

VacCiencia

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

- Noticias más recientes en la Web sobre vacunas.
- Artículos científicos más recientes de Medline sobre vacunas Covid.
- Patentes más recientes en Patentscope sobre vacunas.

Noticias en la Web

La OMS declaró variante de interés a la cepa BA.2.86 de COVID y seguirá de cerca su evolución

1 dic. Si bien no la consideró “variante preocupante”, la designación más alta, el organismo avisó que la falta de datos y la velocidad con que se propaga la última mutación surgida del SARS-CoV-2 es para tener en cuenta. ¿Qué alarma a los expertos?

La Organización Mundial de la Salud (OMS) declaró variante de interés a la cepa BA.2.86 del SARS-CoV-2 surgida en agosto pasado en los EEUU e instalada como la tercera más común y responsable de uno de cada 11 nuevos casos de COVID-19, según la última actualización del rastreador de variantes de los Centros para el Control y la Prevención de Enfermedades (CDC).

Es que a casi cuatro años de descubierto el SARS-CoV-2 en China, y pese a que se cree que lo peor de la pandemia ya pasó, la COVID-19 sigue siendo noticia. Ahora, debido a la escasez de datos de la última variante del virus y la velocidad a la que se propaga.

Anteriormente, la OMS había catalogado a este nuevo linaje como una “variante bajo seguimiento”, y si bien aún no alcanza la designación más alta de “variante preocupante”, sí escaló un nivel más y desde el organismo avisaron que amerita seguirla de cerca.

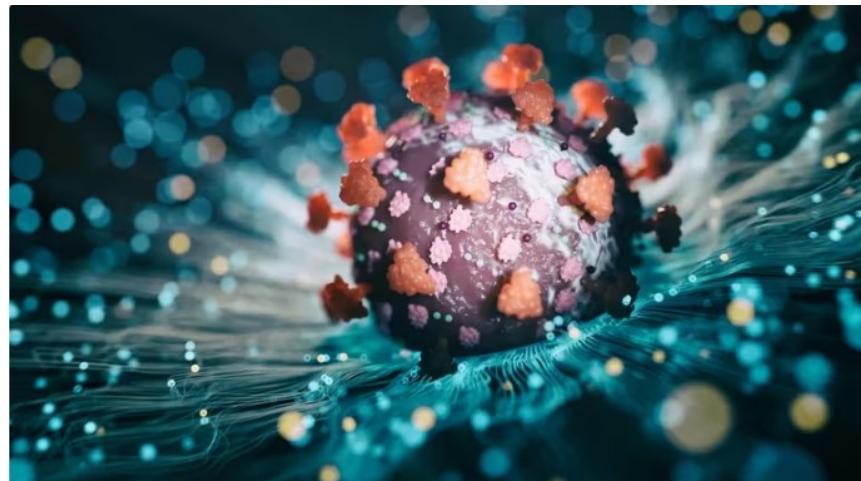
La prevalencia parece haberse triplicado en las últimas dos semanas, aunque a menudo se sobreestima el crecimiento de una variante en las primeras semanas después de que aparece en el seguimiento de los CDC.

Según publicó la doctora Maria Van Kerkhove, líder técnica de la OMS en COVID-19, en un video en las redes sociales, desde el organismo vieron “un aumento lento y constante en su detección en todo el mundo”. “Caracterizarla como una variante de interés realmente ayuda a promover la vigilancia de este tipo de variantes en todo el mundo, así como a estimular la investigación” para comprender si causan enfermedades más graves o son más evasivas para el sistema inmunológico, agregó.

La experta consideró que la cepa parece tener una ventaja de crecimiento sobre otras, pero no parece causar una enfermedad más grave.

“Cuando analizamos la gravedad, observamos cualquier cambio en las hospitalizaciones, así como en la presentación de la enfermedad, y no vemos eso para esta variante de interés particular y sus sublinajes”, reconoció Van Kerkhove.

La OMS publicó este mes una evaluación de riesgo de la cepa y encontró que “el riesgo para la salud pública que plantea BA.2.86 se considera actualmente bajo a nivel mundial”.



La OMS cree que el alto nivel de inmunidad de la población hace que sea “poco probable” que la aparición de la variante agregue una mayor carga a los sistemas nacionales de salud pública (Getty)

Debido al alto nivel de inmunidad de la población a través de infecciones y vacunas previas, es “poco probable” que la aparición de la variante agregue una mayor carga a los sistemas nacionales de salud pública, según analizaron desde el organismo.

Por qué la siguen de cerca

Meses después de su hallazgo, la BA.2.86, a la que algunos observadores de virus apodaron “Pirola”, está empezando a afianzarse.

La variante llamó la atención del mundo durante el verano del hemisferio norte

porque compartía muchas de las características que causaron que BA.1 -la cepa Ómicron original del coronavirus- se propagara a gran velocidad en noviembre de 2021 y provocara un aumento exponencial en las hospitalizaciones y muertes a nivel mundial.

Con más de 30 mutaciones en sus proteínas de pico, BA.2.86 era tan genéticamente distinta de las versiones anteriores del virus que los científicos temían que pudiera escapar por completo de la inmunidad de las vacunas y las infecciones y causara otra ola de contagios.

Sin embargo, BA.2.86 nunca despegó de la misma manera que lo hizo el primer Ómicron, y algunos estudios sugirieron que lo que sucedió fue que a medida que desarrolló todas sus nuevas mutaciones, esta variante

perdió parte de su capacidad de infectar las células, lo cual frenó su crecimiento.

Otros estudios encontraron que no evadía por completo la inmunidad del cuerpo y que la actual vacuna contra la COVID, que fue modificada para combatir la subvariante XBB.1.5, ofrecía cierta protección contra ella, lo cual fue recibido como una buena noticia.

Pese a todo esto, los expertos en variantes prefieren “moderar ese optimismo” y advirtieron que si BA.2.86 todavía está evolucionando, uno de sus descendientes podría recuperar suficiente aptitud para convertirse en una fuerza a tener en cuenta.



Desde la OMS instaron a seguir de cerca a la nueva variante (Europa Press)



La OMS declaró variante de interés a la cepa BA.2.86 del SARS-CoV-2 surgida en agosto pasado en los EEUU (Reuters)

Fuente: infobae. Disponible en <https://acortar.link/SZdiRV>

Finlay Vaccines Institute, more than three decades making history

Dec 3. The Finlay Vaccines Institute (IFV) is celebrating its anniversary and that of its Plant III on Sunday, with dreams fulfilled and others yet to come true in pursuit of improving the people's quality of life.

"I have great confidence in the productive capacity and quality of that plant since it is already the third one," Commander-in-Chief Fidel Castro said at the inauguration ceremony of that facility on December 3, 1993.

The IFV, a center for research, development, and production of vaccines, was founded in 1991, after a group of Cuban scientists presented a vaccine against meningitis (*Neisseria meningitidis*), whose trade name is VA-MENGOC-BC®.

The vaccine's introduction had a notable impact by eliminating the epidemic that affected children and adolescents mainly.

The institution was named, as a tribute, after the prominent Cuban scientist Dr. Carlos J. Finlay, who was born in Camagüey province. He proved that a biological agent that transmits yellow fever spreads the disease from a sick person to a healthy one. The production of the Soberana 02 and Soberana Plus vaccines and the vaccine candidate Soberana 01 to fight the COVID-19 pandemic stand out among the IFV's leading contributions over the last two years. Other vaccines have been developed to support the Institute's scientific value throughout its history.

IFV Deputy Director for Industrial Operations Roselyn Martínez told Prensa Latina that the scientific institution already has six production plants that can obtain polysaccharides through chemical synthesis and whole-cell components.

Fuente: Prensa Latina. Disponible en <https://acortar.link/kYJjbw>



La ONG sevillana África Arco Iris administra 8.500 vacunas contra la meningitis a niños de Costa de Marfil

3 dic. La ONG sevillana África Arco Iris administrará unas 8.500 vacunas contra la meningitis y la fiebre tifoidea a niños de hasta doce años de edad de Costa de Marfil. Con este propósito saldrá una expedición este domingo desde la capital andaluza dirección al citado país. Una iniciativa que comenzó en 2005 de la mano del Instituto Hispalense de Pediatría, con el doctor Alfonso Carmona, actual presidente del Colegio de Médicos, como uno de sus precursores.

