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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.

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- Patentes más recientes en Patentscope sobre vacunas.

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COVID-19 Vaccines Highly Effective In Reducing Risk Of Heart Failure, Blood Clots Post SARS-CoV-2 Infection: Study

Mar 13. COVID-19 vaccines are highly effective in reducing the risk of heart failure and blood clots following SARS-CoV-2 infection, a new study has found. Vaccination reduced the risk of medical conditions such as heart failure, myocarditis, venous thromboembolism, and arterial thrombosis in the acute and post-acute phase post SARS-CoV-2 infection. The acute phase refers to the 30-day period after infection, and the post-acute phase spans from day 31 to day 365 following infection. COVID-19 vaccination showed a stronger effect in reducing the risk of these conditions in the acute phase, compared to the post-acute phase, the study, published in the British Medical Journal, said.

Covid-19 vaccines are highly effective in reducing the risk of heart failure and blood clots following SARS-CoV-2 infection, a new study has found. The data was collected from three European countries: the UK, Spain, and Estonia. (Image Source :Getty/ABP Live)

Myocarditis refers to the inflammation of the myocardium, the middle layer of the heart wall. This adversely impacts the heart's ability to pump blood.

Venous thromboembolism is a condition that occurs when a blood clot forms in a vein, usually in the lower leg, thigh, or pelvis, while arterial thrombosis is a blood clot that forms in an artery, and can obstruct the flow of blood to major organs such as the brain. Medical conditions such as venous thromboembolism and arterial thrombosis are known as thromboembolic events.

Therefore, if one compares an unvaccinated individual affected by COVID-19 with a vaccinated person who has had a breakthrough infection, the latter will have a reduced risk of cardiovascular and thromboembolic conditions.

The new study, led by researchers at the University of Oxford in the United Kingdom, has appeared a few weeks after a paper published in the journal Vaccine stated that COVID-19 vaccines, including those from Moderna, Pfizer, and Oxford, have been linked with a slight increase in heart, brain, and blood disorders. As part of the previous study, researchers investigated 13 heart, blood, and neurological conditions to determine if there is a greater chance of them occurring after one receives a COVID-19 vaccine.

How the study on risk reduction of heart failure and blood clots was conducted

The new study has shown that while COVID-19 vaccines can be linked with increased risk for cardiac and thromboembolic events, the risk of complications is substantially higher following SARS-CoV-2 infection in unvaccinated individuals.

The study considered 10.7 million vaccinated and 10.39 million unvaccinated individuals. The data was collected from three European countries: the UK, Spain, and Estonia.

The vaccines included for this study were the Oxford/AstraZeneca COVID-19 vaccine (ChAdOx1), Pfizer/BioNTech vaccine (BNT162b2), Janssen vaccine (Ad26.COV2.S), and Moderna vaccine (mRNA-1273). All these vaccines were approved within the study period from January 2021 to July 2021.

Important findings, and significance of the study

The study found that in the acute phase of COVID-19 infection, vaccination helped reduce the risk for thromboembolic and cardiac events by 45 to 81 per cent.

The authors noted that the risks for post-acute venous thromboembolism, arterial thromboembolism, and heart failure were reduced to a lesser extent (24 to 58 per cent).

Also, vaccinated people had a reduced risk for myocarditis, pericarditis (inflammation of pericardium, or the thin sac covering the heart), ventricular arrhythmia (abnormal heartbeats that originate in the lower heart chambers or ventricles), and cardiac arrest (sudden loss of heart activity) only in the acute phase.

The authors concluded that COVID-19 vaccination substantially reduced the risk of cardiac and thromboembolic conditions in the acute phase post COVID-19 infection. This was probably due to a reduction in the severity of COVID-19 disease because of vaccine-induced immunity.

In vaccinated people, reduced risk lasted for up to one year for post-Covid-19 venous thromboembolism, arterial thromboembolism, and heart failure, but not clearly for other complications.

The researchers noted that further research needs to be conducted to understand the possible waning of risk reduction over time, and how booster vaccination will impact risk reduction.

Fuente: abp LIVE. Disponible en https://acesse.dev/3ETXj

Viróloga de la UCR señala que el coronavirus ha mutado más rápido de lo que se esperaba en estos 4 años

13 mar. La variante JN.1 es actualmente la variante que está predominando en el país, según datos del Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (Inciensa). Esta variante ha llegado a ser la muestra más recolectada por esta institución e incluso en algunas semanas llegó al 100% de estas muestras.

Recientemente, cada cierto tiempo surge una variante del COVID-19, esto no resulta ser común para las personas que no se encuentran en el medio científico e incluso para los que sí lo están.

Según Eugenia Corrales, viróloga del Centro de Investigación en Enfermedades Tropicales (CIET) de la Universidad de Costa Rica (UCR), señaló que este virus ha mutado más rápido de lo que se esperaba.

Por otro lado, frente a esta situación surge un problema con las vacunas, ya que se necesita que estén actualizadas para tener una efectividad total. Actualmente, no se cuenta con una vacuna para la variante JN.1, ya que resulta difícil competir contra la naturaleza, pues el virus no está intentando matar, sino más bien sobrevivir.

Corrales señala que el Gobierno no le ha dado la importancia que requiere a esta mutación de variantes. Es por eso que considera que se deben exigir políticas para abordar el rápido surgimiento de variantes, ya que el país no está listo para otro golpe de infección grande como el experimentado con la variante Delta.

Evolución de las variantes del COVID-19

En opinión de Corrales, los virus ARN (COVID-19 o influenza, por ejemplo) suelen cometer errores a la hora de copiar su información genética. Estos se reproducen en cantidades exorbitantes, por lo que las probabilidades de que haya errores entre cada uno es muy grande. Por ello, cuando estos errores le dan una ventaja al virus es cuando la variante va prevalecer y se va expandir.

“Lo que hemos visto con el coronavirus (es que) este virus a través de los cuatro años ha ido avanzando rápidamente en esas mutaciones, más de lo que esperábamos. En realidad se esperaban unas dos mutaciones por mes, pero estamos viendo que el surgimiento de las nuevas variantes es sumamente rápido, en cuestión de meses ya hay si acaso unos 10 o 20 cambios que son considerables”, comentó Corrales.

Esta variante JN.1 surge de la Omicron, la cual es una variante que evolucionó lo suficiente para escapar del control de respuestas que tendrían las personas que estaban infectadas con las primeras mutaciones de COVID-19, como la Alfa o la Delta, según señaló la viróloga. Esto significa que las personas que fueron afectadas por la Omicron pueden volver a infectarse con la JN.1.

“Mucha gente dice que los virus lo que van haciendo es mutando para volverse suavecitos, pero no necesariamente. En cualquier momento este virus puede mutar y hacer una variante realmente peligrosa. No ha sucedido, por dicha, pero eso no quiere decir que no vaya a suceder habiendo tantas infecciones y tanta gente sin cuidado ni medidas”, agregó.

Importancia de las vacunas

El hecho de que las variantes muten tan rápido no significa que las vacunas ya no sirven porque ya que lo que cambió fue la espícula del virus. Esto quiere decir que a pesar de la mutación en la espícula del virus, que es la proteína que utiliza para ingresar a las células huésped, las vacunas y las medidas tomadas hasta ahora siguen siendo efectivas en la prevención de la enfermedad y evitar la gravedad de esta porque el sistema inmune tiene otros medios para proteger a las personas.

Para Corrales, lo ideal sería vacunarse con una dosis refrescada, lamentablemente aún no hay una vacuna contra la variante JN.1, pero la versión más reciente funcionaría parcialmente contra la infección.

“Hay una discusión muy grande sobre hacer la vacunación como, por ejemplo, con influenza, que cada año se cambia el virus que está incluido en la vacuna. Lo que pasa es que no vemos en este momento un aumento en la severidad en vacunados entonces no es necesario refrescar la vacunas”, comentó Corrales.

Los expertos en este tema siempre resaltan que es necesario recordar que el virus no causa daño al propio, su único interés es sobrevivir y copiarse a sí mismo. Es por eso que está en un constante estado de cambio, más bien el ser humano lo que ha hecho es darle mayor presión para que vaya mutando.

A pesar de esto, la importancia de las vacunas y la necesidad de actualizarlas no disminuye. La vacunación está dirigida a prevenir la severidad de los casos, pero las variantes pueden mutar para sobrevivir a esta.

“El asunto va a ser cuando el virus evolucione lo suficiente para cambiar lo suficiente en que ya su respuesta inmune ya no pueda controlar esa infección. Ahí sí habría que pensar en refrescar y por eso es tan importante esta vigilancia de las variantes”, añadió la viróloga.

El problema de no tener vacunas actualizadas es más para quienes aún no han recibido ni una sola dosis debido a que nacieron en los últimos años. También las personas mayores a 75 años, debido a que son una población vulnerable frente al COVID-19.

“Las vacunas actuales tienen que venir dirigidas a esas personas susceptibles que no han tenido ninguna vacuna o aquellas que son vulnerables y han perdido la respuesta inmune. Es muy importante y vemos que, en el Gobierno, pues como que no hay interés o dinero”, agregó Corrales.

