between public, private, philanthropic and civil organisations. Its mission is to accelerate the development of vaccines and other biologic countermeasures against epidemic and pandemic disease threats and enable equitable access to them. CEPI has supported the development of more than 50 vaccine candidates or platform technologies against multiple known high-risk pathogens and is also advancing the development of rapid response platforms for vaccines against a future Disease X. Central to CEPI's pandemic-beating five-year plan for 2022-2026 is the '100 Days Mission' to compress the time taken to develop safe, effective, globally accessible vaccines against new threats to just 100 days.

Fuente: CEPI. Disponible en https://n9.cl/6mvvg

Inauguran filial del Instituto Finlay de Vacunas en Santiago

25 jul. Santiago de Cuba se viste de ciencia y esperanza al inaugurar hoy oficialmente la filial del Instituto Finlay de Vacunas (IFV), en saludo al aniversario 510 de la ciudad y al 72 del asalto al cuartel Moncada.

Este acontecimiento representa un hito científico que refuerza la estrecha relación entre esa entidad y el sistema de salud santiaguero, fruto de más de una década de investigaciones conjuntas.

La ceremonia contó con la presencia de las autoridades políticas y gubernamentales del territorio indómito, así como representantes de las universidades de Oriente y de Ciencias Médicas, e invitados especiales como el Dr. Alberto Francisco Durán, director Nacional de Epidemiología.

Aunque se habían planteado abrir sedes en otras provincias, fue Santiago quien tomó la delantera, gracias al contexto histórico y al impulso de sus autoridades, comentó Yuri Valdés, director general del IFV.

La filial se enfocará en investigaciones clínicas, sin producción industrial por el momento, y realizará evaluaciones que permitirán cerrar el ciclo completo desde los laboratorios hasta la aplicación de los resultados, facilitando una toma de decisiones más eficiente, refirió.

El IFV reafirma con esta apertura su compromiso de vincular la ciencia con la salud pública, evitando desconexiones entre los resultados investigativos y su aplicación real en la población, y contará con equipamiento microbiológico y químico que permitirá desarrollar experimentos directamente en la provincia, argumentó.

De acuerdo con el titular del IFV, l creación de vacunas requiere entre ocho y diez años, por lo que obtener evidencia local es clave para diseñar soluciones efectivas, por tanto esta nueva sede no parte de cero: se construye sobre estudios previos, como los realizados sobre el neumococo, que ya se evalúa en niños lactantes de Santiago de Cuba con una vacuna contra 11 serotipos.

El Dr. Luis Eugenio Valdés, quien dirigirá la nueva filial, expresó que la entidad permitirá acercar aún más la investigación científica a la población, desde el diseño hasta el análisis de los estudios, fortaleciendo vínculos con el sistema de salud primario y las universidades.

Significó que esta, la unica sede del IFV fuera de la capital, también funcionará como centro de formación para médicos, doctores en ciencias, químicos, farmacéuticos y biólogos, y ampliará sus alianzas con diferentes facultades de la educación superior para crear modelos matemáticos y reforzar la vigilancia epidemiológica.

La inauguración contó con la presencia de más de veinte científicos del Instituto Finlay, entre ellos los creadores de la vacuna Soberana y la antimeningocócica, quienes compartieron sus experiencias con jóvenes investigadores.

En la nueva sede, ubicada en la avenida Manduley del reparto Vista Alegre, de esta ciudad, trabajarán inicialmente cuatro investigadores apoyados por los equipos médicos locales, en una estructura eficiente que permitirá enfrentar retos epidemiológicos emergentes.

Esta filial científica y formativa representa una apuesta por el bienestar del pueblo, especialmente de los niños, y Santiago se convierte una vez más en epicentro de la innovación en salud, reflejo de la voluntad colectiva.

Fuente: Agencia Cubana de Noticias ACN. Disponible en https://n9.cl/etdwm

Polio: Reviewing Its History and the Development of Vaccines

Jul 27. Polio is an ancient disease with limited evidence of its existence throughout antiquity. It was not until the late 19th century that the disease became well-documented.

An increase in polio cases coincided with the emergence of the Industrial Age and the transition of people moving from mostly rural, farming environments to cities. This led to more people living closer together and the potential for greater transmission. And paradoxically, the increase of sanitation strategies that came about during this period led to more polio cases, explains Andrea Prinzi, PhD, MPH, SM(ASCP).

“There was this level of protection that was occurring in areas where there weren't the best hygiene or sanitary conditions,” says Prinzi of the agrarian society. “There were areas where there was this level of protection, particularly among parents of young children. They were passing some level of protection to their

children by having been exposed to the virus, either through breast milk or carriage of the infant or fetus. There was protection that was happening, and then when everything got really clean, some of that protection was actually lost. Cases started to spike. It's this really strange example of where we saw sanitary improvements contributing to new cases of infection."

Prinzi is the field medical director of US medical affairs in clinical and translational science at bioMérieux, and she examined this subject in an article she wrote for the American Society for Microbiology in the past year titled "Polio's Last Stand: The Global Fight for Eradication." The article details polio's history as well as the more recent initiatives to rid the world of the disease.

The Development of the Polio Vaccines

Jonas Salk, MD, is well-known as the creator of one of the polio vaccines. What may not be as well-known is how he was very different in the way he worked and his approach to vaccine development.

In terms of how he worked, Prinzi says he worked with a small team without the backing of the pharmaceutical industry. However, she says he did have some government funding, which ruffled the feathers of a contemporary, Albert Sabin, MD, who was the creator of the oral polio vaccine.

Prinzi says Salk took a divergent path from the existing line of scientific work being done at that time because he looked to develop an inactivated polio vaccine instead of trying to develop a vaccine with a live virus, the attenuated immunization, like Sabin was working on.

"He [Salk] had a lot of reservations around using something that was a live attenuated virus, even though that was what a lot of the research was being focused on at the time," Prinzi says. "According to the academic and research community, he was going outside the box. He was doing things his own way, being nontraditional, which they didn't really love. And he even said at one point that he just marches to the beat of his own drummer."

Vaccine Testing, Losing Public Trust, and Vaccine Hesitancy

Both Salk and Sabin's testing methods for their polio vaccination were questionable. Salk and Sabin tested the vaccines on themselves, their families, and marginalized populations such as children with disabilities and incarcerated individuals.

"A lot of ethics review material came from the polio saga," she says.

Despite these issues, both vaccines were eventually used by the public and had great success. Salk's vaccine was developed first and used widely in the US. In fact, it has been reported that 2 years before the vaccine was widely available, the average number of polio cases in the US was more than 45,000. By 1962, several years after vaccination began, that number had dropped to 910.

Prinzi points out there were issues of public mistrust about the polio vaccine back then. Although Salk's vaccine was a great success as a public health initiative, one major issue did arise that led to the transition to Sabin's vaccine.

"There was one manufacturer in particular that did not follow the very specific instructions for how to produce this killed virus vaccine, and some batches actually went out with live virus in the vaccine, and this led to disastrous consequences and huge fallout," Prinzi says. "And even though this is really related more to a manufacturing error than the vaccine—as it had been truly designed and was intended to be developed. This

led to a ton of mistrust in the killed vaccine. And so with the Salk vaccine, folks didn't want to use it anymore, and they wanted a solution that was not that vaccine—even though that vaccine had been demonstrated to be safe and effective in tons of people."

Because of this, the US transitioned to Sabin's oral vaccine, which was being used globally, especially in places where there was limited infrastructure. Prinzi points our Sabin's vaccine was inexpensive and easy to use. It could be simply dropped onto a sugar cube and given to people or in a recipient's mouth.

However, over time, the US switched back to the inactivated polio vaccine because of some cases of vaccine-derived polio cases in Sabin's immunization.

Although there were issues associated with both vaccines, ultimately, their development and deployment have led to the near global eradication of polio. There are only 2 countries in the world today where polio is endemic: Pakistan and Afghanistan. This stands as a monumental achievement and a shining example of the development of these vaccines as well as the public health immunization efforts that worked greatly toward eradication.

