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

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Noticias en la Web

Cobertura vacunal de la meningitis pueden evitar 3 millones de casos y 900.000 muertes para 2030

1 may. La Organización Mundial de la Salud (OMS) y diferentes líderes mundiales se reúnen este viernes en París para abordar la meningitis con la nueva hoja de ruta 'Derrotar a la meningitis para 2030' que, según ha señalado la responsable de la lucha contra la meningitis de la OMS, Marie-Pierre Preziosi, "con una correcta cobertura vacunal se puede llegar a la eliminación de la enfermedad" y, si se aplica la hoja de ruta a nivel mundial, "de aquí a 2030 se podrían evitar cerca de tres millones de casos de meningitis, 900.000 muertes y 800.000 discapacidades por la enfermedad".

La meningitis es una enfermedad mortal y debilitante; ataca rápidamente, provoca graves consecuencias sanitarias, económicas y sociales, y afecta a personas de todas las edades en todas las partes del mundo. La hoja de ruta 'Derrotar a la meningitis para 2030' es un plan pionero examina de forma holística cómo detectar, controlar y vencer la meningitis en todas las regiones del mundo, y cómo proporcionar rehabilitación a quienes han padecido la mortal enfermedad.

Según ha explicado Marie-Pierre Preziosi, el acto tendrá lugar en el Instituto Pasteur y contará con el apoyo de destacados atletas que defenderán la causa antes de los Juegos Paralímpicos de París ya que "la meningitis es una enfermedad tal que quienes la padecen pueden verse afectados de forma muy dramática ya que uno de cada seis morirá, y una de cada cinco personas que sobrevivan al caso agudo de infección quedará con discapacidades permanentes". "Algunos de nuestros atletas paralímpicos tuvieron meningitis y aun así se convirtieron en atletas, y realmente van a correr en los próximos juegos", ha destacado.

Si se financia y aplica en su totalidad, la hoja de ruta puede evitar al menos 900.000 muertes y 2,7 millones de infecciones de meningitis prevenibles mediante vacunación de aquí a 2030. También supone ahorrar entre 4.000 y 10.000 millones de dólares en costes médicos para las comunidades afectadas y el sector sanitario, además de otros miles de millones en costes indirectos.

Por ello, la experta ha resaltado el potencial que tienen las nuevas vacunas para la meningitis, como "la nueva vacuna pentavalente Men5CV que la OMS registró hace un año y que cubre las cinco meningitis más prevalentes en África".

"Antes se utilizaba una vacuna monovalente, pero cubría una de las causas principales, pero no todas. Y esta vacuna cubre todas las causas. Las recomendaciones de uso se hicieron en octubre y, en marzo, Nigeria experimentó una dramática epidemia de enfermedad meningocócica C y, por primera vez, tenían la vacuna que podía cubrir todas las diferentes causas. Se trata de un gran avance, porque creemos que en los próximos años podríamos, por así decirlo, borrar el término 'cinturón de la meningitis' de África", ha explicado Marie-Pierre Preziosi.

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Así, ha incidido en la eficacia que tienen estas nuevas vacunas "porque se trata de vacunas conjugadas con tecnología similar, que es muy importante para crear protección indirecta además de directa".

"Estas vacunas son muy potentes porque son vacunas conjugadas. De hecho, conjugamos la vacuna con el antígeno. Es decir, la cápsula de una bacteria, que es la cubierta de una bacteria, junto con un portador proteínico, y ese enlace entre la proteína y este antígeno, que es un azúcar, por así decirlo, es muy inmunogénico", ha detallado.

No obstante, para que la iniciativa de acabar con la meningitis tenga éxito en 2030, la experta ha apuntado que "se necesitarían 440 millones de dólares" (411 millones de euros) y "una inversión catalizadora de 130 millones de dólares solo para realizar las actividades de investigación prioritarias que impulsarán este éxito y traerán otros éxitos". "Y la rentabilidad es muy buena", ha asegurado.

"Nuestros sistemas sanitarios no están equipados para hacer un seguimiento y evaluar a las personas con meningitis. Así que no hay sistemas sobre cómo podemos detectar cualquiera de estas secuelas y consecuencias. En segundo lugar, si hay secuelas, no hay servicios de rehabilitación ni equipos disponibles. Los países no sólo deben invertir en la prevención de epidemias mediante la vacunación y una buena vigilancia. Los países deben invertir en mejores servicios de diagnóstico, tratamiento y atención", ha advertido por su parte la jefa de Unidad de Salud Cerebral, la doctora Tarun Dua.

La hoja de ruta, aprobada por la Asamblea Mundial de la Salud en la primera resolución de la historia sobre la meningitis en 2020, detalla paso a paso cómo reforzar la prevención, el diagnóstico, el tratamiento y la atención de la meningitis.