Papel del Gobierno

Para la viróloga, el Ministerio de Salud debería promover una campaña de vacunación para las personas que aún no han recibido una sola dosis. Pero estas vacunas deben estar actualizadas y la población debería solicitar este tipo de políticas.

“El Gobierno desde que empezó ha tratado de invisibilizar la seriedad del coronavirus. Entonces, que haya una nueva variante, otra variante o virus, creo que el Gobierno no le está importando de una manera lo suficiente como para pensar en mejorar la salud pública”, comentó la experta en virología.

Corrales considera que recientemente se han visto retrocesos fuertes en la salud pública, y que es responsabilidad tanto del Ministerio de Salud como de la Caja Costarricense del Seguro Social.

Sin embargo, la población también ha tenido la necesidad de pasar la página y olvidar el tema, aunque aún haya muchas preguntas que resolver sobre este virus. Corrales ve esta situación como algo comprensible, ya que el país no está en el pico de la emergencia, pero resalta que sigue sucediendo.

“No hay capacidad hospitalaria en este momento para atender otra ola como la de la variante Delta con tantos infectados. Eso significa que deberíamos seguir tomando las medidas de cuidado y deberíamos solicitar a las políticas que refresquen las vacunas”, finalizó Corrales.

Fuente: SEMANARIO UNIVERSIDAD. Disponible en https://encr.pw/Dlg0n

Merck Announces Plans to Conduct Clinical Trials of a Novel Investigational Multi-Valent Human Papillomavirus (HPV) Vaccine and Single-Dose Regimen for GARDASIL®9

Mar 13. Merck (NYSE: MRK), known as MSD outside of the United States and Canada, today, at the EUROGIN 2024 HPV Congress, announced plans to initiate clinical development of a new investigational multi-valent HPV vaccine designed to provide broader protection against multiple HPV types. Separately, the company also plans to conduct clinical trials in both females and males to evaluate the efficacy and safety of a single-dose regimen of GARDASIL®9 (Human Papillomavirus 9-valent, recombinant), compared to the approved three-dose regimen.

“Evidence continues to emerge showing the importance of GARDASIL and GARDASIL 9 to public health,” said Dr. Eliav Barr, senior vice president, head of global clinical development and chief medical officer, Merck Research Laboratories. “These significant investments build upon our leadership and importantly provide the opportunity to further impact the global burden of certain HPV-related cancers and disease.”

In the U.S., GARDASIL 9 is indicated for use in females 9 through 45 years of age for the prevention of cervical, vulvar, vaginal, anal, oropharyngeal and other head and neck cancers caused by HPV Types 16, 18, 31, 33, 45, 52, and 58; cervical, vulvar, vaginal, and anal precancerous or dysplastic lesions caused by HPV Types 6, 11, 16, 18, 31, 33, 45, 52, and 58; and genital warts caused by HPV Types 6 and 11.

GARDASIL 9 is also indicated for use in males 9 through 45 years of age for the prevention of anal, oropharyngeal and other head and neck cancers caused by HPV Types 16, 18, 31, 33, 45, 52, and 58; anal precancerous or dysplastic lesions caused by HPV Types 6, 11, 16, 18, 31, 33, 45, 52, and 58; and genital warts caused by HPV Types 6 and 11.

The oropharyngeal and head and neck cancer indication is approved under accelerated approval based on effectiveness in preventing HPV-related anogenital disease. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial. The confirmatory trial is ongoing. GARDASIL 9 is contraindicated in individuals with hypersensitivity, including severe allergic reactions to yeast, or after a previous dose of GARDASIL 9 or GARDASIL® [Human Papillomavirus Quadrivalent (Types 6, 11, 16, and 18) Vaccine, Recombinant].

Multivalent HPV vaccine research

Merck vaccine researchers continue to build on the development of GARDASIL and GARDASIL 9 to identify new candidates with the potential to extend protection against a broader array of HPV types. The latest addition to the pipeline employs the company's proprietary virus-like particle (VLP) technology to incorporate additional VLPs for expanded HPV type coverage. This includes several types known to have more impact in African and Asian populations and individuals of African and Asian descent. First-in-human studies (Phase 1) are scheduled to start in the fourth quarter of 2024.

Assessing the potential efficacy and durability of a single dose regimen of GARDASIL 9

In response to calls from scientific leaders for more clinical data concerning alternative dosing regimens for GARDASIL 9, Merck, pending regulatory input, plans to conduct two prospective clinical trials, one in females (16-26 years old) and one in males (ages 16-26 years old). These randomized, double-blind, multi-year clinical trials will examine the short and long-term efficacy and immunogenicity of a single-dose of GARDASIL 9 versus the currently approved three-dose regimen. The goal of these large, randomized trials is to generate data that clearly determines whether or not a single dose of GARDASIL 9 provides comparable long-term protection to the approved three-dose regimen, while also satisfying the high standards required by regulatory authorities. The clinical trials are anticipated to start enrolling participants in the fourth quarter of 2024.

HPV vaccine supply

To address the increasing global demand for GARDASIL and GARDASIL 9 and support broader and equitable access, Merck has made significant investments in manufacturing to help increase supply. Starting in 2019, the company committed to expand manufacturing capacity by increasing production at existing plants as well as constructing new facilities. Between 2017 and 2020 this resulted in a near doubling of supply which has subsequently been doubled again between 2020 and 2024. Merck expects to supply sufficient quantities of HPV vaccines to meet anticipated demand for 2025 and will continue to expand our supply capacity in the future.

Fuente: Merck News. Disponible en https://l1nq.com/o4Bq3

La Comisión Europea autoriza la vacuna antineumocócica conjugada 20-valente de Pfizer para lactantes y niños

14 mar. Pfizer anuncia que la Comisión Europea (CE) autoriza la comercialización de Prevenar 20, una vacuna antineumocócica conjugada 20valente (VNC-20) desarrollada por la compañía americana para la inmunización activa contra la prevención de enfermedades invasivas, neumonía y otitis media aguda causadas por Streptococcus pneumoniae (neumococo) en lactantes, niños y adolescentes desde seis semanas hasta menos de 18 años de edad.

"Los 20 serotipos incluidos en VNC-20 son responsables de la mayoría de los casos de enfermedad neumocócica actualmente en la Unión Europea y en el mundo."

La vacuna candidata pediátrica VNC-20 de Pfizer incluye 13 serotipos ya incluidos en Prevenar 13: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F y 23F. Los siete nuevos serotipos incluidos en VNC-20 (8, 10A, 11A, 12F, 15B, 22F y 33F) son responsables de enfermedad neumocócica invasiva (ENI) a nivel global y están asociados con altas tasas de letalidad, resistencia a los antibióticos y/o meningitis. En conjunto, los 20 serotipos incluidos en VNC-20 son responsables de la mayoría de los casos de enfermedad neumocócica actualmente en la Unión Europea y en el mundo.

"La autorización por la CE de Prevenar 20 para lactantes y niños representa una importante oportunidad para mejorar la salud pública al ayudar a proteger frente a los 20 serotipos responsables de la mayoría de las enfermedades neumocócicas que circulan actualmente en la UE", declaró Alexandre de Germay, director comercial Internacional y vicepresidente Ejecutivo de Pfizer. "Prevenar 20 se basa en el compromiso de décadas de Pfizer para desarrollar vacunas que ayuden a prevenir infecciones potencialmente mortales, y estamos orgullosos de ofrecer ahora la cobertura de serotipos más amplia de todas las vacunas conjugadas antineumocócicas para niños en Europa", ha añadido.

La autorización se produce tras el reciente dictamen positivo por parte del Comité de Medicamentos de Uso Humano (CHMP, por sus siglas en inglés) de la Agencia Europea de Medicamentos (EMA, por sus siglas en inglés). La autorización es válida en los 27 Estados miembro de la Unión Europea más Islandia, Liechtenstein y Noruega. También sigue a la aprobación de Prevenar para lactantes y niños por la Administración de Alimentos y Medicamentos de EE.UU. (FDA) en abril de 2023, y las aprobaciones en varios otros países como Canadá, Australia y Brasil. Se han presentado solicitudes de autorización de PREVENAR 20 para la indicación pediátrica en otros países de todo el mundo.

En 2020, Pfizer inició un Programa de Estudios Clínicos Fase III para la indicación pediátrica de VNC-20, compuesto por cuatro estudios pediátricos (NCT04546425, NCT04382326, NCT04379713, NCT04642079), que ayudaron a ampliar los datos sobre la seguridad, tolerabilidad e inmunogenicidad de la vacuna. En estos estudios participaron más de 4.700 lactantes y 800 niños pequeños de todas las edades.

"Pfizer tiene una larga trayectoria en el desarrollo de vacunas antineumocócicas conjugadas innovadoras para ayudar a proteger a los niños y sus familias de infecciones potencialmente mortales", explicó José Chaves, director médico de Pfizer en España, cuando se produjo la decisión "La opinión positiva del CHMP representa un importante paso hacia adelante en nuestros continuos esfuerzos y, si se aprueba, VNC-20 tiene el potencial de cubrir mayor carga de enfermedad que cualquier otra vacuna antineumocócica conjugada pediátrica disponible en la Unión Europea", según ha indicado.

