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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.

IFV INSTITUTO FINLAY DE VACUNAS

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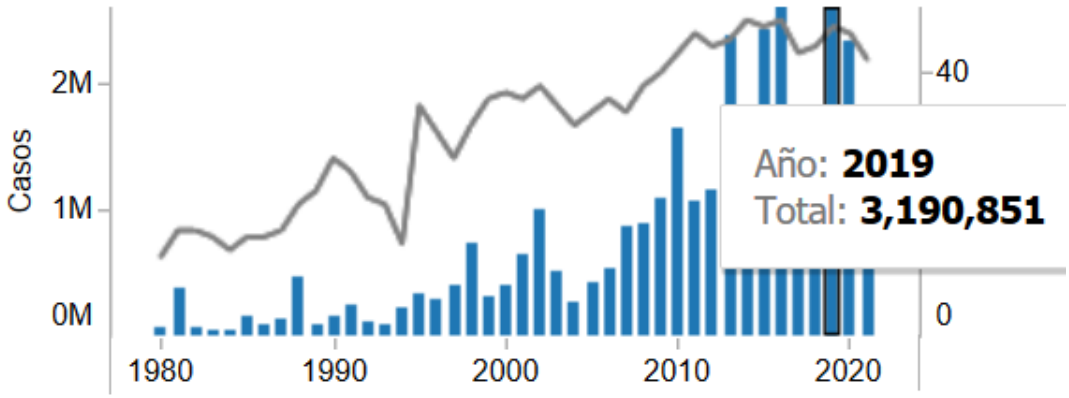
VACUNAS CONTRA EL DENGUE

El dengue se transmite a través de la picadura de un mosquito infectado. Es una enfermedad que afecta personas de todas las edades, con síntomas que varían entre una fiebre leve a una fiebre incapacitante, acompañado de dolor intenso de cabeza, dolor detrás de los ojos, dolor en músculos y articulaciones, y eritema. La enfermedad puede progresar a formas graves, caracterizada principalmente por choque, dificultad respiratoria y/o daño grave de órganos. El dengue tiene un comportamiento estacionario, es decir, en el hemisferio Sur la mayoría de los casos ocurren durante la primera mitad del año, en cambio, en el hemisferio Norte, los casos ocurren mayormente en la segunda mitad. Este patrón de comportamiento corresponde a los meses más cálidos y lluviosos. En las Américas, el vector principal responsable de la trasmisión del dengue es el mosquito Aedes aegypti.[1]

Casi la mitad de la población mundial, alrededor de 4 billones de personas, vive en áreas con riesgo de dengue. El dengue es a menudo una causa principal de enfermedad en las áreas con riesgo.[2] El número de casos de dengue en las Américas se ha incrementado en las últimas cuatro décadas, en tanto pasó de 1.5 millones de casos acumulados en la década del 80, a 16.2 millones en la década del 2010-2019.

Casos reportados de dengue en el periodo 1980-2021

Región	Total	Confirmados	D. Grave	Muertes
Las Américas	1,267,151	526,734	3,273	437



Fuente: OPS/OMS. Dengue 2021.

Como se puede observar en el gráfico el año 2019 fue el de mayor incidencia de la enfermedad en la región de las Américas. En esta cifra sin precedentes están incluidos 28,176 casos graves y 1,535 muertes.[3]

Los cuatro serotipos de dengue (DENV-1, DENV-2, DENV-3 y DEN-V 4) circulan a lo largo de las Américas y en algunos casos circulan simultáneamente. La infección por un serotipo, seguida por otra infección con un serotipo diferente aumenta el riesgo de una persona de padecer dengue grave y hasta morir.[4]

Según la Organización Mundial de la Salud , hay aproximadamente 390 millones de infecciones de dengue por año en todo el mundo, con una tasa de mortalidad estimada de 20.000 a 25.000 por año, principalmente en niños. Antes de 1970, solo nueve países habían experimentado epidemias graves de dengue, mientras que hoy en día la enfermedad es endémica en más de 100 países, incluso en Europa.[5]

Vacunas contra el virus del dengue

En el año 1984, el Director de la Organización Mundial de la Salud (OMS) creó un comité para el desarrollo de vacunas contra el Dengue con el objetivo de chequear la marcha del programa de vacunas atenuadas que se estaba llevando a cabo y estimular la participación de diferentes laboratorios en el desarrollo de vacunas contra dicho patógeno mediante el uso de la tecnología de ADN recombinante.[6]

En el camino de obtención de una vacuna contra este patógeno, se presentaron varios problemas: la replicación insuficiente de estos virus como para formular una vacuna inactivada económica, la no existencia de un modelo animal que reproduzca los síntomas que provoca la enfermedad en humanos y el hecho de que para lograr una vacuna satisfactoria, ésta debe ser tetravalente para evitar la inducción de inmunoamplificación durante infecciones subsecuentes por serotipos heterólogos y así minimizar el riesgo de Fiebre Hemorrágica del Dengue (FHD)/ Síndrome de Choque por Dengue (SCD).[7]

Fue entonces en diciembre de 2015 que se aprobó la primera vacuna contra el dengue Dengvaxia® (CYD-TDV), desarrollada por Sanofi Pasteur. La vacuna es tetravalente, se elaboró con tecnología de ADN recombinante y remplaza varias secuencias genéticas en el genoma de virus de la vacuna contra la fiebre amarilla con las secuencias homólogas de los cuatro serotipos de virus del dengue.[8] Actúa «enseñando» al sistema inmunitario (las defensas naturales del organismo) a defenderse frente a una enfermedad. Contiene virus debilitados que no provocan la enfermedad. Cuando se vacuna a una persona, su sistema inmunitario reconoce al virus de la vacuna como «extraño» y produce anticuerpos contra él. En el futuro, cuando la persona se expone de nuevo a este u otros virus similares, estos anticuerpos, junto con otros componentes del sistema inmunitario, serán capaces de matar a los virus y contribuirán a proteger frente a la enfermedad.[9]

En noviembre de 2017 se publicaron los resultados de un nuevo análisis para determinar retrospectivamente el estado serológico en el momento de la vacunación. El análisis reveló que el subgrupo de participantes en el ensayo que eran seronegativos en el momento de la primera vacunación corría mayor riesgo de padecer dengue grave y ser hospitalizado por dengue que el de los participantes no vacunados. Por ello, la vacuna CYD-TDV va dirigida a personas de 6 a 45 años residentes en zonas endémicas que hayan tenido al menos un episodio de infección previa por el virus del dengue.[10]

Dengvaxia recibió una autorización de comercialización válida en toda la Unión Europea (UE) el 12 de diciembre de 2018.[11]

Este año, una nueva vacuna ha recibido el visto bueno por el comité de medicamentos humanos de la EMA: Takeda, desarrollada por Takeda Pharmaceutical Co Ltd. La vacuna tetravalente de virus atenuado se utiliza para prevenir la enfermedad causada por los serotipos 1, 2, 3 y 4 del virus del dengue en personas a partir de los 4 años de edad.

Esta evaluación positiva otorgada por la EMA es particular, ya que revisa simultáneamente un medicamento destinado al mercado de la Unión Europea y a países fuera de ella. La iniciativa de la EMA tiene como objetivo “hacer que los medicamentos y vacunas innovadores o genéricos, que aborden necesidades médicas no satisfechas o que sean de gran interés para la salud pública, estén disponibles en Europa y en todo el mundo más rápido, evitando la duplicación de esfuerzos de reguladores”.

La seguridad de la nueva vacuna, además de los beneficios, fue evaluada en 19 ensayos clínicos. Más de 27.000 personas de entre 15 meses y 60 años participaron del estudio, tanto de regiones endémicas y no endémicas.

Según lo reportado por la EMA, los resultados de los estudios mostraron que la vacuna tetravalente contra

el dengue previene la fiebre, la enfermedad grave y la hospitalización causada por cualquiera de los cuatro serotipos del virus del dengue.

Como todo medicamento, también fueron informados los eventos adversos, entre ellos: dolor en el lugar de la inyección, dolores de cabeza, dolor muscular y malestar general. Estos eventos fueron observados en cualquiera de las dosis otorgadas.

La vacuna fue evaluada por la EMA, la OMS y los reguladores nacionales de los países objetivo en un programa denominado EU- Medicine for all (EU-M4All). [12]

La iniciativa de la Agencia Europea del Medicamento (EMA) para la revisión paralela tiene como objetivo que los medicamentos y vacunas de gran interés para la salud pública estén disponibles en Europa y en todo el mundo más rápido.

En este sentido, el Director del Instituto Universitario de Enfermedades Tropicales y Salud Pública de Canarias de la Universidad de La Laguna Jacob Lorenzo-Morales explica que "la aprobación del empleo de esta vacuna tetravalente es otro ejemplo claro de que la ciencia es clave para la protección de la salud humana, sobre todo en el caso de enfermedades tropicales y/o emergentes como esta."[13]

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Noticias en la Web

Vacunas cubanas contra la COVID-19 llegan a Belarús

12 sep. El Ministerio de Salud de Belarús publicó este miércoles una nota sobre la llegada al país europeo de la vacuna cubana contra la COVID-19 Soberana Plus, del Instituto Finlay de Vacunas, para el tratamiento a la población belorrusa.

El sitio de la Cancillería de ese país publicó también una nota sobre el registro por su agencia regulatoria de la vacuna Soberana 02.

En julio de este año, varias instituciones de Belarús y el Grupo Empresarial BioCubaFarma firmaron un memorándum de entendimiento para el desarrollo científico-tecnológico de ambos países.

El embajador de Cuba en Belarús, Santiago Pérez, afirmó este miércoles que la prensa belorrusa ha destacado que las vacunas cubanas han demostrado su eficacia contra la infección por coronavirus en un estudio clínico.

Fuente: Cubadebate. Disponible en https://bit.ly/3F7bHQK

Bio Farma projects IndoVac manufacturing 100 million doses in 2023

Sep 13. President Director of state-owned pharmaceutical company PT Bio Farma Honesti Basyir stated that production capacity of the locally made COVID-19 vaccine, IndoVac, can be increased to 100 million doses in 2023 if the need arises.

"Since the need is high not only for Indonesia, so there is a plan that Indonesia will provide grants to certain countries. If needed, in 2023, we will also increase the capacity to 100 million doses," Basyir noted in an interview aired on the Presidential Secretariat's YouTube channel on Thursday.

President Joko Widodo (Jokowi) launched the IndoVac vaccine at the PT Bio Farma factory, Bandung, West Java, on Thursday. President Jokowi also monitored the first injection of the vaccine.

Basyir explained that IndoVac could be used as a primary-dose vaccine for people, who have not received the COVID-19 vaccine at all. The vaccine can also serve as a booster dose for adolescents and children.

"We are preparing clinical trials, so that it (the vaccine) can be provided to adolescents and children. Of course, we will coordinate with the Ministry of Health, but indeed, the vaccine is designed to be able to be used for people aged six to 11 years, 12 to 17 years, and 18 years and above," he explained.

According to Basyir, IndoVac vaccine production can be a milestone for Bio Farma and also Indonesia, as the country currently has the facilities and capabilities for producing COVID-19 vaccines.

As part of the efforts to boost community immunity against COVID-19, the Indonesian government launched a nationwide vaccination program on January 13, 2021, targeting as many as 234,666,020 citizens.