El presidente de la ONG, Jesús Mejías, en declaraciones a Europa Press, remarca que en estas casi dos décadas han suministrado ya unas 960.000 dosis y que el objetivo es llegar al millón de vacunas.

El equipo de África Arco Iris, conformado por un reducido número de personas que viajan dos veces cada año desde España para esta labor solidaria, lleva a cabo esta campaña en colaboración estrecha con las autoridades de Costa Marfil, "siguiendo en todo momento las peticiones de las autoridades sanitarias del país".

Los menores, previa cumplimentación de su cartilla de vacunación, suelen ir saliendo "clase a clase" para recibir las dosis. En este sentido, las vacunas son vendidas y proporcionadas por el Ministerio de Costa de Marfil y los profesionales sanitarios que conforman este dispositivo son los encargados de ponerlas.

A pesar de la dilatada trayectoria de esta ONG en esta parte del continente africano, "no son pocas las dificultades que nos encontramos, ya que es un país con muchos inconvenientes", asegura el presidente de la entidad social, quien reconoce que, "en años difíciles de guerras, cuando nos hemos desplazado de punta a punta y de Norte a Sur, unos 600 kilómetros aproximadamente, han intentado robarnos. Por suerte, viajamos con policías que nos proporciona el Gobierno costamarfileño".

Mejías ha agradecido el apoyo prestado para la expedición por las Diputaciones de Córdoba y Sevilla, la Fundación Cajasol, los ayuntamientos de Dos hermanas, Alcalá de Guadaíra, Los Palacios y Lora del Río, así como el Parlamento de Andalucía y el citado Instituto Hispalense de Pediatría.

La ONG también impulsó la creación de un colegio en ese país africano con la ayuda de la Fundación Cajasol y la Diputación de Sevilla.



Un sanitario pone una vacuna a un menor de Costa de Marfil.- ÁFRICA ARCO IRIS

Fuente: epSevilla. Disponible en <https://acortar.link/Dmlkwh>

Vacunación por ultrasonidos, la solución al miedo a los pinchazos

4 dic. Investigadores de Oxford trabajan en este nuevo método, que además promete una mejor respuesta inmunitaria.

El miedo a las agujas (llamado técnicamente tripanofobia) no es tan residual como pensamos. La estimaciones más recientes apuntan a que afecta a entre el 20 y el 25% de los adultos. En el caso de los niños, este temor es más frecuente: afecta a 2 de cada 3. Esta limitación se puso especialmente de manifiesto con las recientes campañas de vacunación mundial frente a la covid, en las que se calculó que 1 de cada 10 personas no se habría inmunizado por esta causa.



Pero parece que la solución a este problema podría estar cerca, ya que investigadores de la Universidad de Oxford (Reino Unido) trabajan en un nuevo método de vacunación por ultrasonidos, aún en estudio, que podría sustituir a las agujas, consiguiendo además una mejor respuesta inmunitaria, según publican en la revista *Frontiers in Conservation Science*.

Darcy Dunn-Lawless, estudiante de doctorado del Instituto de Ingeniería Biomédica de la Universidad de Oxford, está investigando el potencial de esta administración de vacunas indolora y sin agujas mediante ultrasonidos, que también ha presentado en la conferencia dedicada a la ciencia y la ingeniería del sonido *Acoustics 2023 Sydney*. "Nuestro método se basa en un efecto acústico llamado cavitación, que consiste en la formación y estallido de burbujas en respuesta a una onda sonora", explica, según recoge Ep. Se trata de un procedimiento que lleva décadas usándose en medicina estética para eliminar la grasa localizada mediante el uso de ultrasonidos de baja frecuencia, que se aplican sobre la zona donde se concentra la grasa para disolver las células adiposas desde su interior.

Dunn-Lawless detalla el proceso en el artículo. "Nuestro objetivo es aprovechar las explosiones concentradas de energía mecánica producidas por el colapso de estas burbujas de tres formas principales. En primer lugar, para despejar los pasajes a través de la capa externa de células muertas de la piel y permitir el paso de las moléculas de la vacuna. En segundo lugar, para actuar como una bomba que impulsa las moléculas del fármaco hacia estos pasajes. Por último, para abrir las membranas que rodean a las propias células, ya que algunos tipos de vacuna deben introducirse en el interior de una célula para funcionar".

La piel mejor que los músculos

Aunque las pruebas iniciales *in vivo* revelaron que se administraban 700 veces menos moléculas de vacuna

con el método de cavitación que con la inyección convencional, este último produjo una mayor respuesta inmunitaria. Según la teoría de los investigadores, esto podría deberse a la piel, rica en inmunidad, a la que se dirige la administración ultrasónica, en contraste con los músculos que reciben la inyección. El resultado es una vacuna más eficiente que podría ayudar a reducir costes y aumentar la eficacia con poco riesgo de efectos secundarios.

Su método de cavitación puede ser especialmente útil para las vacunas de ADN, que actualmente son difíciles de administrar. Si la cavitación ayuda a abrir las membranas que bloquean el acceso terapéutico al núcleo celular, podrán aprovecharse mejor las demás ventajas de las vacunas de ADN, como la respuesta inmunitaria selectiva, el bajo riesgo de infección y la estabilidad en almacenamiento.

"En mi opinión, el principal efecto secundario potencial es universal a todas las técnicas físicas en medicina: si se aplica demasiada energía al cuerpo, se pueden dañar los tejidos -afirma Dunn-Lawless-. La exposición a una cavitación excesiva puede causar daños mecánicos en células y estructuras. Sin embargo, hay pruebas fehacientes de que estos daños pueden evitarse limitando la exposición, por lo que una parte clave de mi investigación es tratar de identificar plenamente dónde se encuentra este umbral de seguridad para la administración de vacunas".

Fuente: La Razón. Disponible en <https://acortar.link/xxBoAp>

Best-in-Class 24-Valent Pneumococcal Conjugate Vaccine Candidate Identified

Dec 5. Vaxcyte, Inc. today announced the publication of the results from the VAX-24 vaccine candidate's pneumococcal disease (PD) proof-of-concept study in the journal *The Lancet Infectious Diseases*.

This phase 1/2 clinical trial evaluated the safety, tolerability, and immunogenicity of Vaxcyte's investigational 24-valent, carrier-sparing pneumococcal conjugate vaccine (PCV) compared to the current standard-of-care, Prevnar 20® (PCV20, APEXXNAR), for the prevention of invasive pneumococcal disease (IPD) in healthy adults.

The study results showed that VAX-24 demonstrated a safety and tolerability profile comparable to PCV20 at all doses studied and an immunogenicity profile that met or exceeded established regulatory immunogenicity standards for all 24 serotypes at the conventional 2.2 mcg dose.

"The results from the proof-of-concept study provided the first look at the safety and immunogenicity profile of VAX-24 in adults, giving us confidence in the 2.2 mcg dose we plan to advance into Phase 3," said Dr. Jakub Simon, Chief Medical Officer of Vaxcyte, in a press release on December 4, 2023.

"We look forward to initiating our Phase 3 pivotal, non-inferiority study, designed to further establish the clinical potential of VAX-24, and announcing topline data, which we expect in 2025."

PD is an infection caused by *Streptococcus pneumoniae* bacteria, says the U.S. CDC.

It can result in IPD, including meningitis and bacteremia, and non-invasive PD, including pneumonia, otitis media, and sinusitis.

People can get pneumococcal disease more than once. A previous pneumococcal infection will not protect you from future infection.

Therefore, CDC recommends pneumococcal vaccination even if someone has had pneumococcal disease in the past.

In the United States, approximately 320,000 people get pneumococcal pneumonia each year, which is estimated to result in about 150,000 hospitalizations and 5,000 deaths.

Pneumococci also cause over 50% of all cases of bacterial meningitis in the U.S.

As of December 2023, several approved pneumococcal vaccines are available at clinics and pharmacies in the U.S.

Fuente: Precisión Vaccinations. Disponible en <https://acortar.link/pMJAIP>

Moderna y Pfizer entregan a la Cofepris la información faltante para el permiso de comercialización de sus vacunas contra la COVID-19

5 dic. La Comisión Federal para la Protección Contra Riesgos Sanitarios (Cofepris) informó este martes que ya recibió la información faltante de Moderna y Pfizer para el permiso de comercialización de sus respectivas vacunas contra la COVID-19.