Fuente: El Global. Disponible en https://l1nq.com/ZVuvh

Experts Welcome Dengue Vaccine Approval As 'Breakthrough' In Malaysia's War Against Dengue

Mar 15. Experts have endorsed the conditional approval of Takeda's Qdenga dengue vaccine in Malaysia as a crucial tool in curbing the epidemic, amid flagging public health measures like fogging and Wolbachia mosquitoes.

"Experts welcome Malaysia's approval of Takeda's Qdenga dengue vaccine that is 84.1% effective against hospitalisation. A Phase 3 trial shows no important safety risks and no evidence of dengue disease enhancement in vaccine recipients."

Dr Musa Mohd Nordin, a consultant paediatrician at KPJ Damansara Specialist Hospital, noted that the World Health Organization's (WHO) Strategic Advisory Group of Experts (SAGE) has endorsed the use of Takeda's dengue vaccine without pre-vaccination screening.

"Therefore, the awaited conditional approval of Takeda's Qdenga dengue vaccine by the Drug Control Authority (DCA) is a most welcome breakthrough, an invaluable armamentarium in our war against dengue," Dr Musa wrote.

In February, Malaysia's DCA gave conditional approval for use of Takeda's Qdenga dengue vaccine to prevent dengue fever in individuals aged four years and older.

While acknowledging that the vaccine is not a singular solution to Malaysia's worsening dengue epidemic, experts highlight its potential to significantly reduce hospitalisations, particularly in high-burden areas.

This comes as Malaysia grapples with an 86 per cent increase in dengue cases and a 79 per cent increase in deaths from dengue compared to 2022, prompting calls for a multi-pronged approach that includes both vector control and vaccination.

Qdenga's Phase 3 Trial: Vaccine Efficacy Against Symptomatic Dengue: 61.2%, Against Hospitalisation: 84.1%

According to four and a half years of follow-up data from a Phase 3 randomised, double-blind, placebo-controlled trial of Qdenga's dengue vaccine in more than 20,000 healthy children and adolescents aged four to 16 years living in eight dengue-endemic countries, overall vaccine efficacy was 61.2 per cent against symptomatic dengue and 84.1 per cent against hospitalisation.

The Tetravalent Immunisation against Dengue Efficacy Study (TIDES) showed long-term efficacy and safety with the vaccine.

"The Takeda dengue vaccine, known as Qdenga (TAK-003), is based on a live-attenuated dengue serotype 2 virus, which provides the genetic 'backbone' for all four dengue virus serotypes and is designed to protect against any of these serotypes," virologist Emeritus Professor Dr Lam Sai Kit, a research consultant at Universiti Malaya and senior fellow at the Academy of Sciences Malaysia, told CodeBlue.

"In terms of safety, Qdenga has been generally well tolerated and no important safety risks have been identified in the TIDES trial."

Lam noted that Qdenga is also available for children and adults in the European Union, the United Kingdom, Indonesia, Thailand, and Brazil.

"As a matter of fact, the city of Dourados in the Brazilian state of Mato Grosso do Sul announced on 3 January 2024 that it has begun the country's first mass vaccination against dengue using Qdenga," said the virologist.

"Brazil registered 1.6 million cases of dengue in 2023, and 1,053 deaths, and the country's health ministry announced it would include Takeda's shot in the national vaccination programme."

Dr Musa said Qdenga's vaccine effectiveness of 84.1 per cent against hospitalisation would reduce demand for Malaysia's hospital beds.

"Another aspect of the vaccine which is equally important is that no serious adverse events following immunisation (AEFI) [related to the vaccine] were reported. In particular, there was no evidence of dengue disease enhancement and no increased risk of hospitalisation in Takeda's Qdenga vaccine recipients," said the consultant paediatrician.

Conduct Pilot Vaccination Programme In High-Burden Areas

Prof Dr Lokman Hakim Sulaiman – deputy vice chancellor (research) and director of the Institute for Research, Development and Innovation at International Medical University – advocated for a pilot vaccination programme with Qdenga in pre-defined geographical areas, particularly to assess vaccine efficacy against the DENV-3 and DENV-4 serotypes of the dengue virus, considering their recent surge.

The vaccination programme can focus on high-burden regions like the Klang Valley and utilise the WHO SAGE matrix to identify suitable areas.

"Yes, vaccines can be one of the tools, and looking at the current situation, may be the key to dengue control, but it is not the silver bullet," Dr Lokman told CodeBlue.

He explained that while Qdenga's dengue vaccine is effective against all serotypes in previously infected individuals, protection for dengue-naive individuals varies significantly: 45.4 per cent for DENV-1, 88 per cent for DENV-2, and no observed protection for DENV-3 and DENV-4.

"I also think the government and global community need to invest a lot more in R&D for dengue. It is ironic that despite being the most rapidly increasing infectious burden globally, dengue remained as a 'neglected tropical disease'," Dr Lokman said.

"Malaria benefited a lot from huge investment in R&D since the 1980s and is now reaping the fruits of its investment."

Dr Musa suggested a pilot vaccination study in high-burden areas with seroprevalence exceeding 60 per cent before considering inclusion of the Qdenga vaccine into the National Immunisation Programme (NIP), drawing parallels to other vaccines like Hepatitis B, Measles Mumps Rubella (MMR), Haemophilus influenza B, (HiB), Human Papillomavirus (HPV), and the Pneumococcal Conjugate Vaccine (PCV).

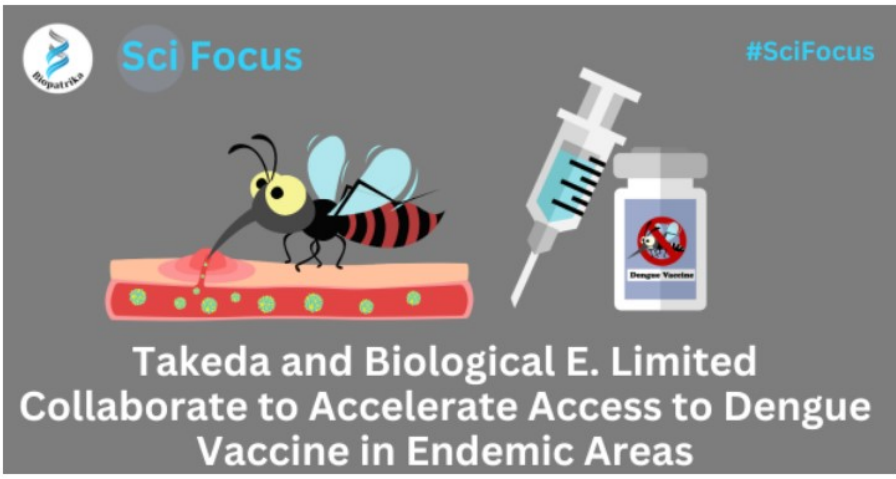
"The Tetanus, Diphtheria, Pertussis (Tdap) vaccine in pregnant mothers and influenza vaccine in older persons is now being seriously considered by the MOH," he said.

"I guess it will not be much different with the dengue vaccine. There will be selective usage in the MOH and wider utilisation in the private health care sector prior to its inclusion in the NIP. Cost effective analysis will be undertaken to study the potential impact of the dengue vaccine on the cost and health outcomes of dengue fever."

Fuente: Code Blue. Disponible en https://acesse.dev/ZIPuj

Takeda and Biological E. Limited Collaborate to Accelerate Access to Dengue Vaccine in Endemic Areas

Mar 15. In a significant move to combat the rising threat of dengue fever worldwide, Takeda and Biological E. Limited (BE) have joined forces in a strategic partnership. This collaboration aims to expedite access to QDENGA® (Dengue Tetravalent Vaccine [Live, Attenuated]) multi-dose vials (MDVs) to support National Immunization Programs in endemic regions by 2030.



Highlights:

Biological E. Limited (BE) to manufacture up to 50 million doses of QDENGA per year, enhancing Takeda's capacity to deliver 100 million doses annually by 2030.

Focus on providing multi-dose vials to National Immunization Programs for economic and logistical benefits.

Dengue incidence rates have soared globally, posing a significant public health challenge.

The collaboration leverages BE's vaccine manufacturing expertise and Takeda's commitment to global health.

Details:

Dengue fever, a prevalent mosquito-borne disease, has witnessed a 30-fold increase in global incidence rates over the past five decades due to factors like urbanization, travel, and climate change.

With dengue endemic in over 100 countries and causing approximately 390 million infections annually, the need for effective vaccination strategies is critical.

Takeda's partnership with BE underscores a shared commitment to combatting infectious diseases and improving global health outcomes.

QDENGA, currently available in select markets, is poised to make a broader impact through enhanced manufacturing and distribution capabilities.

TAK-003 is a pioneering vaccine offering hope in regions heavily burdened by dengue, particularly in Asia, the Americas, and the Western Pacific.

Quotes:

Gary Dubin, M.D., President of Takeda's Global Vaccine Business Unit, emphasizes the collaboration's role in broadening access to QDENGA: "We will help combat dengue on a global scale by significantly increasing manufacturing capacity for multi-dose vials of QDENGA."

Mahima Datla, Managing Director at Biological E. Limited, highlights the alignment of values and missions between the two companies: "Takeda's commitment to patient-focused, value-based research and development aligns extremely well with our dedication to advancing healthcare."