Fuente: CONTAGION LIVE. Disponible en https://n9.cl/8y9fh

Avril Biopharma acquires USP-Ghana assets, launches African vaccine manufacturing technology push

Jul 27. U.S. biotechnology company Avril Biopharma said on Monday it has acquired the assets of United States Pharmacopeia (USP) Ghana and established AfriVax GH Ltd to expand its contract development and manufacturing (CDMO) business in Africa. The company offers development services using hen eggs to produce valuable clinical, veterinary and food-security products. The acquisition comes as African leaders push for greater vaccine self-sufficiency in the wake of the COVID-19 pandemic and reductions in international support for capacity building in the African healthcare space.

Vaccine development milestone

Avril has collaborated with Ghana's biotech community since the COVID-19 pandemic, creating a partnership between Imperial College of London, Ghana's Council for Scientific and Industrial Research (CSIR) and other partners that won a 6.5-million-pound ($8.1 million) UK Research and Innovation grant in 2023. The UKVN Chanjo Hub consortium will catalyse vaccine & biologics manufacturing in Africa in a multi-pronged demonstration project.

The Chanjo Hub-Ghana group is demonstrating the end-to-end development of egg-cultured vaccines in Ghana and already has early Proof of Concept for candidate malaria, rabies and COVID19 vaccine antigens.

"Globally, hundreds of millions of doses of influenza vaccine are made in eggs every year," said Dr. Eluemuno Blyden, Avril's CEO and inventor of its egg technologies. "Making a malaria or Mpox vaccine using eggs would instantly benefit from decades of vaccine manufacturing technology and experience from all over the world."

Self-Reliant capacity building

USP-Ghana was a full-fledged center set up to build the capacity of regulatory authorities and local pharmaceutical enterprises in Africa. Since its start in 2013, the Center has provided training to over 1,300 professionals from 45 African countries. Later, it was tapped to provide technical assistance on behalf of the

Promoting the Quality of Medicines Plus (PQM+) USAID program which focused on capacity building for regulatory agencies across the Global South. The PQM+ program was closed due to changes in USAID priorities earlier this year.

"The closure of USP-Ghana's testing facilities could have been a significant loss for the African pharmaceutical ecosystem," said Dr. Kwasi Boateng, former Director of USP-Ghana operations. "Instead, the facility will now expand to become a key resource supporting the emerging biopharmaceutical sector in Africa."

AfriVax has already signed agreements with Ghana's DEK Vaccines Limited, and Uganda's Vaccine Access Initiative to begin development of egg-made vaccines and diagnostic API reagents.

"By using existing agricultural value chains, some of the large upfront capital investments needed for biopharmaceutical manufacturing can go directly into the local economy on day one," said Dr. George Ansah, an Avril board member.

About Avril Biopharma

Avril Biopharma is a recombinant biotechnology company that can develop egg-based vaccine and biologic products using ordinary hen eggs as natural bioreactors.

About AfriVax Ghana Ltd

AfriVax Ghana Ltd is a Ghana company established to provide Avril's CDMO services to the biopharmaceutical industry in Africa. The company operates from facilities in Accra's Dzorwulo business district, providing development, testing, training, and regulatory support services for biopharma manufacturers.

Fuente: EIN PRESSWIRE. Disponible en https://n9.cl/ht3nyh

Panamá comienza inmunización con nuevas dosis antiCovid

28 jul. Panamá recibe hoy 44 mil 400 dosis de la vacuna contra la COVID 19 en su variante JN, la cual permite enfrentar la reaparición de la dolencia con nuevas cepas.

De acuerdo con un comunicado del Ministerio de Salud (Minsa), ese tipo de fármaco, distribuido entre centros asistenciales públicos, está formulado para brindar mayor protección sobre todo a infantes, embarazadas y personas de la tercera edad.

En declaraciones a Prensa Latina, la coordinadora del Programa Ampliado de Inmunización (PAI), Itzel de Hewitt, precisó que para el suministro de la nueva vacuna de forma gratuita están habilitados los centros de salud del Minsa y las policlínicas de la Caja de Seguro Social (CSS).

"Hacemos un llamado especial a las personas mayores de 60 años a colocarse esta vacuna, que también puede aplicarse junto con la del Virus Sincitial Respiratorio, que lanzamos recientemente", remarcó la experta.

Estas vacunas fueron adquiridas a través del Fondo Rotatorio de la Organización Panamericana de la Salud, mecanismo utilizado por varios países de la región para facilitar el acceso a biológicos actualizados.

Según el último informe del Departamento de Epidemiología del Minsa, en la semana 27 se reportaron mil 609 nuevos casos de COVID-19 y se notificaron 19 defunciones, lo que refuerza la necesidad de mantener activa la estrategia de vacunación, especialmente en los grupos más vulnerables.

Fuente: Prensa Latina. Disponible en https://n9.cl/t9oie

La EMA recomienda la autorización de la vacuna de ARNm de Moderna contra la COVID-19

28 jul. El Comité de Medicamentos de Uso Humano (CHMP, por sus siglas en inglés) de la Agencia Europea del Medicamento (EMA, por sus siglas en inglés) ha emitido una opinión positiva donde recomienda la autorización de comercialización de una formulación actualizada de la vacuna Spikevax de Moderna contra la COVID-19, para la prevención de la enfermedad causada por la variante LP.8.1 del SARS-CoV-2 en personas a partir de los seis meses de edad. Tras la opinión positiva del CHMP, la Comisión Europea tomará una decisión sobre la autorización de comercialización de esta vacuna para la temporada 2025-2026.

"La opinión positiva del CHMP sobre nuestra vacuna actualizada contra la COVID-19 dirigida a la variante LP.8.1 es un hito importante en nuestro esfuerzo continuo por proteger a las personas en toda la Unión Europea", ha afirmado Stéphane Bancel, director ejecutivo de Moderna. "La COVID-19 sigue suponiendo una carga sanitaria importante para las poblaciones vulnerables y los sistemas de salud. Las vacunas actualizadas pueden ser una herramienta clave para proteger tanto a las personas a nivel individual como a la sociedad en general", ha añadido.

La decisión del CHMP se basa en una combinación de datos de fabricación y preclínicos, así como en evidencia clínica, no clínica y del mundo real previa que avala la eficacia y seguridad de las vacunas contra la COVID-19 de Moderna. La composición actualizada de la vacuna está en línea con las recomendaciones de diversas autoridades sanitarias internacionales, que han identificado a la cepa LP.8.1 como una actualización adecuada para la composición vacunal contra la COVID-19 de cara a la temporada de vacunación 2025-2026.

La compañía también ha iniciado solicitudes a nivel regulatorio para la actualización de la vacuna Spikevax en otros países del mundo.

Fuente: Gaceta de Salud. Disponible en https://n9.cl/5yyd0

The FMBA announced when a new meningococcal vaccine will be available in Russia

Jul 29. A new meningococcal vaccine developed by scientists at the St. Petersburg Scientific Research Institute of Vaccines and Serums of the Federal Medical and Biological Agency (FMBA) will be available in Russia in 2027. Currently in clinical trials, the vaccine's registration documents are expected to be submitted by the end of 2025, according to the FMBA's Telegram channel.

In April, FMBA head Veronika Skvortsova confirmed that the vaccine is in Phase 1 clinical trials. The formulation features a unique composition, including serotypes A, C, Y, W, and recombinant component B, which is known to cause severe sepsis in 30% of infection cases and is the most prevalent in Russia.

Aleksandr Rumyantsev, a member of the Duma Committee on Health Protection, emphasized the vaccine's importance. He noted that State Duma deputies plan to develop amendments by the end of 2026 to include meningococcal vaccination in the National Vaccination Calendar.

Rumyantsev highlighted WHO recommendations, stating that five new vaccines—including the meningococcal vaccine—are prioritized for inclusion in the National Vaccination Calendar. "We aim to implement relevant legislative initiatives this year to facilitate this process, aligning with government commitments," he said.