According to data provided by the COVID-19 Handling Task Force, as of October 12, 2022, as many as 204,722,385 Indonesians had received the first vaccine dose, 171,345,141 were administered the second dose, 64,111,815 had taken the third dose or first booster, and 641,003 had received the fourth dose or second booster.

Fuente: Antara News. Disponible en https://bit.ly/3ssWxOi

La vacuna combinada Novavax COVID-19-gripe induce respuestas de anticuerpos y células T

14 oct. Novavax, Inc. (Nasdaq: NVAX), una empresa de biotecnología dedicada al desarrollo y comercialización de vacunas de próxima generación contra enfermedades infecciosas graves, ha anunciado hoy los resultados positivos del ensayo clínico de fase 1/2 de su candidato a vacuna combinada COVID-19-gripe (CIC). Los datos demostraron la capacidad de la vacuna CIC de generar respuestas inmunitarias, tanto de anticuerpos como de células T CD4+ polifuncionales (linfocitos que ayudan a coordinar la respuesta inmunitaria) contra el coronavirus del síndrome respiratorio agudo severo 2 (SARS-CoV-2) y las cepas de gripe homólogas y heterólogas. La CIC combina la vacuna COVID-19 de Novavax (NVX-CoV2373) y su vacuna candidata tetravalente contra la gripe.

Las formulaciones de la vacuna CIC demostraron la inducción de respuestas de células T CD4+ polifuncionales contra el SARS-CoV-2 y las cepas de gripe homólogas y heterólogas a niveles comparables a las formulaciones de referencia del NVX-CoV2373 y de la vacuna tetravalente contra la gripe. Se ha demostrado previamente que NVX-CoV2373 induce respuestas funcionales de células T CD4+ y CD8+ específicas para el SARS-CoV-2, y se ha demostrado previamente que la vacuna tetravalente contra la gripe de Novavax induce respuestas polifuncionales de células T CD4+ de reacción cruzada. Se cree que las respuestas de las células T desempeñan un papel importante en el control del sistema inmunitario de las infecciones por SARS-CoV-2 y el virus de la gripe (por ejemplo, limitando la gravedad de la enfermedad y eliminando la infección), y en el aumento de la amplitud de la inmunidad.

Las formulaciones de la vacuna CIC generaron sólidas respuestas de anticuerpos contra los antígenos del SARS-CoV-2 y de la gripe, y las respuestas de los anticuerpos se modelaron utilizando un enfoque de Diseño de Experimentos (DoE) para ayudar a optimizar la futura selección de dosis.

El perfil de seguridad y tolerabilidad de la vacuna CIC fue consistente con la vacuna prototipo NVX-CoV2373 independiente y las formulaciones de referencia de la vacuna tetravalente contra la gripe en el ensayo. La vacuna CIC fue generalmente bien tolerada. Los efectos adversos graves fueron escasos y ninguno se consideró relacionado con la vacuna.

"Los resultados de hoy demuestran que nuestro candidato a vacuna combinada contra la gripe-COVID-19 es factible, bien tolerado e inmunogénico, induciendo respuestas tanto de anticuerpos como de células T", dijo el Dr. Gregory M. Glenn, presidente de Investigación y Desarrollo de Novavax. "En el momento en que

pasamos de una pandemia de SARS-CoV-2 a una circulación endémica, creemos que nuestro candidato a vacuna combinada basada en proteínas puede ayudar a hacer frente a dos amenazas mundiales para la salud pública con una sola vacuna."

"El enfoque de modelado DoE en el ensayo permitió evaluar la dosis óptima de los antígenos de COVID-19 y de la gripe para el desarrollo futuro del candidato a vacuna combinada COVID-19-gripe", dijo Vivek Shinde, M.D., MPH, Vicepresidente, Líder de Desarrollo Clínico, CIC para Adultos Mayores, Vacunas contra la gripe y RSV, Novavax, quien presentó los resultados. "Estos resultados preliminares aportan importantes conocimientos sobre los regímenes de dosis que pueden aplicarse de cara al ensayo de confirmación de fase 2 que se realizará a finales de este año."

El enfoque basado en el modelado DoE utilizado para diseñar el ensayo permitió un ajuste más potente de la selección de la dosis tanto de los antígenos de la COVID-19 como de la gripe para su posterior desarrollo en comparación con los enfoques tradicionales. Estos conocimientos sobre las dosis servirán de base para el ensayo de confirmación de fase 2 que se iniciará a finales de 2022.

Las dos vacunas basadas en proteínas utilizadas en el ensayo se formularon con el adyuvante Matrix-M™, patentado por Novavax y basado en saponina, que está diseñado para mejorar la respuesta inmunitaria y estimular altos niveles de anticuerpos neutralizantes.

Los resultados del ensayo se han presentado hoy en el Congreso Mundial de Vacunas (WVC) Europa 2022. Los resultados de los ensayos iniciales anteriores se presentaron en WVC en abril de 2022.

Acerca del ensayo de fase 1/2 de la vacuna combinada contra COVID-19-gripe

El ensayo de fase 1/2 de la vacuna CIC evaluó una combinación del candidato a vacuna antigripal NVX-CoV2373, basado en la proteína recombinante de Novavax, y el adyuvante patentado Matrix-M, basado en saponina, en una única formulación. El ensayo evaluó la seguridad, la tolerabilidad y la respuesta inmunitaria a la CIC en 642 adultos sanos de entre 50 y 70 años. Los participantes estaban previamente infectados con el virus SARS-CoV-2 que causa la COVID-19 o habían sido vacunados con una vacuna autorizada al menos ocho semanas antes de la inscripción. Todos los participantes fueron asignados aleatoriamente a cohortes para evaluar múltiples formulaciones y se les administró la dosis el día 0 y de nuevo el día 56. El ensayo se realizó en Australia en 10 centros.

Acerca de NVX-CoV2373

NVX-CoV2373 es una vacuna basada en proteínas diseñada a partir de la primera secuencia genética del SARS-CoV-2, el virus que causa la enfermedad de la COVID-19. La vacuna fue creada utilizando la tecnología de nanopartículas recombinantes de Novavax para generar antígenos derivados de la proteína espiga del coronavirus y está formulada con Matrix-M™, el adyuvante basado en saponinas patentado de Novavax, para mejorar la respuesta inmune y estimular altos niveles de anticuerpos neutralizantes. NVX-CoV2373 contiene antígenos de proteína purificados y no puede replicarse ni causar la COVID-19.

La vacuna está empaquetada como una formulación líquida lista para usar en un vial que contiene diez dosis. El régimen de vacunación requiere dos dosis de 0,5 ml (5 mcg de antígeno y 50 mcg de adyuvante Matrix-M) administradas por vía intramuscular con 21 días de diferencia. La vacuna se almacena entre 2° y 8° Celsius, lo que permite utilizar los canales de suministro de vacunas y de cadena de frío existentes. El uso de la vacuna debe estar de acuerdo con las recomendaciones oficiales.

Novavax ha establecido asociaciones para la fabricación, comercialización y distribución de la vacuna en todo el mundo. Las autorizaciones existentes aprovechan la asociación de fabricación de Novavax con Serum Institute of India, el fabricante de vacunas más grande del mundo por volumen. Posteriormente se complementarán con datos de sitios de fabricación adicionales a lo largo de la cadena de suministro global de Novavax.

Acerca del adyuvante Matrix-M™

El adyuvante Matrix-M a base de saponina patentado de Novavax ha demostrado un efecto potente y bien tolerado al estimular la entrada de células presentadoras de antígenos en el lugar de la inyección y mejorar la presentación de antígenos en los ganglios linfáticos locales, lo que aumenta la respuesta inmunitaria.

Fuente: Cision PR Newswire. Disponible en https://prn.to/3zb9dga

Europa retrasa la autorización de la vacuna contra la COVID-19 de Sanofi

14 oct. El Comité de Medicamentos de Uso Humano (CHMP) se ha reunido durante esta semana y ya ha publicado la lista de los medicamentos que recomienda que la Agencia Europea del Medicamento (EMA) autorice. La vacuna contra el coronavirus de la francesa Sanofi se ha quedado fuera de nuevo y tendrá que esperar a la siguiente reunión que tendrá lugar el 7,8,9 y 10 de noviembre para tener otra oportunidad.

La vacuna está realizada a base de proteína recombinante y se combina con un adyuvante pandémico que actúa como potenciador de la inyección fabricado por la compañía británica GSK. Actualmente se encuentra en la fase previa a la autorización en Europa. A pesar de que no haya recibido la luz verde todavía, la compañía ya tiene sellada con la Comisión Europea la venta de hasta 300 millones de dosis y España ya ha ejercido la compra de medio millón.

Hace cuatro meses, Sanofi afirmaba a través de un ensayo clínico que su vacuna aplicada como dosis de refuerzo superaba los datos del suero de Pfizer. "El estudio independiente realizado por Assistance Publique Hôpitaux de Paris demostró que, después de la vacunación primaria con dos dosis de la vacuna de Pfizer-BioNTech, el candidato de refuerzo de próxima generación de Sanofi-GSK generó una respuesta inmunitaria más alta que el refuerzo de Pfizer-BioNTech", explicó la farmacéutica.

La vacuna de la francesa junto con la española de la farmacéutica Hipra, la coreana (Skycovion), todas desarrolladas con proteína, no han recibido todavía la mirada positiva del Comité. En cambio, otro competidor directo por tipo de tecnología, Novavax, sí que tiene el visto bueno.

Por otro lado, en la última reunión del Comité de Medicamentos de Uso Humano ha recomendado convertir la autorización de comercialización condicional del suero Vaxzevria de la farmacéutica AstraZeneca en una estándar. Además, el CHMP ha aconsejado la aprobación de diez medicamentos. Algunos de ellos van

Fuente: EL ECONOMISTA. Disponible en https://bit.ly/3Tx7IBl

FDA approves single-vial version of GSK's Menveo vaccine, ending need for reconstitution

Oct 18. GSK has won FDA approval for a single-vial formulation of its meningococcal disease vaccine Menveo, thereby ending the need for reconstitution that has existed since the product came to market in 2010.

The original two-vial presentation of Menveo must be reconstituted in a three-step process before the intramuscular injection can be administered. The liquid from the first vial is removed and mixed with the contents of the second vial. After shaking the mixture to combine, the resulting solution is withdrawn and injected.

Now, the FDA has approved a single-vial, ready-to-use version of Menveo in people aged 10 years to 55 years. The two-vial version, which is approved for use in children as young as 2 months, remains on the market. GSK is pitching the one-vial product as being more convenient to healthcare providers.

“Outbreaks of this dangerous disease continue to occur, impacting families, health systems and society. This FDA approval of Menveo one-vial presentation offers greater convenience to healthcare providers to help prevent this disease in at-risk populations in the United States,” Roger Connor, president, vaccines and global health at GSK, said in a statement.

GSK evaluated the safety of the one-vial product in two clinical trials that gave a single dose to 1,337 people aged 10 years to 44 years. The studies found “no notable differences in frequency and severity of solicited adverse reactions within 7 days following vaccination” with the one- and two-vial products.

One of the studies compared the immunogenicity of the two products. The analysis showed the one-vial formulation is noninferior to its predecessor in terms of antibody levels 28 days after vaccination. Other endpoints delivered further evidence of the comparable immune responses triggered by the products.