About Takeda and Biological E. Limited:

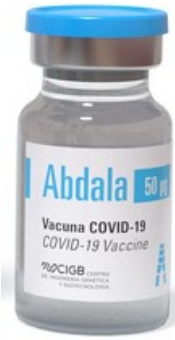
Takeda, a leading biopharmaceutical company, focuses on creating better health for people worldwide through innovative treatments and a diverse pipeline across various therapeutic areas.

Biological E. Limited, founded in 1953, is a pioneering Indian pharmaceutical and biologics company known for its vaccine and therapeutic developments. With a global footprint, BE is dedicated to shaping a healthier future for all.

This collaboration marks a significant step forward in the global fight against dengue fever, showcasing the power of partnerships in advancing public health initiatives.

Fuente: Sci Focus. Disponible en https://acesse.one/DWPJI

Premio Excelencias para vacuna Abdala de Cuba



16 mar. La vacuna Abdala de Cuba recibió el Premio Excelencias Ciencia, Innovación y Desarrollo, por ser la primera de América Latina contra la COVID-19 y mostrar una eficacia del 92.28 por ciento contra la enfermedad, se divulgó hoy.

Dicho inmunizante, que también logró 100 por ciento de eficacia contra la enfermedad severa y la muerte, se alzó igualmente con el Premio Excelencias del público por los votos recibidos a través del formulario en la web.

La eficacia de este logro del Centro de Ingeniería Genética y Biotecnología (CIGB), una empresa de alta tecnología dedicada a la investigación y desarrollo, producción y comercialización de vacunas y productos biofarmacéuticos, es de los más altos en el mundo.

Los científicos cubanos cumplieron uno de los más grandes hitos de la biotecnología y la lucha contra la pandemia de COVID-19 al obtener la primera vacuna desarrollada y producida en América Latina y el Caribe contra el virus SARS-CoV-2, causante de dicha enfermedad contagiosa.

Al acto asistieron representantes de 19 países, del cuerpo diplomático acreditado en Cuba, artistas, científicos, así como autoridades de entidades locales y extranjeras presentes en el país.

Recogieron el lauro por la vacuna la directora de Negocios del CIGB y gerente del Proyecto Vacunas antiCovid, la doctora Miladys Limonta Fernández, el vicedirector del CIGB Yassel Ramos y la investigadora Karen Urrutia.

Fuente: Prensa Latina. Disponible en https://l1nq.com/7hkN0

Enhanced Typhoid Vaccine Receives WHO Qualification

Mar 16. With an estimated 11 to 20 million typhoid fever cases every year and about 120,000 related deaths, global health leaders are aggressively improving access to new vaccines.

The World Health Organization (WHO) recently confirmed its recommendation to use three vaccines to control endemic and epidemic typhoid fever.

In late February 2024, SK bioscience and the International Vaccine Institute (IVI) announced that the SKYTyphoid™ typhoid conjugate vaccine had received prequalification (PQ) from the World Health Organization.

WHO PQ certifies a vaccine's safety, efficacy, and GMP by evaluating its manufacturing process, quality, and clinical trial results according to stringent standards.

SKYTyphoid utilizes the 'purified Vi polysaccharide-diphtheria toxoid conjugate' method, which conjugates diphtheria toxin protein (diphtheria toxoid), which acts as a carrier, to polysaccharide of typhoid bacteria, which acts as an antigen.

Adopting conjugation technology, the vaccine is safe for infants and young children aged six months to 2 years. It is expected to provide sufficient immune response and long-term protection with a single dose compared to existing oral live or polysaccharide typhoid vaccines.

SKYTyphoid initially obtained a licensure in Korea in 2022.

Dr. Sushant Sahastrabuddhe, Director of IVI's Typhoid program, said in a February 23, 204 press release, "The WHO licensure of SKYTyphoid... will diversify and expand the supply of TVCs and help improve vaccine access in the endemic countries. With SK's commitment to making the vaccine for global public health at a competitive price, SKYTyphoid will play an important role in typhoid prevention globally."

SK bioscience plans to start supplying the vaccine as soon as possible and expand global supply through public procurement markets including typhoid endemic countries.

Typhoid fever is transmitted by consuming raw or undercooked food or water contaminated with the feces of an infected person.

In 2024, there are significant typhoid fever outbreaks in sub-Saharan Africa.

In March 2024, local media reported that Taiwan confirmed its first locally acquired typhoid fever case this year. Since 2019, Taiwan has accumulated 49 typhoid cases, 18 of which were domestic cases.

In the United States, about 5,700 people get typhoid fever each year, and 620 of those people are hospitalized.

There are currently two typhoid fever vaccines available in the United States.

Fuente: Precision Vaccinations. Disponible en https://encr.pw/tdHod

CDC Endorses Nirsevimab for Infant Respiratory Syncytial Virus (RSV) Prevention

Mar 18. The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices endorsed using nirsevimab, a long-acting monoclonal antibody, for infants under 8 months old to guard against RSV-associated lower respiratory tract infection during their initial RSV season. It recommended nirsevimab for children 8-19 months who are at risk of severe RSV disease. The findings aim to protect infants against RSV, through maternal vaccination or the direct administration of nirsevimab to the infants.

Out of the 699 hospitalized infants with acute respiratory illness, 59 (8%) had been administered nirsevimab more than 7 days before symptom onset. The effectiveness of nirsevimab in preventing RSV-associated hospitalization was determined to be 90% (95% CI = 75%–96%). The median time from receiving nirsevimab to onset symptoms was 45 days, with an interquartile range (IQR) of 19-76 days.

“The strengths of this first estimate of US post-introduction nirsevimab effectiveness include enrollment of infants using a standardized ARI definition, systematic RSV testing, and receipt of nirsevimab verification with state immunization information systems or medical records for all infants,” according to the CDC. “However, it is important to note that nirsevimab effectiveness during a full RSV season is expected to be lower than the estimate reported here because antibody levels from passive immunization wane over time.”

This study spanned from October 1, 2023, to February 29, 2024. This involved monitoring 699 infants hospitalized due to acute respiratory illness to determine the effectiveness of nirsevimab, focusing on those who had received the monoclonal antibody at least 7 days before the onset of symptoms.

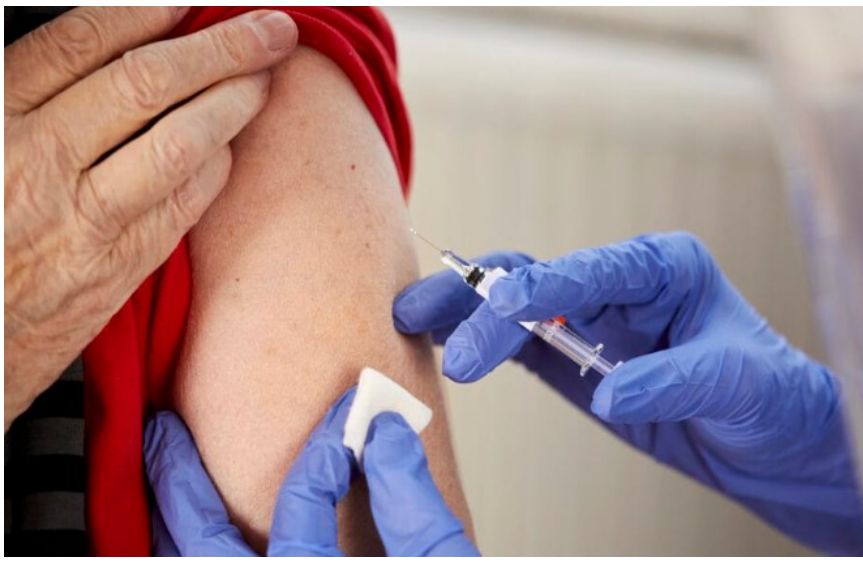
“The median interval from receipt of nirsevimab was 45 days, whereas the median duration of the US RSV season before the COVID-19 pandemic was 189 days.,” according to the CDC. “In clinical trials, nirsevimab remained highly efficacious against RSV-associated lower respiratory tract infection in infants through 150 days after receipt of nirsevimab, consistent with an extended half-life of 63–73 days.”

This report highlights limitations including its late season availability and supply issues limited its use, affecting the generalizability of results. The low number of treated infants impeded detailed effectiveness analysis, and the timing of nirsevimab's introduction may have allowed for prior RSV infections in some cases. Additionally, effectiveness was not evaluated by dosage or its impact on reducing outpatient and emergency visits, indicating areas for future research.

Overall, RSV is identified as a high cause of hospital admissions among infants in the US. Despite the limited uptake of nirsevimab and constraints related to the interval from its administration, the early estimates from this analysis reinforce the CDC’s recommendation of nirsevimab for preventing severe RSV disease in infants. This conclusion is drawn from the high effectiveness rate of nirsevimab in preventing RSV-associated hospitalization among infants who received it.

Fuente: Contagion Live. Disponible en https://encr.pw/h4HEL

'Viral fusion' fuels extra-potent vaccine for RSV, could be deployed for flu, researchers say



Mar 19. A new vaccine manufacturing technique could be really bad news for pathogens like respiratory syncytial virus, or RSV. But it's very good news for older adults who are at greater risk for developing serious conditions from such bugs.