The parliamentarian also pointed out that many countries have already adopted WHO guidance, while Russia has lagged behind due to the absence of a domestically developed vaccine.

Fuente: GxP News. Disponible en https://n9.cl/mwgftg

El futuro sin agujas: científicos prueban vacuna contra el covid-19 con hilo dental

30 jul. Las vacunas aplicadas mediante hilo dental podrían en el futuro permitir que las personas se inmunicen contra el covid-19 desde casa y sin necesidad de agujas. Así lo demuestra un estudio realizado por investigadores de la Universidad Estatal de Carolina del Norte, Estados Unidos, quienes probaron este innovador método en un modelo animal.

En su experimento, introdujeron una vacuna contra la gripe a través del tejido ubicado entre los dientes y las encías. Según el equipo, este nuevo enfoque podría aplicarse ampliamente.

> *"Confiamos en que esta técnica también resulte eficaz con vacunas contra el covid-19 basadas en ARNm, así como con las de hepatitis y tétanos, que emplean proteínas de subunidades como antígenos. Además, podría funcionar con vacunas elaboradas a partir de virus inactivados o atenuados, como la triple vírica", explicó a Newsweek Harvinder Singh Gill, autor del estudio y profesor de nanomedicina en esa institución académica."*

En esencia, mediante una formulación adecuada del recubrimiento, este enfoque debería funcionar con cualquier vacuna. Los científicos descubrieron que el nuevo método estimula la producción de anticuerpos en las superficies mucosas (los revestimientos húmedos de varias cavidades corporales), como la nariz y los pulmones.

"Las superficies mucosas son importantes porque son una fuente de entrada para patógenos, como la influenza y la COVID-19. Sin embargo, si una vacuna se administra mediante inyección, los anticuerpos se producen principalmente en el torrente sanguíneo en todo el cuerpo, y relativamente pocos anticuerpos en las superficies mucosas", explicó Gill en un comunicado.

Y agregó a la conversación: "Pero sabemos que cuando se administra una vacuna a través de la superficie mucosa, los anticuerpos se estimulan no solo en el torrente sanguíneo, sino también en las superficies mucosas. Esto mejora la capacidad del cuerpo para prevenir infecciones, porque hay una línea adicional de defensa de anticuerpos antes de que un patógeno ingrese al organismo".

LA "MAGIA" RECAE EN EL EPITELIO DE UNIÓN

Algo llamado "epitelio de unión", una fina capa de tejido que recubre la superficie de las partes del cuerpo, también jugó un papel importante en el estudio.

Si bien la mayoría de los tejidos epiteliales incluyen barreras robustas diseñadas para evitar que elementos "malos", como virus y suciedad, entren en el torrente sanguíneo, el epitelio de unión carece de dicha barrera. Esto permite que el epitelio de unión libere células inmunes para combatir las bacterias, que normalmente se encuentran en la saliva, entre los dientes y las encías.

"Hasta donde sabemos, nadie ha utilizado nunca el epitelio de unión ni el hilo dental para administrar vacunas", aseguró Gill.

Para evaluar la viabilidad de administrar vacunas a través del epitelio de unión, los investigadores aplicaron la vacuna a hilo dental sin cera y luego limpiaron los dientes de ratones con este material. Compararon la producción de anticuerpos en ratones que recibieron una vacuna peptídica contra la gripe "mediante el uso de hilo dental en el epitelio de unión a través del epitelio nasal o mediante la aplicación de la vacuna en el tejido mucoso sublingual".

"Descubrimos que la aplicación de la vacuna a través del epitelio de unión produce una respuesta de anticuerpos en las superficies mucosas muy superior a la actual técnica de vacunación oral, que consiste en colocar la vacuna debajo de la lengua", afirmó en un comunicado Rohan Ingrole, autor del artículo y estudiante de doctorado de Gill en la Universidad Tecnológica de Texas.

LA RESPUESTA DE LA VACUNA CONTRA EL COVID-19 EN LAS SUPERFICIES MUCOSAS

De acuerdo con los investigadores, la técnica del hilo dental también proporciona una protección comparable contra el virus de la gripe en comparación con la vacuna administrada a través del epitelio nasal.

En contexto, la administración intranasal puede provocar que la vacuna llegue al cerebro, lo que puede plantear problemas de seguridad. Sin embargo, la vacunación a través del epitelio de unión no presenta dicho riesgo.

Los investigadores también probaron si el método de administración a través del epitelio de unión funcionaba para otras tres clases importantes de vacunas: proteínas, virus inactivados y ARNm (un tipo de ARN monocatenario involucrado en la síntesis de proteínas, siendo el ARN una molécula clave encontrada en células vivas y virus). La técnica de administración produjo "respuestas de anticuerpos robustas" en el torrente sanguíneo y en las superficies mucosas en los tres.

Al menos en el modelo animal es evidente que no importaba si se consumía comida y agua inmediatamente después de usar el hilo dental con la vacuna: la respuesta inmune era la misma.

Sin embargo, los investigadores reconocieron la imposibilidad de pedir a las personas que sostuvieran el hilo dental recubierto de vacuna entre los dedos. Esto los llevó a introducir un palillo de hilo dental con mango, similar al que se usa para eliminar la placa y los restos de comida.

Recubrieron el hilo dental con colorante alimentario fluorescente, reclutaron a 27 participantes en el estudio, explicaron el nuevo concepto de vacuna basada en hilo dental y les pidieron que intentaran depositar el colorante alimentario en su unión epitelial con un palillo de hilo dental.

EL FUTURO DE ESTA VACUNA

Aproximadamente 60 por ciento del tinte se depositó en la bolsa de la encía, lo que sugiere que el hilo dental puede ser un método práctico de administración de vacunas a la unión epitelial, según los autores.

En cuanto a la accesibilidad, la ventaja es que la vacuna está recubierta de un sólido, lo que la hace más estable y podría no requerir refrigeración. El hilo dental puede autoadministrarse, es indoloro y puede tener mejor aceptación que las inyecciones, afirmó Gill.

Si bien se necesita más investigación antes de que el método innovador pueda considerarse para uso clínico, los científicos creen que los aspectos positivos podrían extenderse más allá de la respuesta de anticuerpos mejorada, desde la facilidad de administración y la disminución de las preocupaciones sobre las agujas de la vacuna hasta un precio comparable.

Fuente: NEWSWEEK. Disponible en https://n9.cl/qw85d

World-first library of vaccine-enhancing adjuvants launches

Jul 30. Scientists have launched the first-ever library of adjuvants - substances that could boost the performance of vaccines tackling some of the world's deadliest diseases.

- *Pioneering library will serve as vaccine-adjuvant matchmaking service that creates more potent vaccines and speeds up the response to deadly disease outbreaks.*
- *The library, funded by CEPI, will be hosted by the UK's Medicines and Healthcare products Regulatory Agency (MHRA).*
- *Adjuvants are added to vaccines to create stronger, longer-lasting immunity than vaccines alone.*

The UK's Medicines and Healthcare products Regulatory Agency (MHRA) will host a repository of 25 vaccine-enhancing adjuvants that can be 'taken off the shelf' and used in new vaccines being developed against epidemic and pandemic threats. This includes diseases like mpox, COVID-19 and Ebola, as well as a novel or as-yet-unidentified Disease X.

The $2.5 million project—funded and led by the Coalition for Epidemic Preparedness Innovations (CEPI)—will act as a matchmaking service, helping vaccine developers select the best vaccine-adjuvant combination to make their vaccines more potent and effective. The adjuvants have been shared with the MHRA by leading research institutes and medical companies around the world for onward distribution.