Pfizer ingresó la información de su vacuna Comirnaty, mientras que Moderna, a través de Asofarma, lo hizo con la de la monovalente Spikevax.



Foto: Cuartoscuro

La dependencia sanitaria señaló que estima emitir una resolución en los próximos días.

El pasado 22 de noviembre, la Cofepris señaló que el 29 de noviembre se daría conocer una resolución definitiva sobre las empresas que podrán comercializar vacunas para la COVID-19; sin embargo, al llegar el día de la presentación de la resolución, el órgano indicó que las empresas requerían más tiempo para solventar la información técnica faltante.

“Las empresas solicitantes Pfizer, para la vacuna Comirnaty, y ModernaTx. Inc., para la vacuna Spikevax monovalente, requirieron mayor tiempo para solventar los elementos e información técnica faltante en el expediente que ingresaron para obtener el registro sanitario”, precisó la Cofepris en un comunicado.

En octubre, la dependencia informó que ya había recibido las solicitudes de empresas farmacéuticas para obtener le registro de cuatro vacunas contra la Covid, entre ellas Comirnaty, Vaxzevria y Spikevax.

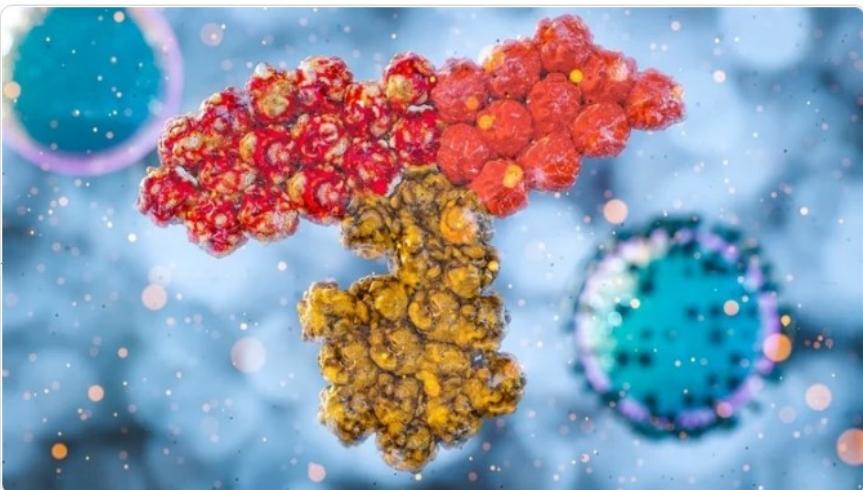
La convocatoria para la comercialización de dichas vacunas se lanzó el pasado 22 de septiembre.

La comisión también había señalado que Comirnaty de Pfizer iba a ser la primera vacuna en ser evaluada por el Comité de Moléculas Nuevas (CMN).

Fuente: LATINUS. Disponible en <https://acortar.link/yo6g0h>

Repeated mRNA vaccines supercharge immune response against COVID-19, study finds

Dec 7. In a recent study published in the journal *Nature Immunology*, researchers investigated how repeated mRNA vaccinations improve COVID-19 immunity in SARS-CoV-2-naïve and priorly infected individuals. Focusing on the latter cohort, the study evaluated the diversity and concertation in tandem with multiple sequencing analyses of immune cells isolated from the patient's peripheral blood mononuclear cells. Study findings reveal that sequential vaccination promotes heterogeneous immune cell clonal expansions, with the third mRNA vaccination resulting in almost two times the number of clones as the first vaccination dose.



Study: Repeated mRNA vaccination sequentially boosts SARS-CoV-2-specific CD8+ T cells in persons with previous COVID-19.

Image Credit: CI Photos / Shutterstock

Parallelly, populations of CD8+ T cells substantially increase, thereby better preparing an individual's immune system to cope with multiple COVID-19 strains. Surprisingly, the presence and severity of COVID-19 infection were directly associated with post-vaccination immunity.

Does infection prevent infection?

First, a disclaimer – under no circumstances are the authors of the publication or the author of this article recommending that you allow yourself to become infected with the severe acute respiratory syndrome coronavirus 2

(SARS-CoV-2) as a means of improving your future immunity against the Coronavirus disease 2019 (COVID-19) pandemic. However, a number of previous studies have established the improved anti-COVID-19 capabilities of 'hybrid immunity.' Hybrid immunity arises from the combined effects of both a previous COVID-19 infection and vaccination, which have been consistently found to confer better protection than either alone.

Two main mechanisms for this improved observed immunity have been proposed – an increase in the abundance and diversity of virus-specific memory T (Tm) cells and an increased diversity of spike (S) proteins in the Tm cell pool. Hitherto, however, these hypotheses have never been scientifically tested. Understanding the mechanisms underpinning observed immune responses to COVID-19 in hybrid individuals may allow for improved and personalized vaccination regimes, thereby improving global resistance against the pandemic, which has hitherto infected more than 770 million individuals and cost humanity almost 7 million lives.

About the study

In the present study, researchers used peripheral blood mononuclear cells (PBMCs) to identify and quantify the variations in T and B cell populations across individuals exposed to multiple vaccination doses in tandem with COVID-19 infections of varying severity. They then focused their efforts on evaluating the kinetics and diversity of T spike (Ts) cells, thereby verifying both proposed hypothesized mechanisms underpinning previously observed immunity improvements.

The study cohort comprised 54 (28 female) self-reported COVID-19 survivors recruited from Seattle, USA,

between April and August 2020. All participants had their demographic and medical data recorded and were subjected to convalescent plasma donation for PBMC isolation. The cohort consisted of 35 individuals with mild to moderate COVID-19, 19 with severe illness (hospital and oxygen support required), and eight with critical COVID-19 (intensive care unit [ICU] admission required).

Participants ranged from 31 to 74 years of age, with 60.3 presenting the median value. Participants presented a diverse array of comorbidities, including cancer ($n = 8$), renal disease ($n = 4$), heart ailments ($n = 9$), hypertension ($n = 9$), and diabetes ($n = 9$).

From preserved PCMBs, selective staining was used to identify and isolate live CD3+ single cells, single positive CD4–CD8+, and CD4+CD8–, excluding all double positive and negative CD cells from further experiments. Gating and Boolean analyses with PBMC stimulation were used to identify and study AIM assay combinations of antigen-specific (in this case, SARS-CoV-2 Wu-1 strain) T-cell frequency.

Intracellular cytokine staining (ICS) was used to identify and quantify the production of cytokines following SARS-CoV-2 stimulation. Genomic DNA isolated from PBMCs was used for T-cell Receptor Sequencing (TCR-Seq), a method used to identify and track specific T cells and their clones. TCR-Seq was carried out independently for bulk repertoire analyses (bulk TCR-Seq) and antibody feature barcode library generation (single-cell TCR-Seq).

The library generated above was used for CD4+ and CD8+ assignments using unique molecular identifier (UMI) counts. SARS-CoV-2 Wu-1 strain-transfected Cos-7 cells were used to evaluate the specificity of assigned CD8+ T cells.

Finally, next-generation Human Leukocyte Antigen (HLA) Typing was carried out to identify class 1 and class 2 allotypes.

Study findings

Results from the above tests revealed divergent vaccine response kinetics, both between CD4+ and CD8+ TS cells and between individuals with differing COVID-19 disease severity. “In persons with previous SARS-CoV-2 infection, mRNA vaccines induced profound, albeit variable, expansion of preexisting circulating TM cell clones.” These results were amplified based on the number of mRNA vaccines received following COVID-19 disease, with the first two vaccine doses observed to augment S-reactive clonotypic diversity in the blood, resulting in substantial expansion in CD8+ TS clonotypes.

A similar expansion in CD8+ TS clonotypes has been reported in COVID-19-naïve individuals following their first vaccination dose, albeit to a much lower extent. This study further revealed that while not as substantial as CD8+ TS clonotype expansion, CD4+ clonotypes also expanded following the second vaccination dose.

Fuente: News Medical Life Sciences. Disponible en <https://acortar.link/UYY3qD>

Vaccine Manufacturing in Africa Receives Up to \$1B in Support

Dec 8. The board of Gavi, the Vaccine Alliance approved the establishment of the African Vaccine Manufacturing Accelerator (AVMA), a financing mechanism that will make up to \$1 billion available to support a sustainable vaccine manufacturing industry in Africa. The goal for that industry is to make it capable of addressing future pandemics, outbreaks, and other health emergencies as well as the health of global vaccine markets.