A vaccine produced via Calder Bioscences' new "3D vaxlock" process generated an immune response 11 times more potent than "standard industry comparators," new research shows.

The new vaccine was applied for RSV, but the technology could produce similar vaccines for the flu and Epstein-Barr viruses, the researchers said.

"There remains an urgent need for vaccines that provide 75+ older adults and the frail good protection," Florian Schödel, MD, a member of Calder's scientific advisory board, said in a statement.

As illustrated on Calder Biosciences' website, the vaxlock process uses molecular carbon bonds to lock proteins into configurations that conform as closely as possible to the actual virus. The result makes the vaccine both more potent and have a long-lasting shelf life, according to the company.

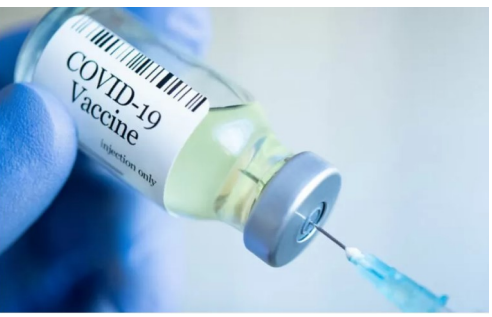
Although most people who contract RSV end up with mild cold-like symptoms, the virus can be dangerous for seniors, the Centers for Disease Control and Prevention warns. RSV is particularly damaging to older adults with existing respiratory issues and those who are dealing with heart failure.

More than 100,000 seniors are hospitalized due to RSV each year, and up to 10,000 die annually from the infection, according to the CDC.

Although COVID was not mentioned as a possible current candidate for the vaxlock treatment, Calder executives did cite the pandemic as proving the "incontrovertible" need for continued vaccine technology and deployment. The research on the new vaxlock RSV vaccine was published Thursday in the journal Nature Communications.

Fuente: McKnights Senior Living. Disponible en https://l1nq.com/SmifM

Alerta COVID: descubren 7 nuevas enfermedades asociadas a las vacunas de Pfizer, Moderna y AstraZeneca



19 mar. Las campañas de vacunación han sido un factor significante para mitigar los contagios por COVID-19 alrededor del mundo entero. Desde entonces, el número de infecciones y muertes por la enfermedad ha descendido considerablemente.

Si bien el pico de contagios por el coronavirus quedó en el pasado, los expertos siguen sacando a la luz información importante sobre la seguridad

de las vacunas a nivel mundial, pues desde que la Organización Mundial de la Salud (OMS) declaró la pandemia en marzo de 2020, se han administrado un total de 13.500 millones de dosis en todo el mundo.

Por ello, especialistas del Proyecto Global de Seguridad de las Vacunas COVID (GCoVS) subrayan la necesidad apremiante de un seguimiento integral de la seguridad de las vacunas.

Gracias a las investigaciones realizadas por los estudiosos del Global Vaccine Data Network (GVDN), se han identificado siete nuevas enfermedades o efectos secundarios relacionados con las inoculaciones contra la COVID-19.

¿Qué enfermedades se identificaron?

De acuerdo con este estudio, fueron 7 las enfermedades que se presentaron tras la aplicación de las vacunas seleccionadas:

Pfizer/BioNTech: (1) Parálisis facial, (2) trombosis del seno venoso cerebral, (3) miocarditis

Moderna: (4) Encefalomielitis aguda diseminada, (5) embolia pulmonar, miocarditis, (6) pericarditis

AstraZeneca: (7) Síndrome de Guillain-Barré, trombosis del seno venoso cerebral, miocarditis

Los investigadores indican que aunque los efectos secundarios son poco frecuentes, los beneficios de la vacunación son considerablemente mayores que los riesgos. No obstante, es esencial que las personas estén al tanto de los posibles efectos secundarios y busquen asistencia médica si experimentan alguno.

Fuente: El Cronista. Disponible en https://acesse.dev/Y7YXk

Nuevas vacunas contra la COVID-19 no serán bivalentes sino actualizadas, según empresa

20 mar. En dos entregas, a mediados y a fin de año, Ecuador recibiría nuevas dosis de vacunas para continuar con la inmunización contra la COVID-19 de la empresa Moderna Inc.

En total se recibirán 500.000 dosis. El proceso de compra se hace a través del Fondo Rotatorio de la Organización Panamericana de la Salud (OPS).

El Ministerio de Salud Pública (MSP) informó que la inversión es de alrededor de $ 8 millones.

Esa cartera de Estado indicó que serán vacunas actualizadas bivalentes, pero desde esa compañía se mencionó que son vacunas monovalentes.

Para el país, la empresa Medicamenta Ecuatoriana S. A, un laboratorio farmacéutico de la firma Adium, colabora con Moderna Inc. en varios procesos médicos y asuntos gubernamentales.

Glaucia Vespa, directora médica regional de vacunas Adium-Moderna, señaló que es una vacuna actualizada que tiene su composición para la variante Ómicron XBB .1.5.

En febrero del 2023 se detectó que esa variante ya circulaba en Ecuador. Algunas de las características son: mayor facilidad de saltarse el sistema inmune, puede ser más contagiosa y los síntomas aparecer más pronto.

Vespa explicó que los virus de COVID-19 son mutantes y pueden causar infecciones con consecuencias graves para las personas como hospitalización o enfermedad prolongada de coronavirus que tiene impactos en los sistemas económicos de un país.

Agregó que como el virus cambia la composición de la vacuna también debe hacerlo.

“Esta vacuna es monovalente (...) es actualizada para los virus COVID, las variantes que están circulando”, dijo como una de las características.

A su criterio no es importante si una vacuna es monovalente o bivalente sino que el medicamento haya sido actualizado.

Aseguró que tiene una efectividad superior para personas con más de 50 años que es considerada población vulnerable.

En total serán 500.000 dosis como resultado de una adquisición directa desde el mecanismo de la OPS.

Para el primer semestre de 2024 se suministrarán 250.000 dosis y a finales del año las restantes, sostuvo Álvaro Ramírez, gerente médico vacunas de Medicamenta.

Fuente: EL UNIVERSO. Disponible en https://l1nq.com/5Whdj

Desarrolladas dos nuevas vacunas COVID que mejoran la efectividad de las comercializadas

21 mar. IrsiCaixa, el Centro de Investigación en Sanidad Animal del Instituto de Investigación y Tecnología Agroalimentarias (IRTA-CReSA), y el Barcelona Supercomputing Center (BSC) han desarrollado dos nuevas candidatas a vacuna contra el covid. Estas se basan en dos versiones mutadas de la proteína de la espícula o proteína S –aquella que cuenta con un papel principal en la actividad del virus– del SARS-CoV-2, llamadas S29 y V987H.

Estas variantes, con innovadoras modificaciones genéticas, permiten aumentar hasta en cinco ocasiones la producción de la proteína S en comparación con otras vacunas ya comercializadas. Las vacunas se han mostrado efectivas en modelos preclínicos y están optimizadas a nivel de producción. El desarrollo ha contado con financiación de Grifols.

Respuesta inmunitaria

La revista 'Nature Communications' ha publicado unos resultados que demuestran la efectividad de ambas vacunas para generar una respuesta inmunitaria protectora en dos modelos preclínicos distintos. La publicación 'Frontiers in Immunology' y 'NPJ Vaccines' ya habían publicado resultados al respecto.

Con todos estos datos, el equipo investigador apunta a la posibilidad de incorporar las mutaciones de las variantes S29 y V987H en las nuevas generaciones de vacunas basadas en la proteína S.

La mayor parte de las vacunas contra el covid comercializadas hasta ahora se basan en la proteína S por dos motivos. El primero, porque es un elemento esencial para el proceso de infección, y el segundo, porque activa el sistema inmunitario contra el virus. A pesar de estas ventajas, la proteína S también representa un reto puesto que no es estable. Esto complica su producción e implica que ciertas conformaciones escondan la región de la proteína, llamada RBD, con mayor capacidad de activar el sistema inmunitario. De ahí que la mayoría de vacunas centradas en este compuesto, como las de Pfizer, Moderna, AstraZeneca y Janssen, estabilicen la proteína S con la incorporación de dos mutaciones, dando lugar a la variante llamada 2P.

El investigador principal de IrsiCaixa, Jorge Carrillo, ha explicado que, a pesar de los esfuerzos realizados hasta ahora, la proteína se sigue produciendo a niveles bajos y es necesario encontrar mutaciones alternativas que incrementen su producción.

Una producción hasta cinco veces mayor

Mediante técnicas de supercomputación, el equipo ha identificado diversas mutaciones que favorecen la estabilidad de la proteína. El investigador del BSC, Víctor Guallar, ha explicado que han utilizado herramientas informáticas para prever qué mutaciones consiguen reducir su movilidad y han escogido las que ofrecían una versión más estable de la proteína S, y con una mejor exposición al dominio RBD.