"Immune-boosting adjuvants have played a powerful role in transforming our response to deadly diseases over the past century. Yet, the COVID-19 pandemic shone a light on the challenges in accessing these vital ingredients, with the rights to adjuvants used in licensed COVID-19 vaccines held by only a handful of companies" explains Dr Richard Hatchett, CEO of CEPI. "Constrained supplies can result in an adjuvant getting paired with a vaccine based on what's available at the time rather than what works best. This world-first library will fill the gap by matchmaking vaccines to a range of adjuvants to more rapidly identify the best combinations that could save lives and even stop a future pandemic in its tracks."

Following a pilot study, from late 2025 CEPI-backed vaccine developers will be able to request up to five adjuvant samples to combine with their vaccine

candidates. Select CEPI-supported laboratories will then run preclinical tests on the vaccine-adjuvant pairings to screen which of the five combinations performs most strongly. The developer can use these data to guide whether to progress the successful vaccine-adjuvant pairing into clinical testing.

In the case of an outbreak of a new Disease X, the adjuvant library could help quickly identify the top-performing vaccine-adjuvant pairings to contain the spread of the virus before it reaches pandemic proportions. This would support the 100 Days Mission, an ambitious goal to develop vaccines against newly emerging threats in as little as 100 days

Boosting the power of vaccines

Named after the Latin word "adjuvare", meaning "to help" or "aid", adjuvants are substances that are added in microscopic quantities to the majority of vaccines to enhance the immune response, creating stronger and longer lasting protection against infections than the vaccine alone. They are a key ingredient to help make vaccines more effective in certain age groups, such as babies or older adults, where a stronger immune response is needed.

Adjuvants—which include ingredients like aluminium salts and plant compounds—are of particular importance in an escalating outbreak as they can reduce the dose required to elicit protection. This enables more vaccine doses to be produced at pace and made available to more people which can help to rapidly contain a fast-spreading threat.

"This is a major step forward in global efforts to prepare for future outbreaks. By giving vaccine developers fast access to a range of well-characterised adjuvants, the library will help speed up the development of more effective vaccines – particularly at the early stages of an emerging health threat," said Dr Nicola Rose, Interim Executive Director of Science and Research at the MHRA, which is hosting the new global adjuvant library. "The MHRA is proud to host this new global resource, building on our long track record in supporting the safe and effective development of vaccines, particularly through the development and global distribution of biological standards. By enabling access to the adjuvant library, we are supporting developers in the timely identification of the best vaccine formulations, which can ultimately improve the effectiveness and quality of vaccines. Enabling developers to make effective vaccines available supports better disease protection for people worldwide."

By using the library, vaccine developers commit to using adjuvants on a non-exclusive basis so that multiple developers can have access to the same adjuvant supplies. In line with CEPI's Equitable Access Policy, vaccine developers are encouraged to publish data on their vaccine and adjuvant pairings in open-access publications for all to benefit from the research.

Fuente: CEPI. Disponible en https://n9.cl/933ja

Vacunación de refuerzo anticovid-19 prioriza grupos vulnerables

31 jul. Para mantener altos niveles de inmunidad en grupos de población vulnerables, hoy en Matanzas, Cuba, impulsan la vacunación de refuerzo anticovid-19 para combatir variantes del virus SARS-CoV-2.

La doctora Berta María Bello Rodríguez, subdirectora de Epidemiología en Matanzas, explicó que la provincia dispone actualmente de la vacuna cubana Soberana-02 en frascos multidosis (10 dosis) para la aplicación del refuerzo.

Para personas con alergias específicas, se ofrece la presentación monodosis de Abdala sin tiomersal, aclaró Bello Rodríguez; y precisó que hasta finales de junio se reportaron 16 mil 448 dosis de refuerzo aplicadas en la provincia, cifra que supera ya los 25 mil en julio.

La vacunación de refuerzo anticovid-19 forma parte del esquema que desde 2021 impulsa el sistema de salud cubano para fortalecer la defensa contra la enfermedad grave en adultos mayores de 65 años, trabajadores de la salud, pacientes y personal de hogares de ancianos y casas de abuelo.

Según Bello Rodríguez a estos grupos priorizados se suman pacientes psiquiátricos crónicos, y personas con enfermedades no transmisibles como diabetes, hipertensión, asma, insuficiencia renal crónica que reciben la vacuna en todas las áreas de salud de la provincia.

Los adultos pertenecientes a los grupos de riesgo pueden y deben vacunarse todos los años; el sistema de salud tiene el deber de vacunarlos, pero la población también puede acercarse a solicitar la dosis en los puntos habilitados, aclaró.

La doctora Bello Rodríguez recalcó la seguridad de las vacunas cubanas, indicando que no se registran reacciones adversas graves, siendo el dolor localizado en el sitio de la inyección la molestia más frecuente.

Fuente: Agencia Cubana de Noticias ACN. Disponible en https://n9.cl/krfrfc

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Patentes registradas en Patentscope

Estrategia de búqueda: *FP:(vaccine) AND DP:([19.07.2025 TO 31.07.2025]) 37 records*

1.WO/2025/160594mRNA PRIMING VACCINE COMPOSITION AND METHOD OF USE THEREOF
WO - 31.07.2025
Int.Class A61K 39/21 Appl.No PCT/US2025/020678 Applicant DNA PLUS VACCINES COMPANY LIMITED Inventor LU, Shan
A method for immunizing a subject against a pathogen, comprising the steps of: (1) administering to the subject an effective amount of a prime vaccine, wherein the prime vaccine comprises one or more mRNA constructs encoding one or more immunogens from the pathogen; and (2) administering to the subject an effective amount of a boost vaccine, wherein the booster vaccine comprises a non-mRNA vaccine

modality, such as a recombinant protein, against the pathogen, wherein the boost vaccine comprises the immunogen or immunogens encoded in one or more mRNA constructs in the prime vaccine, or wherein the boost vaccine comprises the immunogen or immunogens that are not the same as encoded in one or more mRNA constructs in the prime vaccine, wherein the boost vaccine is administered after the administration of the prime vaccine.

2.20250235518Method for preparing tumor vaccine using magnetic thermal inactivation technology
US - 24.07.2025
Int.Class A61K 39/00 Appl.No 19061999 Applicant Shaanxi Baici Kangda Medical Technology Co., Ltd. Inventor Xiaoli Liu

The present invention relates a method for preparing a personalized tumor vaccine using magnetic induction hyperthermia (MIH) inactivation technique, falling within the field of medicine. In this method, a MIH nanoagent is used to generate localized heat within tumor cells upon exposure to an alternating magnetic field, triggering immunogenic cell death and inducing the emergence of neoantigens mutations in tumor cells. Depending on the specific requirements, two strategies can be utilized: one involves preparing a whole tumor cell vaccine containing multiple tumor antigens, while the other focuses on screening specific tumor neoantigens to create a targeted tumor neoantigen vaccine. Mouse model experiments demonstrated that the whole tumor cell vaccine prepared using this method effectively inhibited the growth of homologous tumors, with a tumor-free rate of 100% in the vaccination group. Using MIH for tumor cells inactivation offers several advantages, including the preservation of antigen integrity, enhanced antigen abundance, and an increase in the diversity and quantity of released endogenous adjuvants. All of these factors contribute to the creation of a highly immunogenic personalized tumor vaccine, which holds promise for inhibiting tumor growth, recurrence and metastasis.

3.WO/2025/157994VACCINE AGAINST RUMINANT RESPIRATORY DISEASE
WO - 31.07.2025
Int.Class A61K 39/102 Appl.No PCT/EP2025/051800 Applicant INTERVET INTERNATIONAL B.V. Inventor VAIDYANATHAN, Subramaniam
The present invention relates to a vaccine comprising live attenuated P. multocida bacteria and a pharmaceutically acceptable carrier, for use in protecting a ruminant against an infection with P. multocida, wherein the vaccine is deposited in the oral cavity of the ruminant. In addition, the invention relates to a single-dose vaccine, to methods for the preparation of the vaccine, methods for vaccinating ruminants against infection with P. multocida, methods of improving the respiratory function of a ruminant, methods of treating, ameliorating and/or preventing a diseased state in a ruminant and to a kit-of-parts at least comprising a container comprising the vaccine of the invention.