The Gavi decision was made after months of collaboration with the African Union and the Africa Centers for Disease Control and Prevention (Africa CDC).

Targeting clear and unmet needs

Gavi is one of the largest purchasers of vaccines in the world. AVMA aims to make up to \$1 billion available to manufacturers at critical moments in the development process as a way of helping offset high start-up costs and provide assurance of demand. By focusing on “priority” antigens, product profiles, and vaccine platforms, as well as constructing clear incentives for both “fill and finish” and drug substance production, AVMA says it will support global vaccine markets by targeting clear unmet needs and help establish a thriving, sustainable, end-to-end African vaccine manufacturing ecosystem.

Two years ago, the African Union Heads of States and Governments established The Partnerships for African Vaccine Manufacturing (PAVM) under the Africa CDC to deliver the goal of enabling the African vaccine manufacturing industry to develop, produce, and supply over 60% of the total vaccine doses required on the continent by 2040, up from less than one percent today (with interim goals of 10% by 2025 and 30% by 2030).

Since then, several vaccine manufacturing projects have been taking shape with others coming up, all of which with the objective of guaranteeing self-reliance of Africa should any health emergency or outbreak hit the continent, according to Jean Kaseya, MD, director of Africa CDC.

“[This] is a significant moment for Africa by establishing the African Vaccine Manufacturing Accelerator. The targeted \$1 billion from GAVI to African manufacturers is a game changer for the continent and advances our efforts towards vaccine self-reliance. Africa CDC remains determined that Africa should produce its own

vaccine and protect the lives of all Africans,” he said. “GAVI has been an incredible partner in this, we will continue to advance together on this journey of self-reliance. Together, we are united with a mission for vaccine equity.”

“We are grateful for the incredible close collaboration with the African Union and Africa CDC in support of our shared vision of a thriving, sustainable African vaccine ecosystem” added David Marlow, Interim CEO, Gavi, the Vaccine Alliance. “AVMA is an important step forward, sending a powerful signal that GAVI is serious about its efforts to support this vital initiative.”



A lab worker at Atlantic Lifesciences in Ghana.

[Gavi/Svetlomir Slavchev]



Africa CDC recently launched the Trusted Health Initiative to revolutionize digital health in Africa. [Africa CDC]

Fuente: GEN Genetic Engineering & Biotechnology News . Disponible en <https://acortar.link/B2alh5>

El Gobierno de México aprueba la venta de las vacunas de Moderna y de Pfizer contra COVID-19

8 dic. El Gobierno de México aprobó la venta de vacunas contra la COVID-19 fabricadas por las empresas Moderna y Pfizer, un hecho que marca un giro respecto de la política seguida por el país hasta ahora.

Desde que las primeras vacunas contra el covid-19 llegaron a México en diciembre de 2020, las sustancias para prevenir la enfermedad han estado resguardadas y controladas por las autoridades gubernamentales y su comercialización estaba prohibida.

Ahora, la Comisión Federal para la Protección contra Riesgos Sanitarios (Cofepris) informó este jueves en un comunicado que otorgó la autorización para la venta de las vacunas Spikevax, elaborada por Moderna, y Comirnaty, de Pfizer.

“La dictaminación simultánea para expedir registro sanitario a vacunas contra COVID-19, permitiendo su comercialización en México, sienta precedente hacia una regulación enfocada en garantizar el acceso sin beneficiar a ningún usuario en particular, y eliminando cualquier necesidad de intermediario o gestor”, dijo la Cofepris.

El organismo también señaló que el suministro de las vacunas “debe ser bajo vigilancia médica y no se deberá aplicar de manera indiscriminada, ya que pueden representar riesgos para la salud”.

Las autoridades mexicanas no dijeron cuál será el precio aproximado de las vacunas.

En Estados Unidos, el precio de la vacuna de Moderna en el sector privado es de US\$ 128; el de la vacuna de Pfizer es de US\$ 115, de acuerdo con los registros de los Centros para la Prevención y el Control de Enfermedades (CDC, por sus siglas en inglés).

La autorización a la venta de estas vacunas se da a casi siete meses de que el Gobierno de México declaró el fin de la emergencia sanitaria por COVID-19, que se extendió de marzo de 2020 a mayo de 2023.

Durante ese periodo, COVID-19 causó 7,6 millones de contagios en México y 334.336 fallecimientos, de acuerdo con las cifras oficiales.

Fuente: CNN en español. Disponible en <https://acortar.link/BhDpmA>

New COVID vaccines targeting Omicron subvariant XBB 1.5 are now available in Australia

Dec 10. New COVID booster shots are now available in Australia. And as cases rise ahead of the holiday period yet again, experts say the latest vaccine will help protect against the subvariants currently spreading around the country.

What is the latest COVID-19 vaccine?

The new generation of boosters are called "monovalent Omicron XBB 1.5 vaccines".

"Monovalent" means they contain just one strain of COVID-19, making them a bit different to the "bivalent" vaccines we already had on the market.

They are designed to target the Omicron subvariant XBB 1.5, which you might remember by its unofficial nickname, the "Kraken".

Three versions are available in Australia:

- ◆ One for people over the age of 12 from Pfizer.
- ◆ One for children aged between five and 12 from Pfizer.
- ◆ One for people over the age of 12 from Moderna.

Novavax has also developed an XBB.1.5 vaccine, but it is not approved for use in Australia.

All adults can get the new vaccine if it's been more than six months since their last booster shot or COVID illness.



The new vaccine was modelled on the "Kraken" strain, but still provides protection against other variants.

(Pexels: Maksim Goncharenok)

However, Australia's leading vaccine advisory group, ATAGI, only recommends it for certain groups.

If you're over 65 or have underlying health conditions and haven't had a 2023 booster yet, it's strongly recommended that you get one.

If you're 75 or above, ATAGI says you should get the new vaccine even if you have already had a booster shot this year.

The new vaccine could also be beneficial as a second 2023 booster if you live in residential aged care, have never had COVID before, or have complex medical conditions, ATAGI says.

For everyone else between the ages of 18 and 65, ATAGI says you can "consider" a 2023 booster shot.

Clinical epidemiologist Nancy Baxter says if you're in this age group and haven't gotten a COVID-19 jab in the past 12 months, it's worth looking at the latest monovalent vaccines.

"What we want to make sure is that when we face COVID, we're as protected as we can be," she said.

ATAGI does not recommend that anyone aged 17 or under get booster shots unless they have a medical condition which increases the risk of severe COVID-19.

For babies, toddlers and the youngest children, only one COVID-19 vaccine is available: the original jab from Pfizer, designed for those aged between six months and five years.

Extra booster shots are not recommended for this young age group, so speak to a doctor if you have any concerns.

Is the new Omicron vaccine better than the others?

COVID-19 vaccines are always a little bit behind the curve: in the time it takes companies to develop new shots, the virus mutates into something different.

Older vaccines still greatly reduce your risk of getting gravely ill or dying from a COVID-19 infection, but are not as effective at reducing transmission.

And while the XBB 1.5 "Kraken" variant isn't dominating cases in Australia anymore, experts like Dr McMullen say the vaccines it inspired will help protect against other Omicron strains.

"The new XBB vaccines recently approved by ATAGI are better targeted to the strains currently circulating in

Australia and provide a modest improvement in immunity compared to previous vaccines," Dr McMullen said. ATAGI says available data suggests "monovalent XBB vaccines provide modestly enhanced protection from severe disease compared to older vaccines".

A recent American study found the monovalent vaccine boosted protective antibodies against not only XBB.1.5 and the currently dominant EG.5.1 (known as "Eris"), but also other new sub-variants like HV.1, HK.3, JD.1.1, and JN.1.

The research, which assessed antibody levels in blood samples from 60 patients, has not been peer-reviewed yet — but overall, it means the new vaccines are promising.