Los objetivos se alcanzarán a través de cinco pilares: prevención y control de la epidemia, diagnóstico y tratamiento, vigilancia de la enfermedad, atención y apoyo, y promoción y compromiso. Este enfoque no solo aborda la prevención y el tratamiento de la meningitis, sino que también pone de relieve el apoyo y la atención necesarios para las personas que viven con afecciones discapacitantes derivadas de la enfermedad infecciosa.

Fuente: El Nacional. Disponible en https://acortar.link/gn70zE

COVID-19: la vacuna de AstraZeneca puede provocar coágulos sanguíneos y bajar el recuento de plaquetas en la sangre

1 may. El gigante farmacéutico AstraZeneca admitió que su ampliamente utilizada vacuna para la COVID-19, denominada Covishield, puede causar efectos secundarios poco frecuentes como coágulos en la sangre y disminución en la cantidad de plaquetas.

Covishield fue desarrollada por la compañía británico-sueca en colaboración con la Universidad de Oxford, Reino Unido, y producida por el Instituto Serum en India. Ha sido ampliamente administrada en más de 150 países, incluyendo Gran Bretaña e India.

Estudios realizados durante la pandemia determinaron que esta vacuna tenía una efectividad de entre 60 y 80 % contra el entonces nuevo coronavirus.

Sin embargo, investigaciones subsecuentes han descubierto que la vacuna también puede provocar la formación de coágulos sanguíneos, lo que puede resultar fatal.

Una demanda colectiva introducida en el Reino Unido, y que busca una retribución de hasta USD 125 millones para 50 víctimas, alegó que la vacuna causaba muertes y lesiones severas.

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Uno de los demandantes afirmó que la vacuna le había provocado una lesión cerebral permanente luego de que se desarrollara un coágulo, lo que le impedía trabajar.

Aunque AstraZeneca ha rechazado estas acusaciones, en uno de los documentos del tribunal admitió por primera vez que la vacuna puede, "en muy raros casos, causar el STT" o el síndrome de trombosis con trombocitopenia, cuyos rasgos principales son los coágulos sanguíneos y un bajo recuento de plaquetas en humanos.

Según The Telegraphen el expediente judicial que la compañía presento al tribunal en febrero, señalaron: "Se admite que la vacuna de Astrazeneca puede, en muy raros casos, causar el STT. Aún no conocemos el mecanismo causal".

"Sin embargo, el STT también puede ocurrir en ausencia de la vacuna de Astrazeneca (o de cualquier vacuna). Determinar las causas en cada caso individual requerirá de pruebas periciales", añadió la compañía.

Esta admisión de AstraZeneca contrasta con la declaración hecha por la empresa en 2023, según la cual no aceptaron "que la vacuna sea la causa de SST a un nivel general".

La Organización Mundial de la Salud (OMS) confirmó que Covishield puede tener efectos secundarios que ponen en riesgo la vida de los pacientes: "Luego de la aplicación de esta vacuna se ha reportado un efecto secundario muy poco frecuente llamado trombosis con trombocitopenia, que incluye episodios inusuales de coagulación sanguínea asociados con una baja cuenta en las plaquetas".

Según el Consejo de Organizaciones Internacionales de las Ciencias Médicas, los efectos secundarios "poco frecuentes" son aquellos que se reportan en uno de cada 10.000 casos.

"En países en los que se sigue contagiando el SARS-CoV-2, los beneficios de vacunarse contra el covid-19 superan con mucho los riesgos", aclaró la OMS.

Fuente: INDEPENDENT en Español. Disponible en https://acortar.link/IRj95B

Moderna gears up for potential RSV vaccine launch this fall after better-than-expected Q1

May 2. With Moderna's COVID-19 sales on the backfoot following the switch to an endemic vaccine market, the Massachusetts-based biopharma is busy laying the groundwork for its next potential mRNA shot in respiratory syncytial virus (RSV). And despite a head start in the field by competitors GSK and Pfizer, Moderna remains confident that its vaccine candidate, mRNA-1345, will still have a niche to fill.

Moderna currently expects initial approvals of its RSV vaccine to start rolling in during the first half of 2024, the company said in a press release. In turn, the company is eyeing a potential U.S. launch in the fall, which would capitalize on its established commercial efforts in the seasonal COVID-19 immunization market, Moderna explained.

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RSV is a seasonal cold virus, but one that can cause severe breathing problems and pneumonia in the elderly, the very young and the immunocompromised.

With mRNA-1345's potential approval, Moderna would be wading into a fierce vaccine war already brewing between GSK and Pfizer, which won historic nods for their own RSV shots last May and have both already been raking in sales.

That said, Moderna's mRNA vaccine—if approved—would be the only shot on the market in a prefilled syringe, which could offer a potential convenience edge over its competitors, the company's CEO, Stéphane Bancel, said on a call with investors Thursday.