4.WO/2025/156779PNEUMOCOCCAL POLYSACCHARIDE-RSV RECOMBINANT PROTEIN CONJUGATE VACCINE AND PREPARATION METHOD THEREFOR
WO - 31.07.2025
Int.Class C07K 14/135 Appl.No PCT/CN2024/131554 Applicant UNIVERSALVAX BIOTECHNOLOGIES (TAIZHOU) CO., LTD. Inventor LI, Jianping
A pneumococcal polysaccharide-RSV recombinant protein conjugate vaccine for preventing pneumococcal infection and RSV infection and a preparation method therefor. The pneumococcal polysaccharide-RSV recombinant protein conjugate vaccine has an RSV recombinant protein that is an RSV Pre-F recombinant protein with enhanced stability due to amino acid mutation modification. The RSV recombinant protein has immunogenicity and is used as a carrier protein of pneumococcal polysaccharide. In the pneumococcal polysaccharide-RSV recombinant protein conjugate vaccine, by means of the amino acid mutation modification on an RSV PreF protein carrier, the protein can still

maintain the structural stability and an antigen cluster function in different environments, including high temperature, acidity, and high osmotic pressure. The conjugate vaccine has dual immunogenicity and can simultaneously effectively prevent diseases caused by streptococcus pneumoniae and RSV.

5.WO/2025/157158PNEUMOCOCCAL CONJUGATE COMBINED VACCINE AND PREPARATION METHOD THEREFOR
WO - 31.07.2025
Int.Class A61K 39/385 Appl.No PCT/CN2025/073816 Applicant BEIJING ZHIFEI LVZHU BIOPHARMACEUTICAL CO., LTD. Inventor ZONG, Xiangkun
Provided are a pneumococcal conjugate combined vaccine and a preparation method therefor. The combination comprises 26 different pneumococcal polysaccharide-protein conjugates, and the pneumococcal polysaccharide comprises a total of 26 serotypes, i.e., 1, 2, 3, 4, 5, 6A, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, 24F, 33F and 35B. The carrier protein used by the conjugate is tetanus toxoid (TT). The polysaccharide is covalently linked to the TT by means of a cyano activation method so as to prepare a polysaccharide-protein conjugate stock solution, and the polysaccharide-protein conjugate stock solution is then adsorbed by an aluminum adjuvant in an appropriate proportion so as to obtain the pneumococcal conjugate vaccine. The pneumococcal polysaccharide used therein requires no degradation reaction, effectively protecting the antigenicity of the polysaccharide. Three consecutive batches of production of the conjugate stock solution and vaccine are performed, and the yield and each verification index of the conjugate are stable. The results of non-clinical safety evaluation research show that the vaccine has good safety and immunogenicity. The prepared pneumococcal conjugate vaccine is used for immunoprophylaxis of pneumococcal infection of relevant serotypes.

6.WO/2025/157196MODIFIED VACCINIA VIRUS AND USE THEREOF
WO - 31.07.2025
Int.Class C12N 15/863 Appl.No PCT/CN2025/074114 Applicant SHENZHEN HUA YAO KANG MING BIOPHARMACEUTICAL CO., LTD. Inventor YUAN, Ming
The present application relates to a modified vaccinia virus and a use thereof. Compared with an unmodified vaccinia virus, the modified vaccinia virus comprises an amino acid mutation in L109 protein, and/or the expression and/or activity of L006 protein and L007 protein are inhibited.

7.WO/2025/156063VACCINE, METHOD OF PRODUCTION, USE FOR TREATING AND PREVENTING PISCINE ORTHOREOVIRUS CAPSID PROTEINS
WO - 31.07.2025
Int.Class C07K 14/14 Appl.No PCT/CL2025/050007 Applicant UNIVERSIDAD DE SANTIAGO DE CHILE Inventor CORTEZ SAN MARTÍN, Marcelo Andrés
The present invention relates to recombinant proteins, encoding nucleic acids, a vector, transformed microorganism and host cell, a vaccine composition intended for salmon farming, and use for preventing and treating infections caused by Piscine orthoreovirus (PRV). In particular, the present invention relates to a vaccine based on recombinant proteins expressed in a baculovirus/insect cell system and corresponding to the structural proteins in the first and second layer of the viral capsid. This vaccine can be administered intraperitoneally, reducing the viral load of Piscine orthoreovirus in salmon infected with this virus.

8.WO/2025/152055METHOD FOR TESTING IN-VITRO BACTERICIDAL FUNCTION OF TYPHOID VACCINE IMMUNE SERUM
WO - 24.07.2025
Int.Class C12Q 1/18 Appl.No PCT/CN2024/072670 Applicant LANZHOU INSTITUTE OF BIOLOGICAL PRODUCTS CO., LTD Inventor REN, Haofeng

Provided is a method for testing the in-vitro bactericidal function of a typhoid vaccine immune serum, comprising: testing the in-vitro bactericidal function of a typhoid vaccine immune serum against Salmonella typhi bacteria by means of an opsonophagocytic killing assay, wherein when the phagocytic killing step of the opsonophagocytic killing assay is completed, the Salmonella typhi bacteria having undergone the phagocytic killing step are cultured at the pH of 7.5-9.5. The opsonophagocytic killing assay is applied to Gram-negative Salmonella Typhi bacteria for the first time, and the in-vitro bactericidal levels of typhoid vaccine immune serums are effectively and accurately evaluated.

9.WO/2025/155702CELLULOSE-BASED HYDROGELS AS VACCINE ADJUVANTS
WO - 24.07.2025
Int.Class A61K 47/61 Appl.No PCT/US2025/011844 Applicant UNIVERSITY OF MAINE SYSTEM BOARD OF TRUSTEES Inventor BOUCHARD, Deborah
Adjuvant compositions, and vaccine compositions utilizing the adjuvant compositions, are described. The adjuvant compositions include a salt-crosslinked TEMPO-oxidized cellulose nanofibril (CNF) hydrogel, and the vaccine compositions further include an antigen or immunogen.

10.WO/2025/159608VACCINE COMPOSITION COMPRISING PORPHYROMONAS GINGIVALIS FOR PREVENTING DEMENTIA, AND PREPARATION METHOD THEREFOR
WO - 31.07.2025
Int.Class G01N 33/68 Appl.No PCT/KR2025/099052 Applicant UIF (UNIVERSITY INDUSTRY FOUNDATION), YONSEI UNIVERSITY Inventor KOO, Bon Nyeo
The present invention relates to the identification of a target material through which Porphyromonas gingivalis affects dementia, and a use of a Porphyromonas gingivalis vaccine for preventing or treating dementia. A composition comprising (Porphyromonas gingivalis, of the present invention, reduces the expression of IGFBP2, Aß and p-Tau and reduces the level of blood insulin, and thus can be used as an effective composition for a dementia vaccine or a composition for preventing, alleviating or treating dementia, and can be effectively used in a method for preventing or treating dementia.

11.WO/2025/159411NANOPARTICLE COMPRISING CELL-PENETRATING PEPTIDES CONJUGATED WITH DEOXYCHOLIC ACID AND USE THEREOF
WO - 31.07.2025
Int.Class A61K 9/51 Appl.No PCT/KR2025/000530 Applicant IUCF-HYU (INDUSTRY-UNIVERSITY COOPERATION FOUNDATION HANYANG UNIVERSITY) Inventor KIM, Yong- Hee
An embodiment of the present invention relates to: a vaccine nanoparticle comprising an assembly of cell-penetrating peptides (CPPs) conjugated with deoxycholic acid (DOCA); a method for preparing same; and a vaccine composition for preventing or treating cancer, comprising same. The effects of migration, maturation, and antigen presentation through MHC I in dendritic cells, as well as antigen-specific T cell immune responses through the nanoparticle of the present invention were evaluated in vitro and in vivo. An improved effect was also confirmed through repolarization of tumor-associated macrophages. Additionally, the effect of combination therapy with an immune checkpoint inhibitor was confirmed in a tumor-bearing animal model. The nanoparticle of the present invention induces antigen-specific immunity and macrophage repolarization, thereby improving anti-tumor immunotherapy, and thus can be applied as an mRNA cancer vaccine.