Fuente: ABC News. Disponible en <https://acortar.link/GGVZHQ>



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Patentes registradas en Patentscope

Estrategia de búsqueda: *Vaccine* in the title or abstract AND 20231201:20231210 as the publication date 43 records

1.[20230390384](#) RECOMBINANT COVID-19 VACCINE COMPOSITION COMPRISING LIPOPEPTIDE AND POLY (I:C) ADJUVANT, AND USE THEREOF
US - 07.12.2023

Clasificación Internacional [A61K 39/215](#) N° de solicitud 18035884 Solicitante CHA VACCINE RESEARCH INSTITUTE CO., LTD Inventor/a Jung Sun Yum

The present invention relates to a recombinant COVID-19 vaccine composition comprising a lipopeptide and a poly(I:C) adjuvant. The vaccine composition for preventing or treating COVID-19, provided in one aspect of the present invention, can greatly induce both a humoral immune response and a cellular

immune response to a recombinant COVID-19 antigen, and thus can be developed as a COVID-19 vaccine so as to be commercially and effectively usable.

2.[WO/2023/234407](#) ORAL VACCINE COMPOSITION

WO - 07.12.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/JP2023/020590 Solicitante KAICO LTD.

Inventor/a YAMATO Kenta

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

3.[20230390376](#) VACCINE FOR PROTECTION AGAINST STREPTOCOCCUS SUIS

US - 07.12.2023

Clasificación Internacional [A61K 39/09](#) N° de solicitud 18453684 Solicitante Intervet Inc. Inventor/a

Antonius Arnoldus Christiaan Jacobs

The present invention pertains to a vaccine comprising an immunologically effective amount of an IgM protease antigen of *Streptococcus suis*, for use in a method for protecting pigs against a pathogenic infection with *Streptococcus suis* by administering the vaccine only once, wherein the vaccine comprises at most 120 µg per dose of the antigen.

4.[4284830](#) IMPFSTOFFZUSAMMENSETZUNG ZUM BRECHEN VON SELBSTTOLERANZ

EP - 06.12.2023

Clasificación Internacional [C07K 16/24](#) N° de solicitud 22703598 Solicitante BAYER ANIMAL HEALTH GMBH Inventor/a ILG THOMAS

The present invention relates to a vaccine composition for breaking self-tolerance against a self-protein of a host, in particular for breaking self-tolerance against endogenous cytokines in an animal host. The vaccine composition of the invention contains a polyprotein, a DNA encoding for the polyprotein and/or an RNA encoding for the polyprotein and one or more immunostimulatory oligonucleotides. The polyprotein comprises at least two self-protein segments of the host and one or more T-cell epitopes of non-host origin in between and/or adjacent to the at least two self-protein segments. The present invention further concerns the use of the vaccine composition for the prevention and/or treatment of diseases including the prevention and/or treatment of a pruritic condition and/or an allergic condition. In another aspect, the present invention provides a method for detecting the presence of autoantibodies against self-proteins that can be generated with the vaccine composition of the invention.

5.[4284831](#) IMPFSTOFFZUSAMMENSETZUNG ZUM BRECHEN VON SELBSTTOLERANZ

EP - 06.12.2023

Clasificación Internacional [C07K 16/24](#) N° de solicitud 22703599 Solicitante BAYER ANIMAL HEALTH GMBH Inventor/a ILG THOMAS

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

provides a method for detecting the presence of autoantibodies against self-proteins that can be generated with the vaccine composition of the invention.

6.[4286510](#) ORALER IMPFSTOFF GEGEN CORONAVIRUS-INFektion

EP - 06.12.2023

Clasificación Internacional [C12N 1/21](#) Nº de solicitud 22745867 Solicitante UNIV KOBE NAT UNIV CORP Inventor/a SHIRAKAWA TOSHIRO

Provided is an orally administrable vaccine against a coronavirus infectious disease. A transformed Bifidobacterium designed to display a part or a whole of a constituent protein of a coronavirus on a surface of the Bifidobacterium enables the provision of the orally administrable vaccine against a coronavirus infectious disease. The transformed Bifidobacterium designed to display a part or a whole of a constituent protein of a coronavirus on a surface of the Bifidobacterium can induce humoral immunity and cellular immunity through oral administration to suppress an increase in severity of pneumonia or the like even after viral infection.

7.[4284424](#) IMPFSTOFFZUSAMMENSETZUNGEN

EP - 06.12.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud 22702778 Solicitante UNIV OXFORD INNOVATION LTD Inventor/a CARLISLE ROBERT

The invention describes vaccine compositions containing particles having a polypeptide shell and a water-immiscible core. The polypeptide shell may comprise one or more pathogenic antigen proteins and/or one or more adjuvant polypeptides. Administration of the composition generates an immune response to the polypeptide contained in the shell. Adjuvant may be comprised in the water-immiscible core of the particle. The particles are therefore useful in methods of vaccination.

8.[WO/2023/232901](#) CLOSTRIDIUM DIFFICILE VACCINE

WO - 07.12.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud PCT/EP2023/064602 Solicitante VALNEVA AUSTRIA GMBH Inventor/a LUNDBERG, Urban

The present invention relates to a lipidated immunogenic Clostridium difficile toxin A and toxin B polypeptide, a pharmaceutical composition comprising the immunogenic Clostridium difficile toxin A and/or toxin B polypeptide for use as a medicament, particularly a vaccine and/or for use in a method for the prevention or treatment of C. difficile infection and/or C. difficile-associated disease.

9.[WO/2023/235303](#) VACCINE COMPOSITIONS AND USES THEREOF

WO - 07.12.2023

Clasificación Internacional [A61K 47/69](#) Nº de solicitud PCT/US2023/023846 Solicitante THE REGENTS OF THE UNIVERSITY OF MICHIGAN Inventor/a CHENG, Wei

Provided herein are vaccine compositions and uses thereof. In particular, provided herein are synthetic viral-like structures (sVLSs) based vaccines and the use of such vaccines to prevent infection by a pathogen (e.g., viral pathogen).

10.[WO/2023/231250](#) BOVINE PASTEURELLA MULTOCIDA CAPSULAR TYPE A CAPSULAR

POLYSACCHARIDE VACCINE AND PREPARATION METHOD THEREFOR

WO - 07.12.2023

Clasificación Internacional [A61K 39/102](#) Nº de solicitud PCT/CN2022/121942 Solicitante JINYUBAOLING BIO-PHARMACEUTICAL CO., LTD. Inventor/a JIN, Yilan

Disclosed are a bovine Pasteurella multocida capsular type A capsular polysaccharide vaccine and a preparation method therefor, and belongs to the technical field of veterinary vaccines. The capsular polysaccharide vaccine provided is prepared from bovine Pasteurella multocida capsular type A capsular

polysaccharide and a vaccine adjuvant made from raw materials including refined Span-80 and refined Tween-80. The capsular polysaccharide vaccine can effectively prevent and control bovine cellulose suppurative pneumonia caused by A-type Pm, has good safety, and can be used for providing a safe and effective protection effect for healthy and susceptible calves, healthy pregnant cows and healthy milk cows.

11. [WO/2023/234300](#) MODIFIED VACCINE DESIGN DEVELOPMENTS

WO - 07.12.2023

Clasificación Internacional [C12N 15/44](#) Nº de solicitud PCT/JP2023/020111 Solicitante VLP

THERAPEUTICS JAPAN, INC. Inventor/a AKAHATA, Wataru

Provided herein is an isolated polynucleotide, which encodes a polypeptide comprising an antigen protein fused to a signal sequence and a transmembrane domain, and optionally to ferritin. Also provided herein is an isolated polynucleotide, which encodes alphavirus non-structural proteins nsp1, nsp2, nsp3 and nsp4 and a polypeptide comprising an antigen protein fused to a signal sequence and a transmembrane domain, and optionally to ferritin. The antigen may be influenza. The polynucleotide such as RNA is useful as a vaccine against influenza infection.

12. [20230391833](#) MODIFIED VACCINE DESIGN DEVELOPMENTS

US - 07.12.2023

Clasificación Internacional [C07K 14/005](#) Nº de solicitud 18325281 Solicitante VLP Therapeutics Japan, INC. Inventor/a Wataru AKAHATA

Provided herein is an isolated polynucleotide, which encodes a polypeptide comprising an antigen protein fused to a signal sequence and a transmembrane domain, and optionally to ferritin. Also provided herein is an isolated polynucleotide, which encodes alphavirus non-structural proteins nsp1, nsp2, nsp3 and nsp4 and a polypeptide comprising an antigen protein fused to a signal sequence and a transmembrane domain, and optionally to ferritin. The antigen may be influenza. The polynucleotide such as RNA is useful as a vaccine against influenza infection.