A partir de estas mutaciones, el equipo ha generado dos nuevas variantes de la proteína S, la S-29 y la S-V987H. La primera contiene las mutaciones S758E, T912R, K947R, K986P y V987P, y la segunda la mutación V987H. Estas variantes han demostrado que logran mejorar la producción respecto a las vacunas actuales basadas en la proteína S. En concreto, multiplican de dos a cinco veces el nivel de producción de la proteína en el laboratorio. La evaluación con dos modelos preclínicos diferentes ha demostrado que estas nuevas vacunas protegen frente a la infección por las variantes ómicron, beta y D614G del SARS-CoV-2.

Protección ante una infección grave

En concreto, las vacunas protegen del progreso a infección grave en el modelo de enfermedad severa. Por otra parte, se ha observado que reducen la cantidad de virus presentes en los tejidos en el modelo de enfermedad moderada. La investigadora principal en el IRTA-CReSA Júlia Vergara-Alert ha afirmado que explicando su respuesta inmunitaria ya la infección, han identificado que las vacunas inducen la producción de anticuerpos capaces de neutralizar la variante original, la beta, la delta y la ómicron.

Otro de los investigadores, Joaquim Segalés, ha destacado la importancia de contar con estudios como éste, que sirve de base de cara a nuevas generaciones de vacunas e identifica nuevas modificaciones que podrían optimizarlas.

Fuente: El Periódico. Disponible en https://l1nq.com/Um0M2

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20240312:20240320 as the publication date 34 records*

1.4333883SARS-COV-2-UNTEREINHEIT-IMPFSTOFF
EP - 13.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 22725738 Solicitante HIPRA SCIENT S L U
Inventor/a BARREIRO VAZQUEZ ANTONIO
The present invention relates to a protein subunit vaccine comprising at least one antigen characterized in that it comprises at least one monomer from at least one variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), wherein the at least one monomer is selected from the group consisting of the S1 subunit of the Spike protein or the receptor-binding domain (RBD) of the Spike protein. In an aspect of the present invention, the protein subunit vaccine comprises at least one antigen characterized in that it comprises two monomers from at least one variant of SARS-CoV-2, wherein each of the monomers are selected from the group consisting of the S1 subunit or RBD protein, and wherein the monomers are chemically bound to each other, optionally through a linker, forming fusion dimers or non-fusion dimers. The protein subunit vaccine may further comprise at least an adjuvant and at least an immunostimulant.

2.4333882SARS-COV-2-UNTEREINHEIT-IMPFSTOFF
EP - 13.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 22725737 Solicitante HIPRA SCIENT S L U
Inventor/a BARREIRO VAZQUEZ ANTONIO
The present invention relates to a protein subunit vaccine comprising at least one antigen characterized in that it comprises at least one monomer from at least one variant of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), wherein the at least one monomer is selected from the group consisting of the S1 subunit of the Spike protein or the receptor- binding domain (RBD) of the Spike protein. In an aspect of the present invention, the protein subunit vaccine comprises at least one antigen characterized in that it comprises two monomers from at least one variant of SARS-CoV-2, wherein each of the monomers are selected from the group consisting of the S1 subunit or RBD protein, and wherein the monomers are chemically bound to each other, optionally through a linker, forming fusion dimers or non-

fusion dimers. The protein subunit vaccine may further comprise at least an adjuvant and at least an immunostimulant.

3.4336187HER2-IMPFSTOFFZUSAMMENSETZUNG
EP - 13.03.2024
Clasificación Internacional G01N 33/68 Nº de solicitud 22799088 Solicitante ASTON SCI INC Inventor/a DISIS MARY L
The present disclosure relates to a method for predicting reactivity of a HER2-ICD DNA vaccine composition, that is, the acquisition of immunogenicity and the therapeutic efficacy thereof, by measuring immunogenicity against a HER2-ICD antigen before vaccination. Additionally, by using the method for predicting reactivity, according to the present disclosure, a DNA vaccination target may be selected.

4.20240082380Methods for Enhancing Efficacy of a Vaccine by Administering an IL-4R Antagonist
US - 14.03.2024
Clasificación Internacional A61K 39/02 Nº de solicitud 18218459 Solicitante Regeneron Pharmaceuticals, Inc. Inventor/a Lisa Purcell
The present invention provides methods for enhancing the efficacy and/or safety of a vaccine. In certain embodiments, the invention provides methods to increase or potentiate the immune response to a vaccine in a subject in need thereof. The methods of the present invention comprise administering to a subject in need thereof an interleukin-4 receptor (IL-4R) antagonist such as an anti-IL-4R antibody in combination with said vaccine. In certain embodiments, the methods of the present invention are used to afford enhanced protection to an infectious disease such as whooping cough.

5.WO/2024/054159NOVEL VACCINE COMPOSITION WITH IMPROVED PROTECTION EFFICACY
WO - 14.03.2024
Clasificación Internacional C07K 7/08 Nº de solicitud PCT/SG2023/050610 Solicitante NATIONAL UNIVERSITY OF SINGAPORE Inventor/a ST. JOHN, Ashley, Lauren
The present invention relates to vaccine development. In particular, the present invention provides a novel vaccine composition formulated for mucosal delivery comprising a virus antigenic polypeptide and a mast cell-activating adjuvant, a kit comprising said composition and methods of use, such as for inducing an immune response in a subject for therapeutic or prophylactic purposes. More particularly, the mast cell-activating adjuvant comprises a peptide of Formula (I); R_1- I-N-L-K-A-X_6-A-A-L-A-K-X_{12}-X_{13}-L-R_2 (SEQ ID NO: 1) wherein X_6 is W, L, F, or I; X_{12} is W, L, F, Y, M, I, C, A, V, Q, S, R, H, N, E, or G; X_{13} is C, L, W, F, or M; R_1 is absent or Ac; and R_2 is NH_2 or OH; or analogues or salts thereof.

6.20240084310RECOMBINANT EXPRESSION VECTOR FOR PRODUCTION OF ENCAPSULIN-BASED VACCINE AND METHOD FOR MANUFACTURING THE SAME
US - 14.03.2024
Clasificación Internacional C12N 15/62 Nº de solicitud 18000381 Solicitante INTHERA INC. Inventor/a Deog Young CHOI
The present invention relates to an encapsulin protein and a fusion protein comprising the same, and more specifically to a recombinant expression vector for vaccine production, and a preparation method therefor, the vector comprising polynucleotides that encode a target protein, an encapsulin protein and an RNA interacting domain (RID) protein, so as to improve the expression efficiency of the target protein, and thus enables a water-soluble vaccine to be produced in a highly efficient manner and a large target protein to be used.

7.WO/2024/052882IMMUNOGENIC VACCINE COMPOSITION INCORPORATING A SAPONIN
WO - 14.03.2024

Clasificación Internacional A61K 9/00 Nº de solicitud PCT/IB2023/058945 Solicitante ACCESS TO ADVANCED HEALTH INSTITUTE Inventor/a FOX, Christopher Bradford
Provided herein are lipid-based nanoparticle compositions, and methods of making and using thereof. The compositions include nanostructured lipid carriers (NLC), liposomes, lipid nanoparticles (LNPs), solid lipid nanoparticles (SLNs), oil-in-water emulsions, cationic lipid–nucleic acid complexes, cationic nanoemulsions (CNE), charge-altering releasable transporters (CARTs), or polymeric nanoparticles, and further comprise a saponin adjuvant, and optionally a sterol and/or a bioactive agent. The bioactive agent can be self-amplifying RNA. The compositions are capable of delivery of a biomolecule to a cell for the generation of an immune response, for example, for vaccine, therapeutic, allergy desensitization, or diagnostic uses. Compositions and methods related to making the compositions and using the compositions for stimulating an immune response are also provided.

8.WO/2024/052336A LIVE ATTENUATED SARS-COV-2 AND A VACCINE MADE THEREOF
WO - 14.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2023/074314 Solicitante FREIE UNIVERSITÄT BERLIN Inventor/a TRIMPERT, Jakob
The invention relates to a polynucleotide encoding a) severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike protein; and/or b) at least one non-structural SARS-CoV-2 protein selected from the group consisting of non-structural protein 7, non-structural protein 8, non-structural protein 9, non-structural protein 10, non-structural protein 11, non-structural protein 12, an endoribonuclease, and a 2'-O-methyltransferase, wherein the polynucleotide comprises or consists of at least one sequence part comprising codon-pair deoptimizations in comparison to the SARS-CoV-2 genome, and wherein the polynucleotide further comprises a furin cleavage site modification resulting in a loss of a furin cleavage site being naturally present in the SARS-CoV-2 genome. The invention further relates to a live attenuated SARS- CoV-2 comprising this polynucleotide, to a vaccine comprising this live attenuated SARS-CoV-2, as well as to associated methods.

9.4335455IMPFSTOFFE MIT SCHWEINEPATHOGENEN ZUR ASSOZIIERTEN NICHT GEMISCHTEN VERWENDUNG
EP - 13.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 23217834 Solicitante INTERVET INT BV Inventor/a WITVLIET MAARTEN HENDRIK
The present invention pertains to a combination of a first vaccine comprising non-replicating immunogen of porcine circo virus type 2 (PCV2), non-replicating immunogen of Mycoplasma hyopneumoniae, and non-replicating immunogen of Lawsonia intracellularis, and a second vaccine comprising live attenuated porcine reproductive and respiratory syndrome (PRRS) virus, for use in prophylactically treating an animal against an infection with porcine circo virus type 2, an infection with Mycoplasma hyopneumoniae, an infection with Lawsonia intracellularis and an infection with PRRS virus, by associated non-mixed administration of the first vaccine and the second vaccine to the animal, wherein the associated non-mixed administration occurs simultaneously and wherein the first and second vaccine are administered by a single dose.