12.20250235528VACCINE COMPOSITION COMPRISING AN ANTIGEN AND A TLR3 AGONIST
US - 24.07.2025
Int.Class A61K 39/215 Appl.No 18843169 Applicant ISR IMMUNE SYSTEM REGULATION HOLDING AB (PUBL) Inventor Ola WINQVIST

A vaccine composition comprising one or more proteins expressed on the surface of a respiratory virus or bacterium and one or more pharmaceutically acceptable excipient, wherein the composition is in particulate form having a mean particle size in a range of from 2 to 50 μm. The protein is contained in the composition in its correctly folded three-dimensional structure.

13.4588942TRUNCATED RESPIRATORY SYNCYTIAL VIRUS F PROTEIN AND USE THEREOF
EP - 23.07.2025
Int.Class C07K 19/00 Appl.No 23878678 Applicant UNIV XIAMEN Inventor ZHENG ZIZHENG
Provided are a fusion protein, and a nucleic acid molecule comprising a nucleotide sequence encoding the fusion protein. The present invention also relates to a vaccine comprising the fusion protein or the nucleic acid molecule. Furthermore, the present invention also relates to a method for preventing and/or treating RSV infections or diseases and/or symptoms caused by RSV infections by means of using the fusion protein, nucleic acid molecule and vaccine.

14.WO/2025/160552COMBINATORIAL CANCER VACCINE
WO - 31.07.2025
Int.Class A61K 9/51 Appl.No PCT/US2025/013208 Applicant CASE WESTERN RESERVE UNIVERSITY Inventor LU, Zheng-Rong
A combinatorial cancer vaccine for cancer therapy includes a lipid nanoparticle that includes a plurality of pH sensitive protonatable or ionizable lipids, at least one of a TLR7 agonist, TLR 8 agonist or a TLR9 agonist complexed with and/or encapsulated by the pH sensitive protonatable or ionizable lipids, optionally a nucleic acid encoding a cancer antigen or neoantigen complexed or conjugated with and/or encapsulated by the pH sensitive protonatable or ionizable lipids, and optionally a stabilizing amount of at least one stabilizing polymer, polyethylene glycol or polysaccharide, or structural lipid that is conjugated to and/or complexed with the pH sensitive protonatable or ionizable lipids.

15.WO/2025/155607METHODS OF TREATING UROTHELIAL CARCINOMA WITH A PD-1 AXIS BINDING ANTAGONIST AND AN RNA VACCINE
WO - 24.07.2025
Int.Class A61K 39/395 Appl.No PCT/US2025/011687 Applicant GENENTECH, INC. Inventor YADAV, Mahesh
The present disclosure provides methods for treating an individual with a urothelial carcinoma with an individualized cancer vaccine and a PD-1 axis antagonist.

16.20250235530Anti COVID-19 Therapies targeting nucleocapsid and spike proteins
US - 24.07.2025
Int.Class A61K 39/215 Appl.No 19080620 Applicant ImmunityBio, Inc. Inventor Patrick Soon-Shiong

Disclosed herein are methods for inducing immunity against a virus such as a coronavirus in the mucosal tissue of a patient, include administering a vaccine composition to the patient by oral administration (e.g., nasal injection, nasal inhalation, oral inhalation, and/or oral ingestion). Also disclosed are compositions for assaying the presence of anti-viral antibodies induced by the administered vaccine or the presence of viral proteins in a saliva sample include a stabilizing solution and may also include the use of aragonite particle beads. Compositions and methods are presented for prevention and/or treatment of a coronavirus disease wherein the composition comprises comprises a recombinant entity. The recombinant entity is bivalent, comprising a nucleic acid encoding a coronavirus 2 nucleocapsid protein CoV2 nucleocapsid protein fused to an endosomal targeting sequence, and a nucleic acid encoding a CoV2 spike protein sequence optimized for cell surface expression.

17.WO/2025/153100HERPES SIMPLEX VIRUS RECOMBINANT ANTIGEN AND USES THEREOF

WO - 24.07.2025
Int.Class C07K 19/00 Appl.No PCT/CN2025/073447 Applicant SICHUAN CLOVER BIOPHARMACEUTICALS, INC. Inventor LIANG, Peng
The present disclosure provides a fusion polypeptide comprising an soluble HS V viral surface antigen joined by in-frame fusion to a protein trimerization tag which is capable of self-trimerization, and immunogenic composition or vaccine comprising the same. The fusion polypeptide, the the immunogenic composition and vaccine provided herein are useful for generating an immune response, e.g., for treating or preventing a HS V infection. The fusion polypeptide provided herein may be used in a detection of an antibody to HSV, e.g., a neutralizing antibody.

18.WO/2025/158069CONSTRUCT COMPRISING mRNA-STRAND AND RETINOIC ACID-INDUCIBLE GENE I (RIG-I)-LIGAND(S), PHARMACEUTICAL COMPOSITION AND KIT COMPRISING THE SAME
WO - 31.07.2025
Int.Class C12N 15/11 Appl.No PCT/EP2025/051947 Applicant RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITÄT BONN Inventor HARTMANN, Gunther
The present invention relates to a construct comprising a mRNA-strand, and at least one, preferably at least two, retinoic acid-inducible gene I (RIG-I)-ligand(s) comprising a) a nucleic acid sequence being capable of binding to RIG-1, b) a linker moiety L comprising 3 to 24 main chain atoms, and c) a single-stranded nucleic acid sequence capable of hybridizing to at least one nucleic acid sequence of the mRNA-strand. The present invention further provides said construct for use as a medicament and/or for use as a vaccine, a pharmaceutical composition and kit comprising said construct, said construct for use in a method of treatment or prevention of a disease, the use of said construct as a vaccine and/or an immune adjuvant, said construct for use in a method of inducing an immune response as well as a method of treating and a method of inducing an immune response.

19.20250235467DENDRITIC CELL VACCINATION IN PARALLEL TO CHEMOTHERAPY
US - 24.07.2025
Int.Class A61K 31/555 Appl.No 19036294 Applicant Excoso a.s. Inventor Radek Spisek

The present invention relates to a dendritic cell vaccine for use in the treatment of cancer, wherein the dendritic cell vaccine is administered to a patient in parallel to chemotherapy with at least one chemotherapeutic agent.

20.20250235525INFLUENZA VACCINE
US - 24.07.2025
Int.Class A61K 39/145 Appl.No 19022712 Applicant ModernaTX, Inc. Inventor Giuseppe CIARAMELLA

The invention relates to compositions and methods for the preparation, manufacture and therapeutic use ribonucleic acid vaccines comprising polynucleotide molecules encoding one or more influenza antigens, such as hemagglutinin antigens.

21.4587049ADJUVANTS FOR ENHANCING THE IMMUNE RESPONSE
EP - 23.07.2025
Int.Class A61K 39/00 Appl.No 23866275 Applicant LANKENAU INST MEDICAL RES Inventor HEBER-KATZ ELLEN

Compositions and methods enhancing a patient's immune response to an immune stimulatory composition are disclosed. In certain embodiments, the method includes administering a composition comprising a PHD pathway inhibitor and a vaccine to a subject.

22.WO/2025/155938VACCINE FOR PREVENTION AND TREATMENT OF HUMAN PAPILLOMA VIRUS RELATED CANCER
WO - 24.07.2025
Int.Class C07K 14/025 Appl.No PCT/US2025/012235 Applicant AOV BIOPHARMA, INC. Inventor GAI, Dahai
The present disclosure provides novel combinations of nucleic acid sequences encoding regions of E6 and E7 proteins of human papilloma virus (HPV) strains, as nucleic acid vaccines, to treat HPV and/or HPV-related cancers, prevent HPV and/or HPV-related cancers, or a combination thereof.