13. [4284832](#) ANTIGENE POLYPEPTIDE AUS CHLAMYDIA TRACHOMATIS UND DEREN

VERWENDUNG FÜR IMPFSTOFFE

EP - 06.12.2023

Clasificación Internacional [C07K 16/28](#) Nº de solicitud 22703597 Solicitante INST NAT SANTE RECH MED Inventor/a LEVY YVES

Chlamydiae are intracellular bacterial pathogens responsible for a variety of infections. The inventors have set up candidate vaccines against *Chlamydia trachomatis*. In particular, the inventors have identified specific epitopes to be included in vaccine candidates thanks to *in silico* analysis of the amino-acid sequence of these proteins to map predicted MHC-I and -II epitopes by online software (NetMHC-4.0 and NetMHCII-2.3) and peptide binding prediction software. B cell epitopes were also mapped using online software (BepiPred-2.0 and Discotope). Finally, the inventors have generated some specific CD40 or Langerin antibodies comprising one or more identified epitope(s) of the present invention and that are suitable for vaccine purposes. Therefore, the present invention relates to *Chlamydia trachomatis* (*Ct*) antigenic polypeptides and uses thereof for vaccine purposes.

14. [20230390389](#) Nucleic Acid Vaccine Composition Comprising a Lipid Formulation, and Method of Increasing the Potency of Nucleic Acid Vaccines

US - 07.12.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 18235432 Solicitante The Government of the United States, as Represented by the Secretary of the Army Inventor/a Jay W. HOOPER

A nucleic acid vaccine composition comprising one or more of a plasmid-based nucleic acid vaccine and immunotherapy, as well as a lipid formulation, is provided. In addition, the present invention provides a

method of enhancing the potency of plasmid-based DNA vaccines and immunotherapies, by formulating a vaccine and/or immunotherapy in a lipid formulation, which is stable when refrigerated or stored frozen, is then delivered to a vaccinee by either needle/syringe, jet injection, or microneedles. The lipid formulation of the present invention comprises one or more lipid excipients selected from 1,2-Distearoyl-sn-glycero-3-phosphocholine, Cholest-5-en-3 β -ol, 1,2-Dimyristoyl-rac-glycero-3-methylpolyoxyethylene, and/or more symmetric ionizable cationic lipids. The present invention increases vaccine potency dramatically. It was unexpectedly discovered that the level of immunogen, or immune response molecules, produced in vivo is increased (versus administering merely the vaccine or immunotherapy) and, in the case of a vaccine immunogen, the immune response is enhanced.

15. [WO/2023/231333](#) WATER-IN-OIL ADJUVANT FOR POULTRY ANIMAL VACCINE, PREPARATION METHOD THEREFOR AND USE THEREOF

WO - 07.12.2023

Clasificación Internacional [A61K 39/39](#) N° de solicitud PCT/CN2022/134909 Solicitante JINYUBAOLING BIO-PHARMACEUTICAL CO., LTD. Inventor/a LI, Xiaoyan

Provided are a water-in-oil adjuvant for a poultry animal vaccine, a preparation method therefor and use thereof, which belong to the technical field of animal vaccines in the category of biological products. Raw materials of the water-in-oil adjuvant provided herein comprise, by weight in percentage: 85 wt%-90 wt% of oil for injection, 5 wt%-10 wt% of refined Span 80 and 1 wt%-5 wt% of refined Tween 80, and can further comprise 0.1 wt%-1 wt % of an immunostimulatory complex. A vaccine prepared by using the water-in-oil adjuvant provided herein is stable in quality and high in safety, and can induce a body to generate a longer-duration and more efficient immunoreaction, so that the water-in-oil adjuvant can be used as a safe and effective adjuvant for a poultry animal vaccine and the like.

16. [4284827](#) ANTIVIRALES THERAPEUTIKUM

EP - 06.12.2023

Clasificación Internacional [C07K 16/08](#) N° de solicitud 22703040 Solicitante UNIV COLLEGE CARDIFF CONSULTANTS LTD Inventor/a STANTON RICHARD

The invention relates to an anti-viral composition comprising at least one, and ideally a plurality of, monoclonal antibodies, or fragments thereof; an immunogenic agent, vaccine or pharmaceutical composition comprising the afore anti-viral composition; said anti-viral composition, immunogenic agent, vaccine or said pharmaceutical composition for use in the treatment of or prevention of a viral infection; use of said anti-viral composition in the manufacture of a medicament to treat or prevent a viral infection; a combination therapeutic for use in the treatment or prevention of a viral infection comprising said anti-viral composition, immunogenic agent, vaccine or pharmaceutical composition in combination with at least one other therapeutic agent; and a method of treating or preventing a viral infection comprising administering said anti-viral composition, immunogenic agent, vaccine or said pharmaceutical composition to an individual having, or suspected of having, a viral infection.

17. [4284423](#) IMPFSTOFF

EP - 06.12.2023

Clasificación Internacional [A61K 39/02](#) N° de solicitud 21885518 Solicitante YAHALOMI EREZ Inventor/a YAHALOMI EREZ

Methods and systems and architecture for producing cells, virus and bacteria of different sizes and structures by parameters control of temperature or humidity. While these parameters can be constant or time dependent. Said systems may comprising heating elements such as electric heaters and steam generated in boilers, incubating chambers and cooling elements such as cooling towers or ammonia refrigerants.

18. [WO/2023/232807](#) IMMUNOGENIC COMPOSITION

WO - 07.12.2023

Clasificación Internacional [A61K 39/095](#) Nº de solicitud PCT/EP2023/064439 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a MARCELLI, Agnese

The present invention relates to an immunogenic composition against *N. meningitidis* serogroup B in liquid form, and to a reconstituted vaccine against *N. meningitidis* serogroups A, B, C, W135, and Y comprising the liquid composition. Kits and methods for the prevention and treatment of meningococcal infection and disease with the immunogenic composition or the reconstituted vaccine are also provided.

19. [WO/2023/232815](#) IMMUNOGENIC COMPOSITION

WO - 07.12.2023

Clasificación Internacional [A61K 39/095](#) Nº de solicitud PCT/EP2023/064448 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a MARCELLI, Agnese

The present invention relates to an improved immunogenic composition against *N. meningitidis* serogroups A, C, W135 and Y in solid form, and to a reconstituted vaccine against *N. meningitidis* serogroups A, B, C, W135, Y obtained by reconstitution with a liquid immunogenic composition of Men B antigens. Kits and methods for the prevention and treatment of meningococcal infection and disease with the immunogenic composition or the reconstituted vaccine are also provided.

20. [WO/2023/235749](#) RNA ADJUVANTS, METHODS AND USES THEREOF

WO - 07.12.2023

Clasificación Internacional [A61K 39/02](#) Nº de solicitud PCT/US2023/067691 Solicitante FLAG BIO, INC. Inventor/a ANDRIANOVA, Ekaterina L.

Provided herein are adjuvants, compositions, and methods for the prevention and treatment of infectious diseases and cancer. Various toll-like receptor (TLR) agonists and RNA encoding TLR agonists are provided herein. The adjuvants provided herein can be complexed with a carrier or formulated with a delivery vehicle for administration to a subject. Further provided are adjuvants that can be delivered with vaccine compositions or as part of a vaccine composition to enhance the innate immune response in a subject.

21. [4284421](#) TRANSDERMALER IMPFSTOFF

EP - 06.12.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 22702777 Solicitante UNIV OXFORD INNOVATION LTD Inventor/a HETTINGA JOHANNA

The invention describes transdermal vaccines which contain ultrasound responsive particles comprising a polypeptide shell. The surface of the particle has one or more indentations which are generally able to entrap a gas bubble. The particles are capable of generating inertial cavitation on exposure to ultrasound. The particles can be delivered transdermally, and can comprise antigen protein and/or adjuvant within the particle structure. The particles are therefore useful in methods of vaccination using transdermal delivery routes.

22. [4286002](#) CANINE PARVOVIRUS (CPV)-ÄHNLICHE PARTIKELIMPFSTOFFE UND VERWENDUNGEN DAVON

EP - 06.12.2023

Clasificación Internacional [A61P 31/20](#) Nº de solicitud 23190361 Solicitante BOEHRINGER INGELHEIM ANIMAL HEALTH USA INC Inventor/a DAVID FREDERIC

The present invention encompasses canine parvovirus (CPV) vaccines or compositions. The vaccine or composition may be a vaccine or composition containing CPV virus-like particle (VLP), and a preparation method and a use thereof. The CPV VLPs provided by the invention are formed by the CPV VP₂ protein. Further, the invention broadly encompasses vaccines comprising combinations of MLV and VLP, which are capable of overcoming MDA against a variety of pathogens, which infect a variety of different species.