GSK is providing the single-vial product with a pink cap, differentiating it from the gray and orange caps of the older two-vial formulation. The storage conditions are unchanged, with both versions of the GSK vaccine requiring refrigeration at 36 degrees Fahrenheit to 46 degrees Fahrenheit.

Fuente: Fierce Pharma. Disponible en https://bit.ly/3f8Rtv8

La EMA recomienda la aprobación de la vacunas Comirnaty y Spikevax para niños a partir de 6 meses

20 oct. El comité de medicamentos humanos de la EMA (CHMP) ha recomendado extender el uso de Comirnaty y Spikevax dirigidos a la cepa original de SARS-CoV-2. El CHMP recomendó incluir el uso en niños de 6 meses a 4 años para Comirnaty y Spikevax para niños de 6 meses a 5 años. De hecho, Comirnaty y Spikevax ya están aprobados tanto en adultos como en niños de 5 y 6 años, respectivamente.

En comparación con las dosis para los grupos de edad ya autorizados, las dosis de ambas vacunas serán menores. En niños de 6 meses a 4 años de edad, Comirnaty puede administrarse como vacunación primaria que consta de tres dosis (3 microgramos); las dos primeras dosis se administran con tres semanas de diferencia, seguidas de una tercera dosis administrada al menos 8 semanas después de la segunda dosis. En niños de 6 meses a 5 años de edad, Spikevax puede administrarse como vacunación primaria que consta de dos dosis (de 25 microgramos), con cuatro semanas de diferencia.

Ambas vacunas se administran mediante inyecciones en los músculos de la parte superior del brazo o del muslo.

Para Comirnaty, un estudio principal en niños de 6 meses a 4 años de edad mostró que la respuesta inmune a la dosis más baja de Comirnaty fue comparable a la observada con la dosis más alta (30 microgramos) en 16 a 25 años de edad. Para Spikevax, un estudio principal en niños de 6 meses a 5 años de edad mostró que la respuesta inmune a la dosis más baja de Spikevax (25 microgramos) fue comparable a la observada con la dosis más alta (100 microgramos) en 18 a 25 años de edad. Ambos estudios evaluaron la respuesta inmune provocada por las vacunas midiendo el nivel de anticuerpos contra el SARS-CoV-2.

Efectos secundarios

Los efectos secundarios más comunes de ambas vacunas, fueron comparables a los observados en grupos de mayor edad. Irritabilidad, somnolencia, pérdida de apetito, sarpullido y sensibilidad en el lugar de la inyección también fueron efectos secundarios comunes en niños de 6 a 23 meses con Comirnaty. Mientras que la irritabilidad, el llanto, la pérdida de apetito y somnolencia fueron efectos secundarios comunes en niños de 6 a 36 meses con Spikevax. Para ambas vacunas, estos efectos fueron generalmente leves o moderados y mejoraron a los pocos días de la vacunación. Por tanto, el CHMP concluyó que los beneficios de Comirnaty y Spikevax en niños de 6 meses a 4 y 5 años superan los riesgos.

La seguridad y eficacia de ambas vacunas, en niños y adultos, continuarán siendo monitoreadas de cerca. Se utilizan en campañas de vacunación en los Estados miembros de la UE a través del sistema de farmacovigilancia de la UE.

Las vacunas originalmente autorizadas, Comirnaty y Spikevax, son efectivas para prevenir enfermedades graves, hospitalizaciones y muertes asociadas con la COVID-19. De hecho, continúan usándose dentro de las campañas de vacunación en la UE, en particular para las vacunas primarias. Las autoridades nacionales de los Estados miembros de la UE determinarán a quién se recomienda vacunar y cuándo, teniendo en cuenta factores como las tasas de infección y hospitalización; el riesgo para las poblaciones vulnerables; la cobertura de vacunación y la disponibilidad de la vacuna. En definitiva, las recomendaciones del CHMP se enviarán ahora a la Comisión Europea, que emitirá decisiones finales aplicables en todos los Estados miembros de la UE.

Fuente: El Global. Disponible en https://bit.ly/3sp7XCn

Los anticuerpos contra la COVID-19 pueden durar casi dos años, revela un estudio hecho en Cataluña

21 oct. Los anticuerpos anti-SARS-CoV2 pueden persistir casi dos años tras haber contraído la enfermedad de la COVID-19. Así lo revela un estudio llevado a cabo en personal sanitario en Cataluña por ISGlobal y otras instituciones. Una buena noticia y una información fundamental para futuras políticas de gestión de pandemias.

El estudio arrancó justo al inicio de la pandemia y consistió en seguir a 247 sanitarios de Cataluña, no vacunados y que habían contraído de manera sintomática la COVID-19.

El seguimiento duró veinte meses y fue coliderado por el Instituto de Salud Global de Barcelona (ISGlobal), el Institut Catalá de la Salut (ICS), Catalunya Central y el IDIAP Jordi Gol (IDIAP JG) en colaboración con la Fundación Privada Daniel Bravo Andreu (FPDBA).

La buena noticia es que los anticuerpos anti SARS-CoV2 pueden persistir hasta casi dos años derspués de la infección. Ahora bien, este estudio fue hecho antes de que llegara la variante Ómicron, pero puede dar luz sobre los procesos de inmunidad en el ser humano.

También se observó que la obesidad, la edad y el ser fumador se asocian a una menor respuesta de anticuerpos.

Los resultados de este estudio fueron publicados en la revista BMC Medicine.

Conocer cuánto dura la respuesta inmune tras la infección por SARS-CoV-2 y qué tan efectiva es ésta, son elementos clave para orientar decisiones sobre cómo controlar esta y futuras pandemias.

RFI conversó con Gemma Moncunill, investigadora del ISGlobal de Barcelona sobre este estudio.

Fuente: rfi Salud y Bienestar. Disponible en https://bit.ly/3D2uaLt

Solidarity on COVID-19 vaccines key step in bridging rights divide between rich and poor countries: UN expert

Oct 22. Inequitable vaccine availability during the global response to the COVID-19 pandemic has highlighted the great disparity between the global North and South in accessing critical resources for the fuller realisation of human rights, a UN expert said.

“The procurement by some States of enough vaccines to give their populations multiple doses undermined access and affordability around the world, particularly for at-risk populations and the vast majority of people in low-income countries,” said Obiora C. Okafor, the UN Independent Expert on human rights and international solidarity.

Presenting his report to the General Assembly yesterday, Okafor said many high-income countries were able to secure vaccine doses directly from the manufacturers, leaving others – mostly from the global South – no choice but to rely on the COVAX Facility, with its subsidised rates and long delays.

“While States in the global North have, in a large number of cases, diverted resources originally set aside for humanitarian crises or aid, far too many States in the global South have had to divert resources set aside for essential socio-economic needs,” the expert said.

For States and populations already divided by pre-existing inequalities, the pandemic exacerbated vulnerabilities to negative social, political and economic impacts.

“Misinformation and disinformation have posed unique challenges to combating the pandemic. There is a breakdown in public trust enabling the propelling of false and misinformed theories on (COVID-19) vaccines and their effects,” Okafor said.

“Under international human rights law, States have a duty to cooperate, including in terms of vaccine solidarity to ensure the fullest enjoyment of human rights by everyone around the globe.”

The ongoing failure by States to ensure optimal global vaccine solidarity is clearly contrary to the values of international solidarity and violates the spirit of the international human rights cooperation obligation embodied in Articles 55 and 56 of the Charter of the United Nations.

“In my recommendations I emphasise the urgency of developing legislative and administrative solutions to prioritise the proactive coordination, support and reinforcement of WHO-led global vaccine solidarity,” the expert said.

Fuente: reliefweb. Disponible en https://bit.ly/3zb3kjp

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Estrategia de búqueda: *Vaccine in the title or abstract AND 20221012:20221022 as the publication date 73 records*

1.WO/2022/216023VACCINE MANAGEMENT SYSTEM INCLUDING VACCINE MANAGEMENT DEVICE, OPERATION METHOD FOR VACCINE MANAGEMENT DEVICE, AND METHOD FOR PROVIDING, TO VACCINE MANAGEMENT SYSTEM, VACCINE HEALTHCARE SOLUTION THAT IS CARRIED OUT
WO - 13.10.2022
Clasificación Internacional G16H 40/40 Nº de solicitud PCT/KR2022/004912 Solicitante REAL TIME MEDI CHECK CORP. Inventor/a KIM, Hee
An operation method for a vaccine management device according to an embodiment of the present invention comprises: a first waiting step for waiting for identification code recognition by an identification code recognition unit; a first determination step for, if a first identification code is recognized in the first

waiting step, determining whether or not the first identification code is a subject identification code of a vaccine subject; a second waiting step for waiting for identification code recognition of vaccine if the first identification code is the subject identification code; a second determination step for, if a second identification code is recognized in the second waiting step, determining whether or not the second identification code is a vaccine identification code; and a merge information transmission step for, if the second identification code is the vaccine identification code, transmitting, to a management server, data in which subject identification information corresponding to the subject identification code and vaccine identification information corresponding the vaccine identification code are merged.

2.20220331420AD35-VECTORED VACCINE FOR PREVENTING SARS-COV-2 INFECTION
US - 20.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17598624 Solicitante GUANGZHOU N BIOMED LTD. Inventor/a Ling Chen
Disclosed is an Ad35-vectored vaccine for preventing SARS-CoV-2 infection, comprising an Ad35 vector, wherein the Ad35 vector is loaded with a nucleic acid sequence shown in SEQ ID NO: 1. Some embodiments of the present disclosure have better safety and use convenience. Experiments have shown that the vaccine can produce more S proteins in human cells, which is expected to be developed as a vaccine for preventing SARS-CoV-2 infection. Some embodiments of the present disclosure may be used in combination with another vaccine or may also be used as a therapeutic vaccine for Corona Virus Disease 2019. When a patient is vaccinated with the Ad35-vectored vaccine of the present disclosure at the initial stage of infection, the vaccine quickly induces an immune response in the human body, thereby achieving a therapeutic effect.

3.20220323571PARAMYXOVIRUS VACCINE STRAIN FOR NOVEL CORONAVIRUS PNEUMONIA AND CONSTRUCTION METHOD THEREOF
US - 13.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17404713 Solicitante QINGDAO HARWARS BIOMEDICINE TECHNOLOGY CO., LTD. Inventor/a MINGYI LI
A paramyxovirus vaccine strain for novel coronavirus pneumonia and a construction method thereof are provided. The method includes performing a recombination of N and F genes of Newcastle disease virus type VII of Paramyxoviridae with P, M, H, L genes of Canine distemper virus of Paramyxoviridae to obtain a recombinant virus, inserting S1 gene of the novel coronavirus between the P and M genes of the recombinant virus to obtain a recombinant vector. The vaccine strain constructed can stably and efficiently express the novel coronavirus S1 protein, and induce the body to produce antibodies; and the recombined virus vaccine strain can stimulate the human body to produce mucosal immunity, and the prepared vaccine can be vaccinated through a nasal spray. Moreover, the vaccine strain can be tested in poultry and dogs, saving time, reducing costs, and being more conducive to actual production due to large output.