23.WO/2025/151964GENETICALLY MODIFIED BACTERIA HAVING STABLE MUTATIONS WITHOUT THE REQUIREMENT OF ANTIBIOTIC MARKERS, AND SYSTEMS AND METHODS FOR GENERATING SAME
WO - 24.07.2025
Int.Class C12N 1/21 Appl.No PCT/CA2025/050068 Applicant EVAH AVIAN TECHNOLOGY INC. Inventor DOZOIS, Charles
One drawback for using attenuated bacteria in cancer therapy and as vaccine vectors faces several challenges. These include ensuring safety and stability of the attenuated strains, achieving consistent colonization or delivery to the target site, and eliciting a controlled immune response. To address this, the present disclosure relates to systems, methods and genetically modified bacteria having reduced risk of reversing virulence without use of antibiotic markers. For example, the genetically modified bacteria comprises a chromosomal disruption in an auxotrophic gene and in one or more gene(s) involved in phosphate regulation, and a DNA rescue molecule comprising a functional copy of the auxotrophic gene. The genetically modified bacteria are obtained from virulent pathogenic bacteria containing a virulence plasmid.

24.20250235521LIVE MYCOPLASMA GALLISEPTICUM VACCINES
US - 24.07.2025
Int.Class A61K 39/02 Appl.No 18853887 Applicant UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC. Inventor Naola M. FERGUSON-NOEL

The present invention provides *Mycoplasma gallisepticum* strain K6067 as deposited at the ATCC under Patent Designation PTA-127168, *Mycoplasma gallisepticum* strain K4110 as deposited at the ATCC under Patent Designation PTA-127282, and progeny and derivatives thereof, for use as a vaccine for the prevention of virulent *Mycoplasma gallisepticum* infections in the birds of the order Galliformes. Also provided are compositions and methods for administration to birds of the order Galliformes.

25.20250235532POLYMER-LIPID HYBRID NANOPARTICLES COMPRISING A LIPID AND A BLOCK COPOLYMER AS WELL AS METHODS OF MAKING AND USES THEREOF
US - 24.07.2025
Int.Class A61K 39/385 Appl.No 18840856 Applicant ACM BIOLABS PTE LTD Inventor Madhavan NALLANI

The present invention relates to a polymer-lipid hybrid nanoparticle comprising a lipid and a block copolymer, wherein the amount of said lipid, expressed in mole percentage (mole %) present in the polymer-lipid hybrid nanoparticle, wherein the mole percentage refers to the total amount of all components that form the polymer-lipid nanoparticle, is greater than the amount of said block copolymer, expressed in mole percentage, present in the polymer-lipid hybrid nanoparticle. The invention also relates to such a polymer-lipid hybrid nanoparticle further comprising a soluble encapsulated antigen, wherein said soluble encapsulated antigen is a protein and/or polynucleotide. The invention further relates to a

method of encapsulating such an antigen in such a polymer-lipid hybrid nanoparticle as well as to a composition comprising such a polymer-lipid hybrid nanoparticle and uses of such a polymer-lipid hybrid nanoparticle and/or composition as a vaccine, a pharmaceutical, means of targeting cells, tissues and/or organs and/or non-viral delivery system capable of delivering nucleotides to inside a cell.

26.4587054UNIVERSAL T CELL-BASED, CMV-VECTORED VACCINE FOR INFLUENZA
EP - 23.07.2025
Int.Class A61K 39/145 Appl.No 23866435 Applicant UNIV OREGON HEALTH & SCIENCE Inventor SACHA JONAH

The invention relates to methods of generating an immune response for the treatment or prevention of a pathogenic infection. The invention also relates to methods of generating MHC-I, MHC-II, and/or MHC-E restricted CD8+ and/or CD4+ T cells for the treatment or prevention of a pathogenic infection.

27.2025205386Feline calicivirus vaccine
AU - 24.07.2025
Int.Class Appl.No 2025205386 Applicant Intervet International B.V. Inventor TARPEY, Ian

28.20250236848DEVELOPMENT OF DENGUE VIRUS VACCINE COMPONENTS
US - 24.07.2025
Int.Class C12N 7/04 Appl.No 18982378 Applicant The Government of the USA as represented by the Secretary, Dept. of Health and Human Services Inventor Stephen S. Whitehead

The invention is related to a dengue virus or chimeric dengue virus that contains a mutation in the 3' untranslated region (3'-UTR) comprising a Δ30 mutation that removes the TL-2 homologous structure in each of the dengue virus serotypes 1, 2, 3, and 4, and nucleotides additional to the Δ30 mutation deleted from the 3'-UTR that removes sequence in the 5' direction as far as the 5' boundary of the TL-3 homologous structure in each of the dengue serotypes 1, 2, 3, and 4, or a replacement of the 3'-UTR of a dengue virus of a first serotype with the 3'-UTR of a dengue virus of a second serotype, optionally containing the Δ30 mutation and nucleotides additional to the Δ30 mutation deleted from the 3'-UTR; and immunogenic compositions, methods of inducing an immune response, and methods of producing a dengue virus or chimeric dengue virus.

29.2025202851EIMERIA VACCINE
AU - 24.07.2025
Int.Class A61K 39/012 Appl.No 2025202851 Applicant EIMERIA PTY LTD Inventor KOSARAJU, Sarika A ABBSSTTRRAACCTT Thheep prreesseennttd diisscclloossuurreer rellates too mmeetthooddssa annddc coompmospiotsiiotniosnfso frotrh tehepr pordoudcuticotinon of oooccyyssttts from p prorottoozzooaa,, s suucchhas asEi Emiemreirai.a.Th Tehepre psrensetndtis dcislcolsousruereal aslosore rlealatteess commpopsoistitoionsnsco cmopmripsriinsgintghe thoeoc oyostcsysatnsd aunsde uosfeth oefse thceosmepo csoimtipoonsiftoironth feortr tehaetm ternetatment a anndd/o/orrpr perveevnteinotnioonf oinffe inctfieocntsi.ons.

30.WO/2025/157063PORCINE EPIDEMIC DIARRHEA VIRUS S PROTEIN AND RELATED PRODUCT
WO - 31.07.2025
Int.Class C07K 14/165 Appl.No PCT/CN2025/072743 Applicant PULIKE BIOLOGICAL ENGINEERING, INC. Inventor TIAN, Kegong
The present application relates to the technical field of veterinary biological products. Particularly provided are a porcine epidemic diarrhea virus S protein and a related product. The amino acid sequence of a porcine epidemic diarrhea virus S protein fragment is as shown in SEQ ID NO. 4. A trimer tag is fused at the C terminus of a protective antigen in a form of the truncated porcine epidemic diarrhea virus S protein,

so as to construct a trimer S protein; and after expression and purification, animal evaluation is performed to determine the immunogenicity. Upon verification, a vaccine prepared from the trimer S protein has the advantages of high safety, good immunogenicity, batch-to-batch consistency, capability of inducing piglets to generate good immune responses, etc., and therefore can effectively treat or prevent porcine epidemic diarrhea.

31.20250235519NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST PANCREATIC CANCER AND OTHER CANCERS
US - 24.07.2025
Int.Class A61K 39/00 Appl.No 19173511 Applicant IMMATICS BIOTECHNOLOGIES GMBH Inventor 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 tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

32.20250235529SARS-CoV-2 VACCINE COMPOSITIONS
US - 24.07.2025
Int.Class A61K 39/215 Appl.No 18856293 Applicant MERCIA PHARMA, INC. Inventor Peter BLACKBURN

The present disclosure provides compositions of adjuvanted SARS-CoV-2 vaccines and their use to prevent and manage Covid-19 infection, including host hyperinflammatory responses to infection, including long term symptoms associated with Covid infection.