23. [20230390414](#) PARTICLE BASED FORMULATION OF SARS-COV-2 RECEPTOR BINDING DOMAIN
US - 07.12.2023

Clasificación Internacional [A61K 47/69](#) N° de solicitud 18247235 Solicitante The Research Foundation for The State University of New York Inventor/a Jonathan Lovell

Provided are vaccine compositions and methods for generation of immune response (including neutralizing antibodies) against SARS-CoV-2 virus. The vaccine compositions comprise a poly-histidine tagged receptor binding domain (RBD) of the SARS-CoV-2 virus incorporated into a liposome comprising cobalt-porphyrin-phospholipid conjugates, such that one or more histidines of the polyhistidine tag are coordinated to the cobalt of the cobalt-porphyrin and at least a portion of the RBD is exposed to the outside of the liposome.

24. [20230390379](#) RESPIRATORY SYNCYTIAL VIRUS VACCINE

US - 07.12.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud 18314980 Solicitante ModernaTX, Inc. Inventor/a Giuseppe Ciaramella

The disclosure relates to respiratory syncytial virus (RSV) ribonucleic acid (RNA) vaccines, as well as methods of using the vaccines and compositions comprising the vaccines.

25. [20230391834](#) WW-DOMAIN-ACTIVATED EXTRACELLULAR VESICLES TARGETING CORONAVIRUSES

US - 07.12.2023

Clasificación Internacional [C07K 14/165](#) N° de solicitud 18032134 Solicitante President and Fellows of Harvard College Inventor/a Quan Lu

Disclosed herein are methods, systems, compositions and strategies for the creation and use WW-domain-Activated Extracellular Vesicles, or WAEVs for presenting SARS-CoV-2 antigen domains, for example the SARS-CoV-2 M protein, the SARS-CoV-2 E protein, or the SARS-CoV-2 S protein. These WAEVs can be harnessed to deliver and present SARS-CoV-2 antigens useful for vaccine development.

26. [20230390370](#) NEOANTIGEN VACCINES FOR PANCREATIC CANCER

US - 07.12.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 18328209 Solicitante William Gillanders Inventor/a William Gillanders

The present disclosure is directed to compositions and methods for treating pancreatic cancer. A method of treating pancreatic cancer includes administering a therapeutically effective amount of a composition including a neoantigen vaccine including at least one pancreatic cancer-associated neoantigen and at least one immune checkpoint inhibitor. The methods and compositions of the present disclosure are particularly useful for inducing a neoantigen-specific CD4 or CD8 T cell response against a tumor.

27. [20230390373A](#) LIVE STRAIN OF STAPHYLOCOCCUS AUREUS AND USES THEREOF

US - 07.12.2023

Clasificación Internacional [A61K 39/085](#) N° de solicitud 17927139 Solicitante Versitech Limited Inventor/a Jiandong HUANG

The invention relates to the field of biomedicine. In particular, the invention relates to a live strain of *Staphylococcus aureus* and uses thereof. More particularly, the invention relates to a live strain of *Staphylococcus aureus* which lacks adenosine synthase A (AdsA) activity, to a vaccine against *Staphylococcus aureus* infection comprising said live strain, and a method for preventing and/or treating *Staphylococcus aureus* infection in a subject by administering said live strain.

28. [4284418](#) FALTUNGSPROMOTOREN UND IHRE VERWENDUNG ZUR HERSTELLUNG UND STABILISIERUNG VON POLYPEPTIDEN

EP - 06.12.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 22701406 Solicitante MAX PLANCK

GESELLSCHAFT ZUR FOERDERUNG DER WSS Inventor/a GÖRLICH DIRK

The present invention relates to the recombinant production of a protein of interest in a prokaryotic host cell or eukaryotic host cell wherein the protein of interest is obtained in a correctly folded and stable form. The protein of interest may be a difficult-to-make polypeptide for use as a vaccine or a pharmaceutical. The protein of interest is co- expressed with or fused to a 'fold promoter', which may be a VHH antibody recognizing the said protein.

29. [20230390378](#) IMMUNOGENIC FORMULATION CONTAINING A MODIFIED BCG STRAIN EXPRESSING AN ANDESVIRUS PROTEIN (ANDV) USEFUL FOR PREVENTING AND TREATING HANTA-ANDV VIRUS INFECTIONS

US - 07.12.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud 18247824 Solicitante PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE Inventor/a Alexis KALERGIS PARRA

The invention relates to an immunogenic formulation containing the *bacillus* Calmette-Guerin (BCG) strain in a concentration between 10⁴-10⁹ bacteria, expressing at least one protein or immunogenic fragment of Andesvirus (ANDV), in a pharmaceutically acceptable saline buffer solution, which serves to prepare a vaccine useful for preventing, treating or attenuating ANDV infections. ANDV belongs to the Hantavirus family and is a highly virulent human pathogen, which annually affects dozens of people in Chile generating in some infected a Hantavirus Cardiopulmonary Syndrome (HCPS).

30. [4286009](#) KOMBINATIONSTHERAPIE AUS ONKOlytischem VACCINIAVIRUS UND CHECKPOINT-INHIBITOR

EP - 06.12.2023

Clasificación Internacional [A61P 35/00](#) Nº de solicitud 23205199 Solicitante SILLAJEN INC Inventor/a KIM CHAN

A pharmaceutical combination comprising (i) a replicative oncolytic vaccinia virus and (ii) an immune checkpoint protein inhibitor is provided as well as a kit comprising the pharmaceutical combination and methods for treating and/or preventing cancer.

31. [WO/2023/235863](#) LIVE-ATTENUATED SARS-COV-2 VACCINE

WO - 07.12.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud PCT/US2023/067862 Solicitante THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES Inventor/a WANG, Tony T.

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

32. [20230390382](#) WW-DOMAIN-ACTIVATED EXTRACELLULAR VESICLES TARGETING HIV

US - 07.12.2023

Clasificación Internacional [A61K 39/21](#) N° de solicitud 18032140 Solicitante President and Fellows of Harvard College Inventor/a Quan Lu

Disclosed herein are methods, systems, compositions and strategies for the creation and use WW-domain-Activated Extracellular Vesicles (WAEVs) for presenting HIV antigen domains. These WAEVs can be harnessed to deliver and present HIV antigens useful for vaccine development. Specifically, the disclosure provides a fusion protein comprising: (a) a WW-containing domain; (b) a transmembrane domain; and (c) an extracellular domain, wherein the extracellular domain is an HIV antigen domain. Further provided are sequences of each domain as well as methods of producing and using the fusion protein.

33.[20230390380](#)BACULOVIRUS EXPRESSION VECTOR

US - 07.12.2023

Clasificación Internacional [A61K 39/135](#) N° de solicitud 18249431 Solicitante Intervet Inc. Inventor/a Erwin VAN DEN BORN

The invention concerns a baculovirus expression vector for recombinantly expressing a Foot-and-mouth disease virus (FMDV) capsid precursor protein under control of a promoter, the expression vector comprising a nucleic acid sequence encoding the FMDV capsid precursor protein, wherein the ATG start codon of an open reading frame encoding the FMDV capsid precursor protein © is preceded at position -4 to -1 by the nucleic acid sequence 5'-AAAT-3'. The invention further relates to a host cell comprising the baculovirus expression vector, a method of producing FMDV virus-like particles (VLPs), and a method of producing a vaccine.

34.[3430027](#)PEPTID TIL ANVENDELSE VED IMMUNTERAPI MOD IKKE-SMÅCELLET LUNGECANCER OG SMÅCELLET LUNGECANCER

DK - 04.12.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17710904 Solicitante Immatics Biotechnologies GmbH Inventor/a SCHOOR, Oliver

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.