4.20220333085METHODS OF PRODUCING AND CHARACTERIZING VIRUS VACCINE AND VIRUS VACCINE COMPOSITION
US - 20.10.2022
Clasificación Internacional C12N 7/00 Nº de solicitud 17707613 Solicitante Guangzhou Realbenefitspot Pharmaceutical Co., Ltd. Inventor/a Dianlian Liu
This application pertains to methods of isolating virus particles and producing virus vaccine composition comprising subject a biological sample to an anion exchange chromatography and a hydroxyapatite chromatography. The application also pertains to rabies virus vaccine compositions and methods of assessing suitability of a virus vaccine composition or releasing a commercial batch of virus vaccine composition for clinical use.

5.WO/2022/213742HERPES ZOSTER VACCINE AND USE THEREOF
WO - 13.10.2022
Clasificación Internacional A61K 39/25 Nº de solicitud PCT/CN2022/078286 Solicitante CHANGCHUN BCHT BIOTECHNOLOGY CO. Inventor/a YAN, Kunming
Provided in the present invention is a vaccine, which comprises a VZV gE protein and a complex adjuvant, wherein the VZV gE protein is the amino acids 1-546 of wild type gE, and the complex adjuvant comprises an emulsion of squalene and/or squalane and CpG. Further provided in the present invention are a method for preparing the vaccine, and the use of the vaccine in the prevention of the herpes zoster disease and complications thereof.

6.2021433087Halogenated xanthenes as vaccine adjuvants
AU - 20.10.2022
Clasificación Internacional A61K 31/4178 Nº de solicitud 2021433087 Solicitante Provectus Pharmatech, Inc. Inventor/a HOROWITZ, Bruce
A method of inducing a Type I interferon response in a mammalian subject that presents with a microbial infection, cancerous tumor or hematological malignancy that comprises administering an amount of a halogenated xanthene as discussed above, effective to induce the Type I interferon response. A method of enhancing a mammalian immunogen-specific immune response that comprises contacting mammalian cells, in vivo or present in a mammalian cell growth supporting medium, with an adjuvant-effective amount of a halogenated xanthene, and an immunogen to which that response is to be enhanced. A mammalian HX compound-adjuvanted vaccine composition that contains an immunogen present in a vaccine-effective amount along with an adjuvant-effective amount of a halogenated xanthene (HX) compound and one or more excipients present at about 0.001% by weight to 10% by weight of the vaccine composition dissolved or dispersed in a pharmaceutically acceptable diluent.

7.20220331419SEASONAL INFLUENZA VACCINE CAPABLE OF INDUCING VIRUS-SPECIFIC ANTIBODY INTO NASAL CAVITY
US - 20.10.2022
Clasificación Internacional A61K 39/145 Nº de solicitud 17639773 Solicitante DENKA COMPANY LIMITED Inventor/a Ryotaro MITSUMATA
Provided is a seasonal influenza vaccine having a higher efficacy than a split vaccine. A seasonal influenza vaccine which induces virus-specific antibodies in the nasal mucosa, comprises inactivated whole influenza virus particles as an active ingredient, and is to be administered intradermally at dose per administration of 15 μg HA or more per strain as antigen.

8.WO/2022/216949FUSION PROTEIN FOR ANTIGEN PRESENTATION
WO - 13.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/023864 Solicitante EXOSIS, INC. Inventor/a EDGAR, James, Robert
The present invention relates to a fusion protein comprising an exosomal protein and one or more immunogenic protein, wherein the exosomal protein is a tetraspanin protein. The present invention also relates to an exosome comprising said fusion protein. Further, the present invention relates to a vaccine composition comprising an exosome of the invention. The present invention also relates to a nucleic acid molecule encoding said fusion protein, and an expression vector comprising said nucleic acid molecule. The present invention further relates to a cell comprising said fusion protein, exosome, nucleic acid molecule, and/or expression vector. The invention also relates to the exosome and the vaccine composition for use as a medicament. The invention also relates to the exosome and and/or the vaccine composition for use in the prevention or amelioration of an infection in a subject. Furthermore, the invention relates to a method of preventing or ameliorating an infection in a subject, the method

comprising providing the subject in need thereof with a therapeutically effective amount of an exosome and/or a vaccine composition of the invention.

9.20220323567COMBINATION VACCINE FOR INTRADERMAL ADMINISTRATION
US - 13.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17641031 Solicitante INTERVET INC. Inventor/a Theodorus Jansen
The present invention relates to the field of veterinary vaccinology, namely to combination vaccines for swine. In particular the invention relates to a combination vaccine for protection against a pathogenic infection with porcine circo vims type 2 (PCV2) and *Mycoplasma hyopneumoniae* (Mhyo) comprising non-replicating immunogen of PCV2 and non-replicating immunogen of Mhyo. The vaccine is characterized in that it is an oil-in-water emulsion comprising squalane, vitamin E-acetate and silica. In another embodiment, the invention relates to a combination vaccine for protection against a pathogenic infection with PCV2 and Mhyo by intradermal administration.

10.WO/2022/216895METHODS, KITS, AND APPROACHES FOR VIRAL VACCINES
WO - 13.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/023772 Solicitante UNIVERSITY OF FLORIDA RESEARCH FOUNDATION, INCORPORATED Inventor/a MITCHELL, Duane
The invention provides methods of making vaccines against viruses, including against SARS-Cov-2. Such methods entail identifying areas of a viral genome that are highly conserved and making vaccines that target the highly conserved areas. The invention provides a polypeptide vaccine comprising a SARS-Cov-2 polypeptide or an immunogenic fragment thereof and a pharmaceutically acceptable excipient. The invention provides a polynucleotide vaccine comprising a polynucleotide encoding a SARS-Cov-2 polypeptide or immunogenic fragment thereof linked to a heterologous promoter and a pharmaceutically acceptable excipient. The invention provides methods for effecting prophylaxis of or treating SARS-Cov-2 infection comprising a step of administering a polypeptide vaccine and/or a polynucleotide vaccine to a subject in need thereof.

11.4069283IMPFSTOFFKONJUGATE
EP - 12.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 20821152 Solicitante ULTIMOVACS AB Inventor/a MANGSBO SARA
The present invention relates to conjugates comprising B- and T-cell epitopes, vaccine compositions comprising said conjugates, their use in the prevention and treatment of cancer, such as prostate cancer, as well as kits comprising the conjugates and/or vaccine compositions. Also claimed are particular T-cell epitope-containing antigenic peptides, and nucleic acids encoding them and constructs and vectors comprising such nucleic acids.

12.WO/2022/214685HUMAN METAPNEUMOVIRUS COMBINATION VACCINE
WO - 13.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/059502 Solicitante VALNEVA SE Inventor/a LUNDBERG, Urban
The present invention relates to a vaccine composition for preventing and/or treating a respiratory system infection such as a human metapneumovirus infection of the respiratory system. This vaccine composition comprises two or more modified human metapneumovirus (hMPV) F proteins or variants thereof provided in a pre-fusion and/or post-fusion conformation form.

13.WO/2022/218272NOVEL CORONAVIRUS MUTANT STRAIN S PROTEIN AND NOVEL CORONAVIRUS MUTANT STRAIN SUBUNIT VACCINE
WO - 20.10.2022

Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2022/086181 Solicitante WUHAN UNIVERSITY Inventor/a XU, Ke
The present invention provides a novel coronavirus mutant strain S protein and a novel coronavirus mutant strain subunit vaccine, and a preparation method therefor and an application thereof. The furin cleavage site 682-RRAR-685 between S1/S2 subunits of the novel coronavirus mutant strain S protein is replaced with a flexible protein linker. The linker is (GGCAGCGCCAGC) or (GGCGGCGGCAGC)n or (GGCGGCGGCGGCAGC)n or (GGC)n, or the linker is GSAS or (GGGS)n or (GGGGS)n or (G)n, wherein 1≤N≤3, and n is an integer. An amino acid sequence of the novel coronavirus mutant strain S protein is represented by SEQ ID NO: 2 or is represented by SEQ ID NO: 4. The S protein has a great potential as a vaccine antigen against the mutant strain SARS-CoV-2.

14.20220328174CENTRALIZED SYSTEM FOR VACCINATION VERIFICATION, INVENTORY MANAGEMENT, AND ANALYSIS
US - 13.10.2022
Clasificación Internacional G16H 40/20 Nº de solicitud 17718426 Solicitante Paulette Lawrence Inventor/a Paulette Lawrence
A centralized system comprising a control server with a vaccination verification module for creating patient vaccination records and providing proof of vaccination by anonymously referencing the vaccination records using unique patient identifiers, an inventory management module for monitoring vaccine distribution and automatically updating vaccine supply levels following administering of vaccine doses, and a reporting module for identifying distribution discrepancies and generating agency reports for governmental agencies.

15.4070818PD1- UND PDL1-ANTIKÖRPER UND IMPFSTOFFKOMBINATIONEN UND VERWENDUNG DAVON ZUR IMMUNTHERAPIE
EP - 12.10.2022
Clasificación Internacional A61K 39/395 Nº de solicitud 22156458 Solicitante UNIV PENNSYLVANIA Inventor/a WEINER DAVID
Disclosed herein is a vaccine comprising an antigen and PD1 antibody and/or PDL1 antibody. Also disclosed herein is a method for enhancing an immune response in a subject. The method may comprise administering the vaccine to the subject in need thereof.

16.WO/2022/214678HUMAN METAPNEUMO VIRUS VACCINE
WO - 13.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/059492 Solicitante VALNEVA SE Inventor/a LUNDBERG, Urban
The present invention relates to a vaccine composition for preventing and/or treating a respiratory system infection such as a human metapneumovirus infection of the respiratory system. This vaccine composition comprises one, two or more modified human metapneumovirus (hMPV) F proteins or variants thereof provided in a pre-fusion -fusion conformation form.

17.WO/2022/216028VACCINE COMPOSITION FOR PREVENTING SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS TYPE 2 INFECTIOUS DISEASE, HAVING IMPROVED NEUTRALIZATION POTENCY
WO - 13.10.2022
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/KR2022/004921 Solicitante KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECHNOLOGY Inventor/a JEONG, Dae Gwin
The present invention relates to a vaccine composition for preventing severe acute respiratory syndrome coronavirus type 2 infectious disease. The present invention enables mass-production in animal cells by using an RBD domain mutant of a spike protein of severe acute respiratory syndrome coronavirus type 2,

can effectively induce antigen production as an antigen, and can exhibit excellent effects in disease prevention as a vaccine.

18.4072580PERSONALISIERTER TUMORIMPFSTOFF UND SEINE VERWENDUNG ZUR KREBSIMMUNTHERAPIE
EP - 19.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 20899103 Solicitante NE1 INC Inventor/a ZHUANG ZHENGPING
Disclosed herein is a personalized tumor vaccine comprising attenuated cancer cells and a method of using said personalized tumor vaccine to treat cancer.

19.20220332770High-Density Flagellin-Displaying Virus-Like Particle As Vaccine Carrier
US - 20.10.2022
Clasificación Internacional C07K 14/255 Nº de solicitud 17719015 Solicitante University of Rhode Island Board of Trustees Inventor/a Xinyuan CHEN
The invention provides a novel fusion protein between flagellin (or portions thereof) and a polypeptide that can form a virus-like particle (VLP) (e.g., hepatitis b core (HBc) protein or portions thereof), where the fusion protein continues to form a VLP in an aqueous environment. The VLPs based on such fusion proteins (e.g., FH VLPs) provide a versatile, highly immunogenic, and safe vaccine carrier capable of displaying or associating a variety of vaccine antigens on VLP surface to elicit potent humoral and cellular immune responses.