33.4587051VACCINE AGAINST HELICOBACTER PYLORI INFECTION
EP - 23.07.2025
Int.Class A61K 39/02 Appl.No 23772449 Applicant IGUANA BIOTECHNOLOGY GMBH Inventor KALALI BEHNAM

Present application relates to a polypeptide comprising a sequence of an epitope from UreaseB, a polypeptide comprising a sequence of an epitope from UreaseB for use in preventing or treating a disease caused by Helicobacter pylori (H. pylori), a composition comprising said polypeptide, and a composition for use in preventing or treating a disease caused by H. pylori.

34.20250235522COMPOSITIONS AND METHODS OF VACCINATION AGAINST DENGUE VIRUS IN CHILDREN AND YOUNG ADULTS
US - 24.07.2025
Int.Class A61K 39/12 Appl.No 18821030 Applicant Takeda Vaccines, Inc. Inventor Derek Wallace

Embodiments herein concern compositions, methods, and uses for inducing an immune response to all four dengue virus serotypes in a child or young adult from about 1 year to about 20 years of age. Some embodiments concern compositions that can include, but are not limited to, dengue virus chimeras that, either alone or in combination with other constructs, can be used in a vaccine composition against all four dengue virus serotypes. In certain embodiments, compositions can include constructs of more than one serotypes of dengue virus, such as dengue-1 (DEN-1) virus, dengue-2 (DEN-2) virus, dengue-3 (DEN-3)

virus and/or dengue-4 (DEN-4) virus, at various concentrations or ratios in order to improve protection from infection in children and young adults. In certain embodiments, viruses of the formulations are limited to dengue virus serotypes. Other embodiments concern methods of administering immunogenic compositions against dengue virus that can include chimeric dengue constructs and live, attenuated dengue viruses using single, dual or other regimens.

35.20250236599LIPID NANOPARTICLES FOR OLIGONUCLEOTIDE DELIVERY
US - 24.07.2025
Int.Class C07D 295/13 Appl.No 18705479 Applicant ZIPHIUS NV Inventor Ashiqul HAQUE AKM

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

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

36.4587053VACCINES AGAINST INFECTIOUS SALMON ANEMIA AND USES THEREOF
EP - 23.07.2025
Int.Class A61K 39/145 Appl.No 23864220 Applicant GMG FISH SERVICES INC Inventor FAST MARK DAVID

Compositions, nucleic acids and polypeptides for treating and preventing infectious salmon anaemia (ISA) in finfish are provided. In one embodiment, a vaccine is provided comprising one or more nucleic acid molecules, optionally mRNA, encoding one or more infectious salmon anemia virus (ISAv) antigenic polypeptides or immunogenic variants or fragments thereof and a nucleic acid carrier.

37.WO/2025/158034METHOD FOR OPTIMIZING SELECTION OF AN EFFECTIVE VACCINE AGENT
WO - 31.07.2025
Int.Class G16B 40/00 Appl.No PCT/EP2025/051857 Applicant EVAXION BIOTECH A/S Inventor KLAUSEN, Michael Schantz
The present invention relates to a method for ranking of immunization agents composed of or encoding multiple potential human leukocyte antigen (HLA) ligands in order to provide a patient with the optimal treatment in terms of immunization. The method entails a step of matching the patient's HLA profile with the potential HLA ligands and based on this and optionally the expression pattern of the HLA ligands in the patient then ranking the immunization agents according to their probabilities of including a preselected number of true HLA ligands.

Patentes registradas en USPTO

Estrategia de búsqueda: vaccine.ti. AND @PD>="20250719"<=20250731
26 records

Document ID	Title	Inventor	Applicant Name
US 20250242010 A1	Compositions and methods for making and using thermostable immunogenic formulations with increased compatibility of use as vaccines against one or more pathogens	Randolph; Theodore W. et al.	THE REGENTS OF THE UNIVERSITY OF COLORADO, A BODY CORPORATE
US 20250242059 A1	Coronavirus vaccine	Sahin; Ugur et al.	BioNTech SE
US 20250242013 A1	Virus-like particle stably expressed by animal cells as vaccine antigen against COVID-19 and influenza virus	HSIAO; Pei-Wen et al.	ACADEMIA SINICA
US 20250244344 A1	Methods to measure the concentration of aluminium hydroxide in menb vaccines	DI MEOLA; Lorenzo et al.	GLAXOSMITHKLINE BIOLOGICALS SA
US 12370255 B2	Peptide-based vaccines, methods of manufacturing, and uses thereof for inducing an immune response	Lynn; Geoffrey Martin et al.	Barinthus Biotherapeutics North America, Inc., The United States of America, as represented by the Secretary, Department of Health and Human Services, Office of Technology Transfer, National Institute of Health
US 12370251 B2	Adjuvanted nanoparticulate influenza vaccine	Blackburn; Peter et al.	Blackburn; Peter,Grimes; Stephen
US 12370262 B2	Messenger RNA vaccines and uses thereof	Karve; Shrirang et al.	Translate Bio, Inc.
US 12370254 B2	Dendritic cell-targeting universal vaccine for influenza infection	Yao; Xiao-Jian	University of Manitoba
US 12370244 B2	Breast cancer vaccine	Tuohy; Vincent K. et al.	The Cleveland Clinic Foundation
US 12371455 B2	Sapovirus vaccines	Young; Alan John	VST LLC
US 12370247 B2	Multivalent pneumococcal vaccines	Malley; Richard et al.	Affinivax, Inc.

US 20250236848 A1	Development of dengue virus vaccine components	Whitehead; Stephen S. et al.	The Government of the USA as represented by the Secretary, Dept. of Health and Human Services
US 20250235525 A1	Influenza vaccine	CIARAMELLA; Giuseppe	ModernaTX, Inc.
US 20250235528 A1	Vaccine composition comprising an antigen and a tlr3 agonist	WINQVIST; Ola et al.	ISR IMMUNE SYSTEM REGULATION HOLDING AB (PUBL)
US 20250235527 A1	Synthetic modified vaccinia ankara (smva) based coronavirus vaccines	DIAMOND; Don J. et al.	CITY OF HOPE
US 20250235521 A1	Live mycoplasma gallisepticum vaccines	FERGUSON-NOEL; Naola M.	UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC.
US 20250235529 A1	SARS-cov-2 VACCINE COMPOSITIONS	BLACKBURN; Peter et al.	MERCIA PHARMA, INC.
US 20250235518 A1	Method for preparing tumor vaccine using magnetic thermal inactivation technology	Liu; Xiaoli et al.	Shaanxi Baici Kangda Medical Technology Co., Ltd.
US 20250235526 A1	Compositions and methods for optimized hiv peptide vaccines	Gifford; David et al.	Think Therapeutics, Inc.
US 12364748 B2	Influenza B virus replication for vaccine development	Kawaoka; Yoshihiro et al.	Wisconsin Alumni Research Foundation (WARF)
US 12364752 B2	Methods of enhancing immunogenicity of poorly immunogenic antigen-specific vaccines using oral yeast beta-glucans	Cheung; Nai-Kong et al.	Memorial Sloan Kettering Cancer Center
US 12364747 B2	Stabilized live attenuated influenza vaccine compositions	Dhere; Rajeev Mhalasakant et al.	SERUM INSTITUTE OF INDIA PVT LTD.
US 12364751 B2	HBV vaccines and methods treating HBV	Balsitis; Scott J. et al.	Gilead Sciences, Inc.
US 12364758 B2	Use of leukemia-derived cells in ovarian cancer vaccines	Manting; Erik Hans et al.	MENDUS B.V.
US 12364745 B2	Immunogenicity of a CpG-adjuvanted recombinant plague vaccine	Janssen; Robert S. et al.	Dynavax Technologies Corporation,The Government of the United States, as Represented by the Secretary of the Army

US 12364750 B1	Conserved region T cell vaccines for coronavirus and methods of use	Korber; Bette T. M. et al.	Triad National Security, LLC,The Trustees of The University of Pennsylvania,Beth Israel Deaconess Medical Center, Inc.,Oxford University Innovation Limited

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