35.[WO/2023/235771](#)CHEMICAL SCREEN OF MODULATORS FOR VACCINE ADJUVANTS

WO - 07.12.2023

Clasificación Internacional [A61K 41/00](#) N° de solicitud PCT/US2023/067719 Solicitante THE UNIVERSITY OF CHICAGO Inventor/a ESSER-KAHN, Aaron

The disclosure provides for methods and compositions that can be used for modulating an immune response. Described are methods comprising administering an effective amount of (a) an adjuvant; and (b) one or more of bafetinib (INNO-406), LY3009120, MK-8353 (SCH900353), amodiaquine, zanubrutinib (BGB-3111), Ku55933, Tucidinostat, PD318088, WNK463, and TRx0237 (LMTX) mesylate to a subject. The methods may be for the vaccination of subjects, or for the treatment or prevention of cancer, graft rejection, graft versus host disease, a bacterial infection, or a viral infection in a subject. The method may be for modulating an immune response in vivo, in vitro, or ex vivo. The methods also include immune activation of a population of immune cells in vitro or ex vivo. Also described is a method for identifying the efficacy of an adjuvant, the method comprising: (a) administering the adjuvant to a population of cells; (b) administering a PRR agonist to the population of cells; and (c) measuring expression of one or more

cytokines from the cells. Also described are pharmaceutical composition comprising: (a) an adjuvant; and (b) one or more of bafetinib (INNO-406), LY3009120, MK-8353 (SCH900353), amodiaquine, zanubrutinib (BGB-3111), Ku55933, Tucidinostat, PD318088, WNK463, and TRx0237 (LMTX) mesylate.

36. [20230390369](#) CHIMERIC ANTIGEN COMPRISING THE EXTRACELLULAR DOMAIN OF PD-L1
US - 07.12.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 18033035 Solicitante CENTRO DE INGENIERÍA GENÉTICA Y BIOTECNOLOGÍA Inventor/a Yanelys MORERA DIAZ

Chimeric antigen comprising multimeric aggregates of the extracellular domain of the programmed death ligand 1 (PD-L1) with a reduced binding capacity to the PD-1 and CD80 receptors as compared to the native PD-L1 molecule. The invention further discloses pharmaceutical compositions including said chimeric antigen and at least a pharmaceutically acceptable vaccine adjuvant. The chimeric antigen is used for the manufacturing of a drug to treat cancer or its metastases. The invention also discloses a method of treating cancer or its metastases in a subject in need thereof, characterized by the administration of a therapeutically effective amount of the pharmaceutical composition comprising the chimeric antigen described herein.

37. [4284419](#) IMMUNOGEN

EP - 06.12.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 22702310 Solicitante UNIV PRETORIA Inventor/a MILLAR ROBERT PETER

This invention relates to an immunogen comprising a gonadotropin releasing hormone (GnRH) peptide sequence, a kisspeptin peptide sequence and a stimulant of raising an immune response, such an immunogen for use in a method to regulate the release of hormones in a vertebrate including modulation of reproductive hormones, to reduce fertility in a vertebrate and to treat hormone-dependent diseases including hormone-dependent tumours including prostate tumours, breast, ovary and endometrial tumours, benign hyperplasia including benign prostatic hyperplasia and uterine fibroids, endometriosis, polycystic ovarian disease, infertility, sexual dysfunction and any disorder that would benefit from an increased or decreased GnRH-dependent activity and a vaccine formulation comprising the immunogen. The invention also relates to the use of the immunogen in the preparation of a medicament for use in a method to regulate the release of hormones in a vertebrate.

38. [20230390383](#) REPLICATION INCOMPETENT INFLUENZA VACCINE PLATFORM FOR FOREIGN PROTEIN DELIVERY

US - 07.12.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 18033039 Solicitante Duke University Inventor/a Nicholas S. HEATON

The present invention provides replication incompetent influenza viral particles comprising a modified hemagglutinin (HA) protein. Also provided are methods for making and using the viral particles, and cell lines for making the viral particles.

39. [20230393122](#) STEM CELL COMPOSITIONS FOR CULTURING CORONAVIRUSES AND METHODS OF MAKING AND USING THEREOF

US - 07.12.2023

Clasificación Internacional [G01N 33/50](#) Nº de solicitud 18345934 Solicitante Centre for Translational Stem Cell Biology Limited Inventor/a Degong Ruan

Disclosed are methods for culturing coronavirus particles in early syncytiotrophoblasts (eSTBs). The derived eSTBs are mononucleated or bi-nucleated cells with high ACE2 expression and are not multi-nucleated or mature cells. The methods can also include assessing the eSTBs for coronavirus susceptible markers. Also disclosed are compositions and methods (i) for inducing the differentiation of eSTBs and

mature STBs from trophoblast stem cells (TSCs), (ii) for inducing the differentiation of TSCs from EPSCs, primed and naïve stem cells, pre-implantation embryos, placental stem cells, and iPSCs, and (iii) for producing TSCs by reprogramming non-trophoblast cells. The disclosed compositions and methods can be used for producing large quantities of coronavirus particles, including human, non-human, and variant coronavirus particles for virus production, the vaccine industry, disease modeling studies, screening and evaluation of antiviral reagents, compound candidates, testing kits, and evaluation of clinical therapies.

40. [20230392169](#) NUCLEIC ACID NANOSTRUCTURES FOR DELIVERY OF NUCLEIC ACID

SEQUENCES TO CELLS

US - 07.12.2023

Clasificación Internacional [C12N 15/88](#) Nº de solicitud 18246447 Solicitante UCL BUSINESS LTD

Inventor/a Stefan HOWORKA

Improved nucleic acid nanostructures provide a platform for stable and effective intra-cellular delivery of nucleic acids, suitably coding nucleic acids such as mRNA or ssDNA. A nucleic acid nanostructure is provided that comprises a first single stranded nucleic acid sequence that defines a scaffold sequence, wherein the scaffold sequence comprises at least one open reading frame that encodes a first gene product; and a plurality of single stranded nucleic acid sequences that define a plurality of staple sequences, wherein the plurality of staple sequences are capable of hybridising with one or more regions of the scaffold sequence in order to induce the formation of a geometrically defined higher order structure. The nanostructure may further comprise at least one membrane binding moiety, wherein the membrane binding moiety is configured to associate with a cell membrane. The nanostructures may be used in pharmaceutical compositions, such as vaccine compositions, and in methods of treating subjects in need thereof.

41. [WO/2023/235592](#) TLR AGONISTS COMPRISING SAPONIN NANOPARTICLE VACCINE

ADJUVANTS TO IMPROVE IMMUNOMODULATION

WO - 07.12.2023

Clasificación Internacional [A61K 9/14](#) Nº de solicitud PCT/US2023/024332 Solicitante THE BOARD OF TRUSTEES OF THE LEAND STANFORD JUNIOR UNIVERSITY Inventor/a APPEL, Eric A.

Provided herein are nanoparticles including a TLR agonist, a saponin, a phospholipid, and a sterol. The composition of the nanoparticles is modularly tunable and can be configured such that the nanoparticles are particularly useful as adjuvants for enhancing a variety of potent and durable immunogenic responses. Also provided are adjuvant compositions and immunogenic compositions including the nanoparticles, and methods for using these compositions to induce an immunogenic response and treat or prevent a disease.

42. [WO/2023/235660](#) FLAVIVIRUS IMMUNOGENS AND VACCINE COMPOSITIONS AND METHODS OF USING THE SAME

WO - 07.12.2023

Clasificación Internacional Nº de solicitud PCT/US2023/067128 Solicitante THE HENRY M. JACKSON FOUNDATION FOR THE ADVANCEMENT OF MILITARY MEDICINE, INC. Inventor/a DUSSUPT, Vincent

This application relates generally to flavivirus immunogens and to methods and compositions related thereto. More particularly, the disclosure relates to compositions and methods for the preparation, production, and administration of flavivirus immunogens comprising modified E proteins, including, for example, compositions for use as vaccines against flavivirus and for capturing antibodies against flavivirus.

43. [20230390345](#) COMBINATION THERAPY COMPRISING HER-2-DC1 VACCINE, A PROBIOTIC, AND SEMAPHORIN

US - 07.12.2023

Clasificación Internacional [A61K 35/741](#) N° de solicitud 18021847 Solicitante H. LEE MOFFITT CANCER CENTER AND RESEARCH INSTITUTE, INC. Inventor/a Krithika N. KODUMUDI

Disclosed are anti-cancer therapies comprising i) at least one dendritic cell pulsed with an oncodriver and ii) a fecal microbial transplant (FMT) from a pathologic complete response (pCR) donor or a cyclin-dependent kinase (CDK) inhibitor and methods of the use of said therapies to treat cancer.

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