10.WO/2024/052732METHOD AND APPARATUS FOR EPIDERMAL DELIVERY OF POWDERED MEDICAMENTS
WO - 14.03.2024
Clasificación Internacional A61M 5/30 Nº de solicitud PCT/IB2023/000520 Solicitante PARTICLE VACCINE CANADA LTD. Inventor/a RODRIGUEZ, Christopher
Apparatus for transdermal delivery of a powdered agent to a patient, the apparatus comprising a fluid source comprising a fluid; a nozzle extending distally from the fluid source, the nozzle comprising a

proximal end, a distal end and a lumen extending from the proximal end to the distal end; a blister containing a powdered agent disposed within the lumen of the nozzle; and an actuation element for releasing the fluid from the fluid source, wherein the actuation element causes the released fluid to be propelled through the blister with sufficient pressure to entrain the powdered agent into the released fluid and move the entrained powdered agent through the lumen of the nozzle and out the distal end of the nozzle.

11.20240082384Boosting Immunogenicity of Vaccines Using Saponins and Agonists of the Intracellular Stimulator of Interferon Genes Pathway
US - 14.03.2024
Clasificación Internacional A61K 39/145 Nº de solicitud 18511859 Solicitante Emory University Inventor/a Richard Compans
This disclosure relates to boosting the immunogenicity of vaccines using an adjuvant combination comprising a saponin and an agonist of the intracellular stimulator of interferon genes pathway. In certain embodiments, the vaccine comprises an inactivated virus, attenuated virus, virus protein, virus like particle, or virosome. In certain embodiments, the human subject is of advanced age or elderly. In certain embodiments, the viral vaccine is an influenza vaccine.

12.20240082374Cancer Vaccines and Methods of Treatment Using The Same
US - 14.03.2024
Clasificación Internacional A61K 39/00 Nº de solicitud 18472640 Solicitante Inovio Pharmaceuticals, Inc. Inventor/a Jian Yan
The invention provides a vaccine comprising a nucleic acid molecule that encodes a dog telomerase reverse transcriptase (dTERT) antigen, as well as methods of using the vaccine to induce an immune response against a TERT and to treat cancer in a mammal.

13.20240083954COMPOSITIONS AND METHODS RELATED TO HIV-1 IMMUNOGENS
US - 14.03.2024
Clasificación Internacional C07K 14/16 Nº de solicitud 18449739 Solicitante THE SCRIPPS RESEARCH INSTITUTE Inventor/a Leopold Kong
The present invention provides HIV-1 vaccine immunogens. Some of the immunogens contain a soluble gp140-derived protein that harbors a modified N-terminus of the HR1 region in gp41. Some of the immunogens contain an HIV-1 Env-derived trimer protein that is presented on a nanoparticle platform. The invention also provides methods of using the HIV-1 vaccine immunogens for eliciting an immune response or treating HIV infections.

14.WO/2024/053924METHOD FOR ENHANCING ANTIBODY FORMATION FUNCTION BY UTILIZATION OF BIO INFORMATIVE ENERGY LIGHT
WO - 14.03.2024
Clasificación Internacional A61N 5/06 Nº de solicitud PCT/KR2023/012876 Solicitante BIOLIGHT CORPORATION Inventor/a PARK, Mi Jung
To implement the above-described task, according to various embodiments of the present invention, disclosed is a method for enhancing an antibody formation function by utilization of bio informative energy light. The method comprises a step of administering vaccine to mammals and a step of radiating bio informative energy light onto the vaccine-administered mammals, wherein the bio informative energy light has an intensity of 10^{-18} to 10^{-13} W/cm^2.

15.20240085418Bovine Herpesvirus Detection and Treatment
US - 14.03.2024

Clasificación Internacional G01N 33/569 Nº de solicitud 17688366 Solicitante Shafiqul Islam Chowdhury Inventor/a Shafiqul Islam Chowdhury
Methods, compositions, devices, and kits are described herein that are useful for detecting BoHV-1 infection in animals and/or for distinguishing animals that may benefit from administration of BoHV-1 tmv vaccine.

16.20240082393ADJUVANTS TO STIMULATE BROAD AND PERSISTENT INNATE IMMUNITY AGAINST DIVERSE ANTIGENS
US - 14.03.2024
Clasificación Internacional A61K 39/39 Nº de solicitud 18270996 Solicitante The Board of Trustees of the Leland Stanford Junior University Inventor/a Bali Pulendran
Methods are provided herein for modulating the epigenome of immune cells by administration of an immunostimulatory composition comprising adjuvants, e.g. vaccine adjuvants, to stimulate broad and persistent innate immunity against pathogens unrelated to antigens present in the composition.

17.WO/2024/053648LIPID NANOPARTICLES
WO - 14.03.2024
Clasificación Internacional C07D 309/10 Nº de solicitud PCT/JP2023/032416 Solicitante KYUSHU UNIVERSITY, NATIONAL UNIVERSITY CORPORATION Inventor/a HIRAI, Go
The present invention provides candidate molecules for constituent components of various lipid nanoparticles. The present invention pertains to a C-glycoside glycolipid compound represented by formula (I) or formula (II), a lipid nanoparticle containing the same, and a pharmaceutical composition containing the lipid nanoparticles, particularly a vaccine.

18.WO/2024/051150HUMAN CYTOMEGALOVIRUS RECOMBINANT VECTOR, PREPARATION METHOD THEREFOR, AND USE THEREOF
WO - 14.03.2024
Clasificación Internacional C12N 15/861 Nº de solicitud PCT/CN2023/083393 Solicitante QINGDAO UNIVERSITY Inventor/a WANG, Bin
The present invention provides a human cytomegalovirus recombinant vector, a preparation method therefor, and use thereof. The recombinant vector comprises one or more of the nucleotide sequence fragments encoded by SEQ ID NO. 1, SEQ ID NO. 2, SEQ ID NO. 3, and SEQ ID NO. 4. The human cytomegalovirus recombinant vector provided by the present invention can express dominant antigen epitopes of the human cytomegalovirus proteins PP65, PP150, IE1, gB, and gH, has good immunogenicity in both mouse models and clinical population samples, and can induce the organism to generate a strong cellular immune response in a short time. After 14 days of single immunization, killing T cells and auxiliary T cells can be significantly activated, and after 60 days of single immunization, memory T cells are effectively activated, which shows that the vaccine can elicit efficient anti-human cytomegalovirus immune responses in the organism. In addition, the vaccine is fast and simple to prepare and thus can be mass-produced in a short time.

19.20240082412EXPEC GLYCOCONJUGATE VACCINE FORMULATIONS
US - 14.03.2024
Clasificación Internacional A61K 47/64 Nº de solicitud 18503294 Solicitante Janssen Pharmaceuticals, Inc. Inventor/a Olga LABOVITIADI
Compositions and methods for inducing an immune response against extra-intestinal pathogenic *Escherichia coli* (ExPEC) are described. In particular, multivalent vaccines containing O-antigen polysaccharide covalently bound to an exotoxin A of *Pseudomonas aeruginosa* (EPA) carrier protein that can withstand multiple environmental stresses are describe.

20.4333884SARS-COV-2-MULTIEPITOP-IMPFSTOFFE
EP - 13.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 22798476 Solicitante UNIV BRITISH COLUMBIA Inventor/a JEFFERIES WILFRED
The present invention provides multi-epitope vaccines comprising or capable of expressing one or more concatemers of epitopes from a viral pathogen, namely, SARS-CoV-2. wherein at least a portion of the epitopes are from conserved viral proteins and wherein the vaccine comprises or expresses epitopes for all MHC I and MHC II alleles with a frequency > 1 % in the target population.

21.20240083946SELF-ASSEMBLING PEPTIDES, NANOFIBERS, AND METHODS OF USE
US - 14.03.2024
Clasificación Internacional C07K 7/08 Nº de solicitud 18280351 Solicitante The Board of Regents of the University of Oklahoma Inventor/a Handan Acar
Compositions of anionic and cationic peptides which co-assemble under suitable conditions to form peptide nanostructures, methods of assembling the peptide nanostructures, and methods of use of the peptide nanostructures in hydrogels and as vaccines and vaccine adjuvants. The peptide nanostructures demonstrate stability once self-assembled and are biocompatible and have therapeutic functionality, particularly when equipped with additional functional features such as ligands, fluorophores, antigens, drugs, or other bioactive compounds.

22.20240084269DEVELOPMENT OF DENGUE VIRUS VACCINE COMPONENTS
US - 14.03.2024
Clasificación Internacional C12N 7/04 Nº de solicitud 18355265 Solicitante The Government of the USA as represented by the Secretary, Dept. of Health and Human Services Inventor/a 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.