20.WO/2022/215036CORONAVIRUS VACCINE COMPRISING A MOSAIC PROTEIN
WO - 13.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/IB2022/053285 Solicitante VAXTHERA SAS Inventor/a OSORIO, Jorge E.
Disclosed herein are mosaic coronavirus (MoCoV) spike (S) proteins or antigenic fragments thereof. Also disclosed herein are nucleic acid constructs comprising one or more nucleic acid sequences encoding a MoCoV S protein or antigenic fragment thereof. Also disclosed herein are coronavirus vaccine vectors comprising one or more polynucleotides encoding a MoCoV S protein or antigenic fragment thereof. Also disclosed herein are coronavirus vaccines comprising one or more MoCoV S proteins or antigenic fragments thereof and one or more carriers. Also disclosed herein are pharmaceutical compositions, host cells, and kits comprising one or more of the MoCoV S proteins or antigenic fragments thereof, nucleic acid constructs, coronavirus vaccine vectors, and/or coronavirus vaccines. Also disclosed herein are methods of eliciting an immune response in a subject against one or more coronavirus antigens and methods of preventing, reducing the incidence of, attenuating, or treating coronavirus infection in a subject in need thereof.

21.WO/2022/221237CENTRALIZED SYSTEM FOR VACCINATION VERIFICATION, INVENTORY MANAGEMENT, AND ANALYSIS
WO - 20.10.2022
Clasificación Internacional Nº de solicitud PCT/US2022/024351 Solicitante LAWRENCE, Paulette Inventor/a LAWRENCE, Paulette
A centralized system comprising a control server with a vaccination verification module for creating patient vaccination records and providing proof of vaccination by anonymously referencing the vaccination records using unique patient identifiers, an inventory management module for monitoring vaccine distribution and automatically updating vaccine supply levels following administering of vaccine doses, and a reporting module for identifying distribution discrepancies and generating agency reports for governmental agencies.

22.WO/2022/216025RECOMBINANT MYCOBACTERIUM STRAIN EXPRESSING SARS-COV-2 ANTIGEN, AND VACCINE COMPOSITION INCLUDING SAME
WO - 13.10.2022
Clasificación Internacional C12N 15/74 Nº de solicitud PCT/KR2022/004915 Solicitante RAPHAS CO., LTD. Inventor/a KIM, Bum-Joon
The present invention relates to a recombinant Mycobacterium paragordonae (Mpg) strain expressing a SARS-CoV-2 antigen, and a vaccine composition including same. The recombinant Mycobacterium paragordonae strain expressing the SARS-CoV-2 antigen of the present invention can generate remarkable immune responses, including neutralizing antibody activity, against SARS-CoV-2 in mice. Accordingly, the recombinant Mycobacterium paragordonae strain of the present invention can be effectively used as a vaccine for preventing or treating SARS-CoV-2 infection.

23.20220323574IMMUNOGENIC AND VACCINE COMPOSITIONS AGAINST SARS-CoV-2
US - 13.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17804954 Solicitante Iowa State University Research Foundation, Inc. Inventor/a MICHAEL WAN CHO
Disclosed herein are immunogenic and/or vaccine compositions and methods for treating or preventing Severe Acute Respiratory Syndrome (SARS). The compositions and methods include an immunogenic portion of the receptor-binding domain (RBD) of the SARS-CoV-2-2 (COVID-19) spike protein. In at least particular cases, a mutated version of a portion of the RBD is utilized, such as a deglycosylated, or amino acid substituted mutant of the spike protein.

24.20220333130Episomal expression, genomic integrated lentiviral vector expression and mRNA expression of Potent Immunoglobulins Including Dimeric Immunoglobulin A1 and A2 via a furin cleavage site and 2A self-processing peptide to Enable Mucosal and Hematological Based Immunity or Protection via Gene Therapy for Allergens, viruses, HIV, bacteria, infections, pathology associated proteins, systemic pathologies, cancer, toxins and unnatural viruses.
US - 20.10.2022
Clasificación Internacional C12N 15/86 Nº de solicitud 17227372 Solicitante Roger B. Swartz Inventor/a Roger B. Swartz
The present invention contemplates mRNA, episomal and retroviral genomic gene therapy based short-term, intermediate or long-term vaccine, immunization, protection or therapy—that can also be administered as a retroviral genomic gene therapy—method to provide mucosal and hematological protection to humans to protect against pandemic and non-pandemic viruses, bacterial infections, fungi, allergens or the cause of allergic reactions, systemic pathological conditions, cancer and anti-biowarfare agents (e.g. natural and unnatural viruses and toxins) where mucosal immunity and potentially hematological immunity is achieved through mRNA, episomal or genomic expression of dimeric immunoglobulin A1 (dIgA1) and dimeric immunoglobulin A2 (dIgA2). The present invention provides methods, immunoglobulin compositions and vector constructs to express potent immunoglobulins that are derived from human blood of a human currently infected with, affected by, exposed to or recovered from any of a wide range of allergens or the cause of allergic reactions, pathogens (including, viruses, virus mutants, bacterial infections and fungi) and systemic pathological ailments (including cancer and other disorders), developed from phage display technology or mice or other animals with a humanized immune systems, transgenic mice or chimeric antibodies a fusion of non-human vetebrates (e.g. mouse or rabbit) and human. The immunoglobulin compositions include the heavy chain variable, diversity and joining (VDJ or Variable Heavy Region genes) segment immunoglobulin DNA and/or polypeptide sequence from humans identified to have developed high affinity immunoglobulins against the antigen, protein or proteins of interest and either to use the exact immunoglobulin heavy chain and light chain polypeptide sequences

identified from the memory B-cell that produced them or to modify or engineer some of the immunoglobulin heavy chain and light chain constant domains to reduce, change or modulate effector functions. Although, ideally there are no changes made to the immunoglobulins light and heavy chains as identified from the memory B-cell that produced them. Modification may occur at the Hinge region, Constant Heavy 2 (C_H2) domain and Constant Heavy 3 (C_H3) domain for the immunoglobulin heavy chain polypeptide with optional modification or change of Constant Heavy 1 (C_H1), optional modification or change constant light (C_L) chain domain. The resulting antibodies can either be used as a monoclonal or antibody cocktail of (Immunoglobulin Class G subclass1) IgG1, IgG2, IgG3 and other subclasses, IgA1 monomer and IgA2 monomer and dimeric IgA1 (dIgA1) and dimeric IgA2 (dIgA2) immunoglobulins (as identified by the binding affinity of B-cells that expressed immunoglobulins are coded for as necessary to represent the binding affinity (e.g. such as based on complementarity determining Regions (CDRs) or V-regions) in the monoclonal or antibody cocktail). Alternatively, combinatorial libraries of single chain variable fragments (scFv) may be generated from human B-cells or other animal B-cells that may or may not have been exposed to the allergen, pathogen, cancer, or pathological ailment, or suspected or identified biowarfare agent or protein where phage display technology and mutagenesis can be used to identify potent V_H and V_L immunoglobulin fragments that can be incorporated into full-length immunoglobulin heavy and light chains incorporated into vectors for mRNA expression, episomal expression or retroviral gene delivery (retroviral insertion into genomic DNA) based gene-therapy. Further, mice or other animals can also achieve humanized immune system by implanting human hematopoietic progenitor cells into the animal or transplanting human fetal thymus, liver and bone marrow into mice or other animals where exposure to antigens, allergens or other foreign and non-foreign proteins can result in an adaptive immune response and potential affinity maturation. Additionally, transgenic mice where human immunoglobulin (Ig) genes are inserted into the genome to replacing the endogenous Ig genes making the mice or other non-human vertebrate such as rabbits or hamsters capable of producing fully human antibodies from exposure to antigen may be used to identify potent immunoglobulins. Non-human vetebrates (e.g. mouse or rabbit) may be used to identify potent immunoglobulin binding regions or potent immunoglobulin complementarity determining regions (CDRs) for fusion with human antibodies giving rise to chimeric antibodies. The identified immunoglobulins from these methods may be further optimized through mutagenesis techniques and will be expressed in the recipient via mRNA, via an episome or via retroviral insertion into their genomic DNA of the cells of interest to be expressed via intramuscular administration, intravenous administration, endoscopy based administration to the lamina propria of the stomach and/or small intestine, via ingestion or administration proximal to lymph nodes. Preferred cells to target to receive the vector include muscle cells, liver cells especially hepatocytes and B-cells including memory B-cells, Germinal Center B-cells, memory plasma B-cells, a plasma blast, and naïve B-cells. The vector will be ideally delivered as a naked vector, in a vesicle based delivery system such as a lipid nano-particle, in a recombinant Adeno Associated Virus (rAAV) with preference for AAV serotype 8 (AAV8) containing a single-stranded Deoxyribonucleic acid (ssDNA), an adenovirus delivery system, a lentivirus delivery system, lentiviral mRNA delivery via mutated reverse transcriptase protein, lentiviral retroviral vector or mRNA delivery via mutated integrase protein, or a vesicle-based delivery system using mRNA, single-stranded DNA or double-stranded DNA. When designing an mRNA, AAV viral vector, adenovirus vector, integration incompetent lentivirus vector or lentivirus retroviral vector, encoding for dIgA1 or dIgA2 a single vector will code for the entire immunoglobulin and J chain (Joining Chain) expression for dIgA1 or dIgA2 where expression may occur with a single start codon and stop codon for each transgene and in some embodiments a second start codon for J chain expression. The use of a single start and stop codon is enabled by placing in the 5' to 3' direction a furin cleavage site concomitantly followed by a 2A self-processing peptide or furin cleavage site only between each gene of any number of consecutive transgenes as a single open reading frame. Further, in some embodiments MZB1 will optionally be

encoded in the mRNA, viral, retroviral or non-viral vectors (See FIGS. **13, 15, 16, 17, 18, 19, 20** as examples). The specific DNA of the human donor can be identified as follows: Cluster of Differentiation 27+(CD27+) IgG+ and CD27+ IgA+ memory B-cells, other memory B-cells, or plasmablast B-cells and even potentially memory plasma B-cells will be isolated from blood using established methods. Each resulting isotype of memory B-cell or together will be subjected to a competitive binding assay using magnetic pull down and Fluorescence Activated Cell Sorting (FACS) methods to identify the memory B-cells with the greatest binding affinity to the virus, bacteria, antigen, allergens, self-antigen, pathogenic protein, or other foreign and non-foreign bodies and proteins of interest. Isolated CD27+ or other Cluster of Differentiation memory B-cells will use well-established methods to identify the genetic sequence and in turn the polypeptide sequence of the immunoglobulin heavy and light chains of the cell surface IgG+ or IgA+ receptor. Immunoglobulin mRNA or DNA will be incorporated into vector construct coding for antibodies to be evaluated for binding affinity and safety in addition to modifying them in a variety of ways as described herein and then to be incorporated into an mRNA vector to enable mRNA based expression or viral or non-viral vector to enable episomal immunoglobulin expression. Alternatively, the lentivirus vectors may be used for episomal expression or as a retroviral vector intended for retroviral integration in the host genomic DNA. Additionally, a method to improve the potency of a vaccine is designed by targeted delivery of antigenic proteins or protein encoding mRNA to the lamina propria of the respiratory tract or gastrointestinal tract.

25.4069751ANTIBAKTERIELLER KOHLENHYDRATSIMPFSTOFF
EP - 12.10.2022
Clasificación Internacional C07K 17/10 Nº de solicitud 20895463 Solicitante UNIV OF MONTANA Inventor/a JENNINGS LAURA K
The present disclosure provides compositions comprising an isolated polysaccharide comprising β-1,4 linked galactosamine and glucosamine monomers, wherein the amino groups of each of the galactosamine and glucosamine are partially substituted with acetate. The disclosure further provides vaccine, methods of use, and methods of producing the isolated polysaccharide.

26.WO/2022/221527METHODS FOR TREATING DRUG AND VACCINE INDUCED IMMUNE THROMBOCYTOPENIA BY ADMINISTERING SPECIFIC COMPOUNDS
WO - 20.10.2022
Clasificación Internacional A61K 31/519 Nº de solicitud PCT/US2022/024806 Solicitante PRINCIPIA BIOPHARMA, INC. Inventor/a SMITH, Christopher W.
Methods for treating and/or preventing drug-induced thrombocytopenia (DITP) and vaccine-induced thrombosis and thrombocytopenia syndrome (VITT) with certain BTK inhibitors and/or pharmaceutically acceptable salts thereof are provided.

27.4069284TUMORZELLVAKZINE
EP - 12.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 20829437 Solicitante NEUVOGEN INC Inventor/a FERRARO BERNADETTE
The present disclosure provides an allogeneic whole cell cancer vaccine platform that includes compositions and methods for treating and preventing cancer. Provided herein are compositions containing a therapeutically effective amount of cells from one or more cancer cell lines, some or all of which are modified to (I) inhibit or reduce expression of one or more immunosuppressive factors by the cells, and/or (II) express or increase expression of one or more immunostimulatory factors by the cells, and/or (ill) express or increase expression of one or more tumor-associated antigens (TAAs), including TAAs that have been mutated, and which comprise cancer cell lines that natively express a heterogeneity

of tumor associated antigens and/or neoantigens. Also provided herein are methods of making the vaccine compositions, methods of preparing, and methods of use thereof.

28.202111000312A MODIFIED VACCINE CONSTRUCT FOR EHV1 AND METHODS OF PREPARING THE SAME
IN - 14.10.2022
Clasificación Internacional A61K / Nº de solicitud 202111000312 Solicitante INDIAN COUNCIL OF AGRICULTURAL RESEARCH Inventor/a Nitin Virmani
The invention relates to the field of development of attenuated equine herpesvirus 1 based vectorvaccine construct. The invention specifically relates to the bacterial artificial chromosome (BAC)vector construct comprising the genome of equine herpesvirus 1 (EHV1 - ToH strain) withdeletions of two genes - IR6 (ORF67) and gE (ORF74) for use in generation of attenuatedvaccine virus for control of equine herpesvirus 1 infection in equines. The invention also relatesto method of production of attenuated replicating mutant virus (vToHΔIR6/gE) from thegenerated vector construct that can replicate in a variety of mammalian cell types; has reducedvirulence in comparison to wild virus as shown in in vitro and mouse model study and showedprotective efficacy in challenged study against wild virulent EHV1 strain. The live-attenuatedviruses produced from the vaccine construct in a form of improved vaccines can be used to elicitprotective immune responses.

29.20220325279STABLE CORONAVIRUS PROTEINS AND VACCINE COMPOSITIONS THEREOF
US - 13.10.2022
Clasificación Internacional C12N 15/11 Nº de solicitud 17563271 Solicitante UNIVERSITY OF WASHINGTON Inventor/a Daniel ELLIS
Provided herein are compositions and methods comprising mutated coronavirus “S” spike proteins or receptor binding domains thereof that have an increased expression level, yield and stability compared to its corresponding native or wild-type coronavirus spike protein under the same expression, culture or storage conditions. These mutated spike proteins can be used for generating a protein-based vaccine against one or more coronaviruses.

30.20220323562LIVE ATTENUATED ORAL VACCINE AGAINST SHIGELLOSIS AND TYPHOID FEVER
US - 13.10.2022
Clasificación Internacional A61K 39/112 Nº de solicitud 17660558 Solicitante Protein Potential, LLC Inventor/a Yun WU
Disclosed is the attenuated *Salmonella typhi* vaccine Ty21a utilized as a vector for *Shigella* and/or enterotoxogenic *E. coli* genes stably integrated in the Ty21a chromosome. These genes include a heterologous *Shigella sonnei* O-antigen biosynthetic gene region that comprises the wzz gene and expresses *Shigella sonnei* form 1 O-antigen, as well as a heterologous acid resistance biosynthetic gene system comprising a YbaS gene, which enables increased stability of the Ty21a vector at pH 2.5 relative to Ty21a without the integrated acid resistance biosynthetic gene system.

31.WO/2022/216011VACCINE COMPOSITION AGAINST CORONAVIRUS
WO - 13.10.2022
Clasificación Internacional A61K 47/64 Nº de solicitud PCT/KR2022/004887 Solicitante LG CHEM, LTD. Inventor/a NOH, Yoon Ae
The present invention relates to: a conjugate in which a receptor-binding domain (RBD) of coronavirus and a hepatitis B surface antigen (HBsAg) are linked; virus-like particles including the conjugate; and a coronavirus vaccine composition containing the conjugate and/or virus-like particles.

32.WO/2022/221612PSEUDORABIES VIRUS VACCINE
WO - 20.10.2022

Clasificación Internacional C12N 7/00 Nº de solicitud PCT/US2022/024941 Solicitante ZORTIS SERVICES LLC Inventor/a LIU, Qiaoran
This disclosure provides an attenuated suid herpesvirus 1 (a Pseudorabies virus) wherein the TK, gl and gE genes thereof are modified relative to a parent field strain, such that the resultant virus is safe and effective for use as a live vaccine that protects swine animals from challenge with a virulent Pseudorabies virus.

33.20220331417MODIFIED VESICULAR STOMATITIS VIRUS GLYCOPROTEIN AND USES THEREOF FOR THE TREATMENT OF BRAIN TUMORS
US - 20.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17642756 Solicitante UNIVERSITÉ CATHOLIQUE DE LOUVAIN Inventor/a Gaëlle VANDERMEULEN
A vaccine for treating and/or preventing a brain tumor. More particularly, a modified vesicular stomatitis virus glycoprotein (VSV-G) including at least one tumor antigen, or a fragment thereof, for use in preventing and/or treating a brain tumor in an individual in need thereof, when administered before a surgery intended to remove all or part of the tumor, such as, a tumor resection. The inventors have shown that vaccination of individual with a brain tumor with a vaccine including a nucleic acid sequence encoding a modified VSV-G may be combined to a tumor resection in order to ameliorate the prognostic of the individuals.

34.20220331422RNA vaccine against SARS-CoV-2 variants
US - 20.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17829004 Solicitante CureVac AG Inventor/a Nicole ROTH
The present invention is directed to a nucleic acid suitable for use in treatment or prophylaxis of an infection with a coronavirus, preferably with a Coronavirus SARS-CoV-2, or a disorder related to such an infection, preferably COVID-19. The present invention is also directed to compositions, polypeptides, and vaccines. The compositions and vaccines preferably comprise at least one of said nucleic acid sequences, preferably nucleic acid sequences in association a lipid nanoparticle (LNP). The invention is also directed to first and second medical uses of the nucleic acid, the composition, the polypeptide, the combination, the vaccine, and the kit, and to methods of treating or preventing a coronavirus infection, preferably a Coronavirus infection.

35.20220324917RECOMBINANT RSV LIVE VACCINE STRAIN AND THE PREPARING METHOD THEREOF
US - 13.10.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17717504 Solicitante SK BIOSCIENCE CO., LTD. Inventor/a Ki-weon SEO
The present invention provides a recombinant attenuated respiratory syncytial virus (RSV) comprising F protein of stabilized pre-fusion RSV, or comprising protein consisting of the amino acid sequence represented by SEQ ID NO: 2 or functional fragment thereof, and provides genome of the recombinant RSV and a recombinant vector comprising the genome. The recombinant attenuated RSV can be provided as a live vaccine strain which maintains infectability and has excellent safety and stability.

36.WO/2022/218325GENE-DELETED ATTENUATED AFRICAN SWINE FEVER VIRUS STRAIN, AND CONSTRUCTION METHOD THEREFOR AND USE THEREOF
WO - 20.10.2022
Clasificación Internacional C12N 7/00 Nº de solicitud PCT/CN2022/086526 Solicitante JINYUBAOLING BIO-PHARMACEUTICAL CO., LTD. Inventor/a SONG, Qingqing

The present invention belongs to the technical field of biological vaccine products. Disclosed are a gene-deleted attenuated African swine fever virus strain, and a construction method therefor and the use thereof. In the present invention, the gene-deleted attenuated African swine fever virus strain constructed by means of a homologous recombination method is a gene-deleted virus strain in which CD2v, MGF (12L, 13L, 14L) and I177L gene segments are simultaneously deleted on the basis of the type II African swine fever virus genome, and is obviously attenuated relative to a parental strain, and the stable replication and immunogenicity of the gene-deleted virus strain is not affected. After vaccinating laboratory pigs with the gene-deleted attenuated African swine fever virus strain, the phenomena of a significant rise in body temperature, joint swelling, pathogenesis or death in the laboratory pigs do not appear, and viremia does not occur, and thus, the gene-deleted attenuated African swine fever virus strain shows good safety and a good protection effect against immunity challenge. Therefore, the gene-deleted attenuated African swine fever virus strain provided by the present invention can be used as a candidate vaccine strain with good safety and a good immune protection effect.

37.WO/2022/221835MESSENGER RNA VACCINES AGAINST WIDE SPECTRUM OF CORONAVIRUS VARIANTS
WO - 20.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/071679 Solicitante ACADEMIA SINICA Inventor/a WONG, Chi-Huey
The present invention relates to the mRNA vaccine of coronavirus spike protein with deletion of glycosites in the receptor binding domain (RBD), the subunit 1 (S1) domain, or the subunit 2 (S2) domain, or a combination thereof. The vaccine elicits broadly protective immune responses coronavirus and variants thereof.

38.20220332772VACCINE AND METHODS FOR DETECTING AND PREVENTING FILARIASIS
US - 20.10.2022
Clasificación Internacional C07K 14/435 Nº de solicitud 17750968 Solicitante THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS Inventor/a Ramaswamy KALYANASUNDARAM
The present invention is a multivalent immunogenic composition for immunizing an animal against filariasis. In some embodiments, the antigens of the multivalent immunogenic composition are protein-based, DNA-based, or a combination thereof. This invention also provides a method and kit for detecting a filarial nematode and determining vaccine efficacy.

39.4073088VARIANTES ONKOLYTISCHES VACCINIA-VIRUS UND VERWENDUNGSVERFAHREN DAFÜR
EP - 19.10.2022
Clasificación Internacional C07K 14/07 Nº de solicitud 20825002 Solicitante IGNITE IMMUNOTHERAPY INC Inventor/a ABBADESSA DARIN MICHAEL
The present disclosure provides a replication-competent, recombinant oncolytic vaccinia virus (OVV) comprising one of more of a) a nucleotide sequence encoding a variant A33 polypeptide, b) a nucleotide sequence encoding a variant A34 polypeptide, and c) a nucleotide sequence encoding a variant B5 polypeptide, wherein the variant A33, variant A34, and variant B5 polypeptides comprise one or more amino acid substitutions that provide for enhanced virus spreading or enhanced EEV production as compared with a virus encoding a corresponding wild-type A33, A 34, and B5 polypeptide. The present disclosure also provides compositions comprising the OVV and use of the OVV or the composition for inducing oncolysis in an individual having a tumor.