23.20240082376TRI-SEGMENTED ARENAVIRUSES AS VACCINE VECTORS
US - 14.03.2024
Clasificación Internacional A61K 39/00 Nº de solicitud 18507584 Solicitante UNIVERSITÉ DE GENÈVE Inventor/a Daniel David Pinschewer
The present application relates to arenaviruses with rearrangements of their open reading frames (“ORF”) in their genomes. In particular, described herein is a modified arenavirus genomic segment, wherein the arenavirus genomic segment is engineered to carry a viral ORF in a position other than the wild-type position of the ORF. Also described herein are trisegmented arenavirus particles comprising one L segment and two S segments or two L segments and one S segment. The arenavirus, described herein may be suitable for vaccines and/or treatment of diseases and/or for the use in immunotherapies.

24.WO/2024/052826AFRICAN HORSE SICKNESS VIRUS (AHSV) VIRAL PROTEIN 2 (VP2) FUSION PROTEINS
WO - 14.03.2024
Clasificación Internacional A61K 38/00 Nº de solicitud PCT/IB2023/058808 Solicitante CSIR Inventor/a O'KENNEDY, Martha Magaretha

This invention relates to a plant-produced African horse sickness virus (AHSV) VP2 fusion protein and to uses of the VP2 fusion protein in a vaccine and/or diagnostic test. The VP2 fusion protein, comprises of an AHSV VP2 polypeptide which is fused to a synthetic peptide which includes a thrombin cleavage site, a linker, a histidine tag and an endoplasmic reticulum retention signal. The invention specifically relates to the fusion proteins described herein, methods of producing the fusion proteins in plant cells and pharmaceutical compositions comprising the fusion proteins.

25.20240082391ADJUVANT COMPRISING A GLYCOARCHAEOL AND AN IMMUNOSTIMULANT
US - 14.03.2024
Clasificación Internacional A61K 39/39 Nº de solicitud 18260133 Solicitante NATIONAL RESEARCH COUNCIL OF CANADA Inventor/a Yimei JIA
Provided is an adjuvant composition comprising a glycoarchaeol and at least one immunostimulantselected from a Toll-like receptor (TLR) agonist and a saponin. The glycoarchaeol and/orimmunostimulant may be present as a pharmaceutically acceptable salt. The adjuvant compositionmay be comprised together with an antigen in an immunogenic composition, such as a vaccine composition, which may be for use to induce an immune response in a subject. Further provided isuse of the immunogenic composition to induce an immune response in a subject, particularly animmune response that comprises both a cell-mediated response and a humoral response.

26.WO/2024/051696COMPOUND FOR RNA CAPPING AND USE THEREOF
WO - 14.03.2024
Clasificación Internacional C07H 19/20 Nº de solicitud PCT/CN2023/117043 Solicitante GUANGZHOU HENOVCOM BIOSCIENCE CO., LTD. Inventor/a ZHANG, Jiancun
The present invention relates to a compound for RNA capping and use thereof and belongs to the technical field of genetic engineering. The compound has a structure represented by formula I. The compound is used for capping an mRNA5' end, and the capping efficiency is good. The capped mRNA can stably express a protein with a high yield. By using the compound of the present invention as a cap structure to prepare an RNA vaccine or an RNA medicament, the cost can be greatly reduced. The compound of the present invention has wide application prospects in preparing RNA vaccines or RNA medicaments.

27.20240083947PEPTIDES, COMBINATION OF PEPTIDES, AND CELL BASED MEDICAMENTS FOR USE IN IMMUNOTHERAPY AGAINST URINARY BLADDER CANCER AND OTHER CANCERS
US - 14.03.2024
Clasificación Internacional C07K 7/08 Nº de solicitud 18345700 Solicitante Immatics Biotechnologies GmbH Inventor/a Andrea MAHR
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

28.20240083969IMMUNOTHERAPY WITH B*07 RESTRICTED PEPTIDES AND COMBINATION OF PEPTIDES AGAINST CANCERS AND RELATED METHODS
US - 14.03.2024
Clasificación Internacional C07K 14/725 Nº de solicitud 18321820 Solicitante Immatics Biotechnologies GmbH Inventor/a Heiko SCHUSTER

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.

29.4333886NICHTVIRALE DNA-VEKTOREN ZUR VERABREICHUNG VON IMPFSTOFFEN
EP - 13.03.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 22799655 Solicitante GENERATION BIO CO Inventor/a SAMAYOA PHILLIP
The application describes methods and compositions comprising ceDNA vectors useful for the expression of antigens and immunogenic peptides in a cell, tissue or subject, and methods of treatment and/or prevention of various infectious diseases, autoimmune disorders and cancers.

30.20240082387FUSION PROTEIN COMPRISING CORONAVIRUS-DERIVED RECEPTOR-BINDING DOMAIN AND NUCLEOCAPSID PROTEIN, AND USE THEREOF
US - 14.03.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18044245 Solicitante GI CELL, INC. Inventor/a Myoung Ho JANG
The present invention relates to a fusion protein comprising a SARS-CoV-2-derived receptor-binding domain and a nucleocapsid protein, and the use thereof. The fusion protein comprising a coronavirus-derived receptor-binding domain and a nucleocapsid protein is highly applicable to a multivalent vaccine composition having greatly improved in-vivo half-life and remarkably superior efficacy compared to an immunogenic composition comprising only a receptor-binding domain. In particular, the fusion protein can greatly improve the titer of the coronavirus-specific antibody formation and T-cell immune response, and is thus useful for the prevention and treatment of coronaviruses comprising SARS-CoV-2.

31.20240082372IMMUNOTHERAPY TARGETING TUMOR NEOANTIGENIC PEPTIDES
US - 14.03.2024
Clasificación Internacional A61K 39/00 Nº de solicitud 17639568 Solicitante INSTITUT CURIE Inventor/a Sebastian AMIGORENA
The present disclosure relates to a method for selecting a tumor neoantigenic peptide wherein said method comprises: —a step of identifying, among mRNA sequences from cancer cells of a subject, a fusion transcript sequence comprising a transposable element (TE) sequence and an exonic sequence, and including an open reading frame (ORF), and —a step of selecting a tumor neoantigenic peptide of at least 8 amino acids, encoded by a part of said ORF of the fusion transcript sequence, wherein said ORF overlaps the junction between the TE and the exonic sequence, is pure TE and/or is non-canonical, and wherein said tumor neoantigenic peptide binds to at least one Major Histocompatibility Complex (MHC) molecule of said subject. The present disclosure also relates to tumor neoantigenic peptide obtained according to the present method, vaccine or immunogenic composition, antibodies and immune cells derived thereof and their use in therapy of cancer.

32.20240087675METHODS FOR OPTIMIZING TUMOR VACCINE ANTIGEN COVERAGE FOR HETEROGENOUS MALIGNANCIES
US - 14.03.2024
Clasificación Internacional G16B 15/20 Nº de solicitud 17765352 Solicitante Amazon Technologies, Inc. Inventor/a Layne Christopher PRICE

Disclosed herein are methods for selecting tumor-specific neoantigens from a tumor of a subject that are suitable for subject-specific immunogenic compositions.

33.WO/2024/051266MRNA FOR EXPRESSING VARICELLA-ZOSTER VIRUS ANTIGEN PROTEIN AND USE THEREOF
WO - 14.03.2024
Clasificación Internacional C12N 15/38 Nº de solicitud PCT/CN2023/101292 Solicitante GRAND THERAVAC LIFE SCIENCES (NANJING) CO., LTD. Inventor/a GE, Jun
Disclosed are an mRNA for expressing the varicella-zoster virus antigen protein and use thereof. The mRNA comprises a 5' untranslated region, an open reading frame, a 3' untranslated region, and a polyadenylic acid tail in sequence in the direction from 5' to 3', wherein the nucleotide sequence of the 5' untranslated region is represented by any of SEQ ID NOs. 23, 24, 25, 26 and 27; the nucleotide sequence of the 3' untranslated region is represented by any of SEQ ID NOs. 28 and 29; and the open reading frame encodes the varicella-zoster virus antigen protein. The average protein expression level of the mRNA with optimized sequences obtained by the present invention is relatively high. Pharmacodynamic verification experiments have shown that the mRNA has an immunostimulation effect; when the mRNA is wrapped with LNP to form mRNA-vector particles, the immune effect can be equivalent to that of a recombinant protein antigen. The mRNA can be used for preparing an mRNA vaccine.

34.WO/2024/053934EMULSION FORMULATION ADJUVANT COMPOSITION AND PREPARATION METHOD THEREFOR
WO - 14.03.2024
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/KR2023/013016 Solicitante CHA VACCINE RESEARCH INSTITUTE CO., LTD Inventor/a YUM, Jung Sun
The present invention relates to emulsion formulation adjuvant composition and a preparation method therefor. The emulsion formulation adjuvant composition of the present invention is prepared by adding TLR2 and/or TLR3, TLR7, TLR9 ligands or lipids to an O/W-type emulsion-based formulation containing squalene, alpha-tocopherol, and surfactants having proven safety and efficacy, and the ratio of components of each composition is optimized to significantly increase humoral and cellular immune responses, and thus the present invention can be effectively used to prepare various vaccines for viruses including respiratory viruses and the like.

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