40.20220323501NOVEL PEPTIDES AND SCAFFOLDS FOR USE IN IMMUNOTHERAPY AGAINST HEAD AND NECK SQUAMOUS CELL CARCINOMA AND OTHER CANCERS
US - 13.10.2022

Clasificación Internacional A61K 35/17 Nº de solicitud 17837807 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.

41.20220323502NOVEL PEPTIDES AND SCAFFOLDS FOR USE IN IMMUNOTHERAPY AGAINST HEAD AND NECK SQUAMOUS CELL CARCINOMA AND OTHER CANCERS
US - 13.10.2022
Clasificación Internacional A61K 35/17 Nº de solicitud 17843887 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.

42.20220324817QUINAZOLINE PRODRUGS FOR THE TREATMENT OF VIRAL INFECTIONS AND FURTHER DISEASES
US - 13.10.2022
Clasificación Internacional C07D 239/95 Nº de solicitud 17596022 Solicitante Janssen Sciences Ireland Unlimited Company Inventor/a David Craig MC GOWAN
Provided herein are compounds of formula (I), pharmaceutical compositions comprising such compounds, and methods of using such compounds through induction of the T helper 1 (Th1) immune response to treat infections, diseases, and disorders. The compounds disclosed herein may also be considered prodrugs and vaccine adjuvants.

43.20220324941IMMUNOTHERAPY WITH B*07 RESTRICTED PEPTIDES AND COMBINATION OF PEPTIDES AGAINST CANCERS AND RELATED METHODS
US - 13.10.2022
Clasificación Internacional C07K 14/725 Nº de solicitud 17832290 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.

44.20220323557PEPTIDE ANTIGENS AND USES THEREOF

US - 13.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17634191 Solicitante HUMANITAS MIRASOLE S.P.A. Inventor/a Marinos KALLIKOURDIS
The invention provides a new method for identifying peptide antigens relevant to a non-autoimmune disease involving T cell activation as well as novel peptides identified therefrom. The isolated peptides of the invention are useful in the diagnosis, prevention and/or treatment of a cardiovascular disease, more specifically heart failure (HF). The invention further provides a pharmaceutical composition comprising at least one isolated peptide of the invention and a pharmaceutically acceptable carrier, vehicle, excipient and/or diluent. The pharmaceutical composition of the invention is suitable to be orally administered as a tolerizing vaccine.

45.20220323578SAPONIN CONJUGATE AND VACCINE OR PHARMACEUTICAL COMPOSITION COMPRISING THE SAME
US - 13.10.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17616213 Solicitante Pi-Hui Liang Inventor/a Pi-Hui Liang
The present invention is directed to novel chemical compounds in which a lipophilic moiety such as a lipid, fatty acid, polyethylene glycol or terpene is covalently attached to a non-acylated or desacylated triterpene saponin via a carboxyl group present on the 3-O-glucuronic acid of the triterpene saponin. The attachment of a lipophile moiety to the 3-O-glucuronic acid of a saponin such as *Quillaja* desacylsaponin, lucyoside P, or saponin from *Gypsophila, Saponaria* and *Acanthophyllum* enhances their adjuvant effects on humoral and cell mediated immunity. Additionally, the attachment of a lipophile moiety to the 3-O-glucuronic acid residue of non- or des-acylsaponin yields a saponin analog that is easier to purify, less toxic, chemically more stable, and possesses equal or better adjuvant properties than the original saponin.

46.20220332764T CELL EPITOPES OF HCMV AND USES OF THEREOF
US - 20.10.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17638833 Solicitante EBERHARD KARLS UNIVERSITÄT TÜBINGEN Inventor/a ANNIKA NELDE
The present invention relates to relates to T cell epitope peptides, proteins, nucleic acids and cells for use in immunother-apeutic methods. In particular, the present invention relates to the immunotherapy of viral infection. The present invention specifically relates to virus-associated T-cell peptide epitopes, alone or in combination with other virus-associated peptides that can serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-viral 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.

47.20220332765CORONAVIRUS VACCINE FORMULATIONS
US - 20.10.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17700945 Solicitante Novavax, Inc. Inventor/a Gale SMITH
Disclosed herein are coronavirus Spike (S) proteins and nanoparticles comprising the same, which are suitable for use in vaccines. The nanoparticles present antigens from pathogens surrounded to and associated with a detergent core resulting in enhanced stability and good immunogenicity. Dosages, formulations, and methods for preparing the vaccines and nanoparticles are also disclosed.

48.WO/2022/215742ORAL VACCINE COMPOSITION
WO - 13.10.2022

Clasificación Internacional A01K 67/033 Nº de solicitud PCT/JP2022/017328 Solicitante KAICO LTD. Inventor/a YAMATO Kenta
[Problem] To provide: a method for simply producing an immunogenic chrysalis for oral administration; and a chrysalis which is for oral administration and produced by said method. [Solution] This method for producing a chrysalis for oral use comprises a step for infecting a larva or chrysalis of a baculovirus infectious insect with a recombinant baculovirus, into which DNA encoding an antigen protein has been introduced, and freeze-drying a chrysalis pupated from the infected larva or the infected chrysalis.

49.WO/2022/218928MODIFIED VIRUS-LIKE PARTICLES OF BACTERIOPHAGE AP205
WO - 20.10.2022
Clasificación Internacional C07K 16/10 Nº de solicitud PCT/EP2022/059646 Solicitante SAIBA AG Inventor/a TARS, Kaspars
The present invention relates to a modified virus-like particle of RNA bacteriophage AP205 (AP205 VLP) comprising AP205 coat protein dimers to which antigenic polypeptides are fused at the N-terminus and/or at the C -terminus. The modified AP205 VLPs can be used as a platform, in particular for vaccine development, in generating immune responses against a variety of antigens.

50.WO/2022/218997NOVEL UNIVERSAL VACCINE PRESENTING SYSTEM
WO - 20.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/059786 Solicitante CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS) Inventor/a FENDER, Pascal
The present invention provides novel engineered protein comprising: (i) a adenovirus penton base protomer comprising a peptide tag in the variable loop and/or in the RGD loop, and (ii) at least one a protein or at least one protein fragment fused to a binding partner of the peptide tag; where the peptide tag of (i) and the binding partner of the peptide tag of (ii) are covalently bound to each other via an isopeptide bond. The present invention further concerns the uses and therapeutic uses of the engineered protein.

51.20220323560PEPTIDES AND T CELLS FOR USE IN IMMUNOTHERAPEUTIC TREATMENT OF VARIOUS CANCERS
US - 13.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17837795 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.

52.202247055361CPG-ADJUVANTED SARS-COV-2 VIRUS VACCINE
IN - 14.10.2022
Clasificación Internacional A61K / Nº de solicitud 202247055361 Solicitante VALNEVA AUSTRIA GMBH Inventor/a MEINKE, Andreas
Described herein are CpG-adjuvanted SARS-CoV-2 vaccines and compositions and methods of producing and administering said vaccines to subjects in need thereof.

53.20220331413PEPTIDES AND T CELLS FOR USE IN IMMUNOTHERAPEUTIC TREATMENT OF VARIOUS CANCERS
US - 20.10.2022

Clasificación Internacional A61K 39/00 Nº de solicitud 17320763 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.

54.WO/2022/215763CHIMERIC ANTIGEN RECEPTOR TARGETING ONCOLYTIC VIRUS-DERIVED PROTEIN, IMMUNOCYTE EXPRESSING SAME, AND USES OF BOTH
WO - 13.10.2022
Clasificación Internacional C12N 5/0783 Nº de solicitud PCT/KR2021/004226 Solicitante BIONOXX INC. Inventor/a HWANG, Tae-Ho
The present invention relates to a chimeric antigen receptor targeting an oncolytic virus-derived protein, an immunocyte expressing same and uses of both. Particularly, the present invention relates to: a chimeric antigen receptor targeting protein A56 expressed on cell surfaces of cancer cells infected with vaccinia virus; an immunocyte expressing same; and uses of both. An immunocyte expressing a chimeric antigen receptor, of the present invention, effectively targets protein A56, specifically expressed on cell surfaces of cancer cells, so as to enable targeted therapy of cancer cells that remain even when infected with an oncolytic virus, and thus effective anti-cancer therapy can be provided. An immunocyte expressing a chimeric antigen receptor, of the present invention, specifically activated by protein A56, has an increased proliferation capability, and exhibits excellent cytotoxic effects so that effective anti-cancer therapy for cancer cells expressing protein A56 can be provided. Preferably, the present invention is co-administered with an oncolytic virus, and drugs (for example hydroxyurea, chemotherapeutic agents for lymphodepleting conditioning (for example cyclophosphamide, fludarabine, and the like), or immunotherapeutic agents) capable of increasing oncolytic effects of the oncolytic virus can be additionally co-administered.

55.20220323354VACCINE FOR ELICITING IMMUNE RESPONSE COMPRISING LIPID NANOPARTICLES AND RNA COMPRISING SEGMENT ENCODING AN IMMUNOGEN
US - 13.10.2022
Clasificación Internacional A61K 9/127 Nº de solicitud 17848294 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a Andrew Geall
Vaccines for eliciting an immune response are provided. The vaccines include lipid nanoparticles comprising lipids which have a pKa in the range of 5.0 to 7.6 and, preferably, a tertiary amine. These lipid nanoparticles can have essentially neutral surface charge at physiological pH and are effective for immunization.

56.20220331248METHODS OF ELICITING AN IMMUNE RESPONSE
US - 20.10.2022
Clasificación Internacional A61K 9/127 Nº de solicitud 17848337 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a Andrew Geall
Provided are methods for eliciting an immune response, the methods comprising administering a vaccine to a subject. The vaccines for eliciting an immune response comprise RNA encoding an immunogen, which is delivered in a liposome, for the purposes of immunisation. The liposome includes lipids which have a pKa in the range of 5.0 to 7.6 and, preferably, a tertiary amine. These liposomes can have essentially neutral surface charge at physiological pH and are effective for immunisation.

57.2022902819Vaccine construct and uses thereof
AU - 20.10.2022
Clasificación Internacional Nº de solicitud 2022902819 Solicitante Touchlight Aquaculture Limited Inventor/a Not Given

58.WO/2022/216223VACCINE AND/OR ANTIBODY FOR VIRAL INFECTION
WO - 13.10.2022
Clasificación Internacional C07K 16/10 Nº de solicitud PCT/SG2021/050497 Solicitante INTRA-IMMUSG PRIVATE LIMITED (SG) Inventor/a ZENG, Qi
The present invention relates to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) N-protein and/or an immunogenic fragment thereof and uses thereof. The invention includes an antibody capable of binding to the SARS-CoV-2 N-protein or antigen-binding fragment thereof and uses thereof

59.4070813VERFAHREN ZUR HERSTELLUNG EINER PROPHYLAKTISCHEN UND THERAPEUTISCHEN IMMUNOLOGISCHEN DNA-ZUSAMMENSETZUNG FÜR HPV UND MIT DEM VIRUS ASSOZIIERTEM KREBS, HYBRIDPROTEIN, EXPRESSIONSVEKTOR, IMMUNOLOGISCHE ZUSAMMENSETZUNG UND VERWENDUNGEN DAVON
EP - 12.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 20859623 Solicitante INST BUTANTAN Inventor/a CIANCIARULLO AURORA MARQUES
The present invention relates to the prophylactic and therapeutic vaccine against HPV and cancers associated with the virus, aimed at people seeking prevention or those already infected with HPV who have developed cancer. It also refers to DNA expression vectors that can efficiently produce the L2 protein of the HPV16 virus capsid, in addition to the viral E6 oncoprotein associated with human papillomavirus tumors. In particular, this invention relates to obtaining recombinant fusion or hybrid proteins, through gene cloning into expression vectors, produced by the genetic translation of fused genes, formed by the combination of nucleic acid regulatory sequences of one or more genes, with the protein coding sequences of one or more genes, used to generate two distinct types of responses: lasting humoral immune response, capable of stimulating the production of specific anti-L2 and anti-E6 antibodies against HPV (prophylactic action), as well as activate the cellular immune response, to fight tumor cells and induce the expression of TNF cytokines (Tumor Necrosis Factor) or Tumor Necrosis Factor (therapeutic action).

60.WO/2022/215762VIRAL VECTOR-DERIVED TARGET PROTEIN FOR ANTICANCER THERAPY AND BINDING MOLECULE OR FRAGMENT THEREOF SPECIFICALLY BINDING THERETO
WO - 13.10.2022
Clasificación Internacional C07K 16/08 Nº de solicitud PCT/KR2021/004225 Solicitante BIONOXX INC. Inventor/a HWANG, Tae-Ho
The present invention relates to a viral vector-derived target protein for anticancer therapy, and a binding molecule or a fragment thereof, which specifically binds thereto. More particularly, the present invention relates to a conformational epitope of an A56 protein, and a binding molecule or a fragment thereof, which specifically binds thereto. An A56 protein-binding molecule or a fragment thereof, which specifically binds to the conformational epitope of the A56 protein according to the present invention, forms specific structural binding with the A56 protein, resulting in high affinity to the A56 protein. The inventors of the present invention confirmed that, when an oncolytic vaccinia virus is administered, the A56 protein is expressed on the surface of cancer cells of various types of cancer. The A56 protein-binding molecule or a fragment thereof, according to the present invention, may provide an effective anticancer therapy by enabling targeted therapy with respect to cancer cells remaining even after infection with an anticancer

virus, by effectively targeting the A56 protein that is specifically expressed on the cell surface of cancer cells.

61.4072597VACCINIA-VIRUS-POLYMERASE-VERMITTELTE VIRALE REPLIKATION
EP - 19.10.2022
Clasificación Internacional A61K 48/00 Nº de solicitud 20899288 Solicitante IMMUNOLUX INT CORP Inventor/a SZALAY ALADAR A
Methods and compositions for regulating activity of a poxvirus viral polymerase by modulating the assembly and/or interaction of one or more subunits of the viral polymerase are described.

62.20220332760PEPTIDES AND COMBINATION THEREOF FOR USE IN THE IMMUNOTHERAPY AGAINST CANCERS
US - 20.10.2022
Clasificación Internacional C07K 7/06 Nº de solicitud 17849016 Solicitante Immatics Biotechnologies GmbH Inventor/a Juliane Sarah WALZ
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.

63.WO/2022/216731SALMONELLA VACCINE
WO - 13.10.2022
Clasificación Internacional A01N 63/20 Nº de solicitud PCT/US2022/023517 Solicitante UNIVERSITY OF MARYLAND, COLLEGE PARK Inventor/a BISWAS, Debabrata
Provided are modified bacteria and methods of using the modified bacteria for prophylaxis or treatment of bacterial infections. The modified bacteria contain one or more genomic modifications such that the genomes of the bacteria are altered to encode and produce a holin protein and to encode and produce a lysozyme. The modified bacteria are illustrated using a type of Salmonella enterica (SE) in the form of autolytic SE serovar Typhimurium (S. Typhimurium).

64.WO/2022/221837IMPROVED CORONAVIRUS VACCINE
WO - 20.10.2022
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/071682 Solicitante ACADEMIA SINICA Inventor/a WONG, Chi-Huey
The present disclosure provides a glycoengineered SARS-CoV-2 spike protein which is capable of eliciting an enhanced immune response relative to a native spike protein of SARS-CoV-2 and its variants. The glycoengineered spike protein exposes the glycosylation sites and at the same time preserves the tertiary structure of the spike protein. The present disclosure therefore provides improved immunogens, vaccines, and methods for better prevention and treatment of the emerging coronavirus infections.

65.20220323301SYSTEMS AND METHODS FOR FLUID DELIVERY
US - 13.10.2022
Clasificación Internacional A61J 1/20 Nº de solicitud 17849780 Solicitante Koska Family Limited Inventor/a Marc Andrew Koska
The invention provides for a delivery system including a delivery assembly configured to allow delivery of a single dose of a therapeutic agent (e.g., vaccine, drug, medicament, etc.) from a Blow-Fill-Seal (BFS) vial to a patient.

66.20220323577EMULSIONS WITH FREE AQUEOUS-PHASE SURFACTANT FOR ADJUVANTING SPLIT INFLUENZA VACCINES
US - 13.10.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17529668 Solicitante Seqirus UK Limited Inventor/a Derek O'HAGAN
A split influenza virus vaccine is adjuvanted with an oil-in-water emulsion that contains free surfactant in its aqueous phase. The free surfactant can continue to exert a 'splitting effect' on the antigen, thereby disrupting any unsplit virions and/or virion aggregates that might be present.

67.4074734NANOPARTIKELPLATTFORM FÜR ANTIKÖRPER- UND IMPFSTOFFABGABE
EP - 19.10.2022
Clasificación Internacional C07K 19/00 Nº de solicitud 22158241 Solicitante HOSPITAL FOR SICK CHILDREN Inventor/a JULIEN JEAN-PHILIPPE
A fusion protein comprises a nanocage monomer; and an antibody or fragment thereof linked to the nanocage monomer, the antibody or fragment thereof comprising a first member of a binding pair; wherein a plurality of the fusion proteins self-assemble to form a nanocage in which a plurality of the antibodies or fragments thereof decorate the exterior surface of the nanocage, whereby the first member of the binding pair is exposed for interacting with a second member of a binding pair.

68.WO/2022/221536IMMUNOSTIMULATORY CYCLIC DI-NUCLEOTIDE DELIVERY SYSTEM COMPOSITIONS AND METHOD OF USE THEREOF
WO - 20.10.2022
Clasificación Internacional A61K 47/69 Nº de solicitud PCT/US2022/024823 Solicitante VIRGINIA COMMONWEALTH UNIVERSITY Inventor/a ZHU, Guizhi
Provided herein are pH -responsive nanovaccines (NVs) that stimulate the immune system. The NVs comprise nano- or micro-particles to which CDN-modified i-motif DNA is attached. When endocytosed within a subject to whom they are delivered, the change in pH to an acidic environment cause the CDNs to be released from the NVs. The CDNs are STING (stimulator of interferon genes) agonists and after their release, they bind to and activate STING, a critical step in stimulating the immune system. The NVs are used e.g. for cancer immunotherapy, to treat viral infections and/or as vaccine adjuvants.

69.4073113THERAPEUTISCHE ZUSAMMENSETZUNGEN MIT EINEM AMYLOID-BETA-ANTIKÖRPER ODER IMPFSTOFF ZUR VORBEUGUNG UND BEHANDLUNG VON DIASTOLISCHER DYSFUNKTION
EP - 19.10.2022
Clasificación Internacional C07K 16/18 Nº de solicitud 20899767 Solicitante AMBETEX PTY LTD Inventor/a MCGEE SEAN
Methods for preventing or treating diastolic dysfunction in an individual comprising providing in an individual in need of said prevention or treatment a therapeutically effective amount of anti-Aβ42 antibody, compositions for providing in an individual a therapeutically effective amount of an anti- Aβ42 antibody, methods for determining likelihood of an individual having or developing diastolic dysfunction.

70.20220323559NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST VARIOUS CANCERS
US - 13.10.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17721946 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.

71.20220328127PEPTIDE BASED VACCINE GENERATION SYSTEM WITH DUAL PROJECTION GENERATIVE ADVERSARIAL NETWORKS
US - 13.10.2022
Clasificación Internacional G16B 15/30 Nº de solicitud 17711310 Solicitante NEC Laboratories America, Inc. Inventor/a Renqiang Min
A computer-implemented method is provided for generating new binding peptides to Major Histocompatibility Complex (MHC) proteins. The method includes training, by a processor device, a Generative Adversarial Network GAN having a generator and a discriminator only on a set of binding peptide sequences given training data comprising the set of binding peptide sequences and a set of non-binding peptide sequences. A GAN training objective includes the discriminator being iteratively updated to distinguish generated peptide sequences from sampled binding peptide sequences as fake or real and the generator being iteratively updated to fool the discriminator. The training includes optimizing the GAN training objective while learning two projection vectors for a binding class with two cross-entropy losses. A first loss discriminating binding peptide sequences in the training data from non-binding peptide sequences in the training data. A second loss discriminating generated binding peptide sequences from non-binding peptide sequences in the training data.

72.WO/2022/216584PEPTIDE BASED VACCINE GENERATION SYSTEM WITH DUAL PROJECTION GENERATIVE ADVERSARIAL NETWORKS
WO - 13.10.2022
Clasificación Internacional G16B 40/00 Nº de solicitud PCT/US2022/023264 Solicitante NEC LABORATORIES AMERICA, INC. Inventor/a MIN, Renqiang
A method is provided for generating new binding peptides to MHC proteins includes training (430), by a processor device, a Generative Adversarial Network GAN having a generator and a discriminator only on a set of binding peptide sequences given training data including the set of binding peptide sequences and a set of non-binding peptide sequences. A GAN training objective includes the discriminator being iteratively updated to distinguish generated peptide sequences from sampled binding peptide sequences as fake or real and the generator being iteratively updated to fool the discriminator. The training includes optimizing (440) the GAN training objective while learning two projection vectors for a binding class with two cross-entropy losses. A first loss discriminating binding peptide sequences in the training data from non-binding peptide sequences in the training data. A second loss discriminating generated binding peptide sequences from non-binding peptide sequences in the training data.

73.WO/2022/219530ENGINEERING OF PROBIOTIC E.COLI NISSLE 1917 EXPRESSING THE SARS-COV-2 SPIKE PROTEIN AS A CHIMERIC MODEL OF INTESTINAL IMMUNIZATION AGAINST COVID19
WO - 20.10.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/IB2022/053426 Solicitante NEXTBIOMICS S.R.L. Inventor/a SARNELLI, Giovanni
Probiotic cell of Escherichia Coli Nissle 1917 transformed with a construct suitable for the expression and presentation on the probiotic cell surface of a fusion protein comprising at least one portion of a transport protein coupled to at least one portion of an antigenic protein or peptide of a virus belonging to the Coronaviridae family, in particular SARS-CoV-2; also described is a pharmaceutical or food supplement composition, suitable for oral administration, comprising such a probiotic cell for use as a vaccine against

a virus belonging to the Coronaviridae family, in particular SARS-CoV-2, having the peculiarity of stimulating the gastrointestinal immune system.

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