By removing preparation steps before administering its vaccine, Moderna is hoping to ease the burden on pharmacists and clinicians and potentially alleviate wait times for patients, too. The company's own research has found that the prefilled presentation of its shot was "three to four times more efficient than vaccines requiring reconstitution," Moderna explained in its release.

As the company prepares for its expected RSV rollout, Moderna's medical team has been working with pharmacies and hospital networks "literally on a daily basis" to help spread the word about its vaccine candidate's safety and efficacy profile, as well as the potential benefits of its prefilled syringe formulation, Bancel said.

Meanwhile, the company also feels its data package should help level the playing field by supporting a "parity recommendation" from the CDC's Advisory Committee on Immunization Practices (ACIP) post-approval, Moderna president Stephen Hogue said on the investor call.

Although Moderna expects its RSV vaccine to be a key revenue contributor moving forward, the company has yet to release guidance around potential sales of mRNA-1345, the company's chief financial officer, Jamey Mock, said.

Moderna touched on its RSV launch plans as it reported $167 million in first-quarter sales for the year, down a whopping 91% from the $1.9 billion it generated over the same stretch in 2023 when the company was still profiting off delivered doses deferred from 2022.

Nevertheless, the sharp decline in COVID-19 vaccine sales was to be expected and Moderna's sales haul for the quarter still managed to come out ahead of consensus expectations of $93 million, William Blair analysts Myles Minter and Sarah Schram wrote in a note to clients Thursday.

The analysts called the sales decline "unsurprising" thanks to the market shift from pandemic to endemic and declines in previously expected vaccination rates.

Further, Moderna's reported net loss of $1.2 billion in the quarter proved less severe than expected, the William Blair team added, crediting Moderna for its cost-saving efforts and reduced operating expenses.

For the COVID-19 vaccine business, Moderna is now taking a regional approach, Bancel told investors. In the U.S., the company is working with public health officials, healthcare providers and pharmacies to increase vaccination coverage rates across the country, the CEO explained.

Over in Europe, meanwhile, the company is actively engaged in a 2024 tender program that could see Moderna deliver millions of doses annually for up to four years, Bancel added.

And as for the rest of the world, Moderna is overhauling its commercial teams to help prioritize markets that provide "greater commercial focus and impact," he explained. Bancel pointed to the company's recent

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agreement to provide Brazil with 12.5 million doses of its COVID shot Spikevax in the second quarter as a prime example of that strategy.

Looking ahead, the company reaffirmed its expectation to generate roughly $4 billion in 2024. That sum will likely represent a “low point” for the company ahead of a planned return to growth in 2025, Mock said.

Fuente: Fierce Pharma. Disponible en https://acortar.link/eCXw2j

Vacuna de refuerzo contra la tosferina antes de la adolescencia, ¿es necesaria?

3 may. Entre las siete enfermedades más contagiosas entre los niños y muy graves para los bebés menores de un año, se encuentran el sarampión y la tosferina. Pese a ser prevenibles mediante la vacunación, las dos están incrementando su presencia en Europa, como reconoce el Centro Europeo para la Prevención y el Control de Enfermedades (ECDC); y en nuestro país, así ocurre especialmente con la tosferina.

La vacunación durante el embarazo y llevar al día el calendario de inmunizaciones infantil resulta fundamental para protegernos de esta enfermedad infecciosa. Pero los pediatras insisten en que también es necesario ampliar esta medida a otro grupo de población. En las siguientes líneas explicamos la situación actual de esta enfermedad, sus síntomas y tratamiento y la importancia de la vacunación.

Tosferina: síntomas, contagio y tratamiento

La tosferina es una infección respiratoria muy contagiosa causada por la bacteria *Bordetella pertussis*. Se transmite por el aire, a través de gotitas de saliva al hablar, toser o estornudar, o por contacto con objetos contaminados por la persona infectada.

¿Cuáles son los síntomas de la tosferina? Se manifiestan en torno a una semana después de producirse el contagio. Al principio parece un resfriado común (congestión nasal, mocos, estornudos y, a veces, tos o fiebre), pero pasan los días y aparecen los más característicos que duran en torno a unas cuatro semanas:

- Ataques de tos que casi no dejan ni respirar, seguidos de un estridor (gallo) al coger aire. Ocurren, sobre todo, por la noche.
- Con frecuencia, estos episodios acaban con vómitos.
- Mucho cansancio tras la tos.

Complicaciones

Pasada la tos intensa, empezará la fase de convalecencia y la mejoría. Pero puede complicarse con neumonía, encefalopatía, insuficiencia respiratoria, apneas, crisis de cianosis (color azul de la piel por falta de oxígeno), convulsiones y hasta muerte súbita.

De ahí la importancia de su detección precoz, para comenzar el tratamiento con antibióticos en la fase inicial. Además, como comentan los pediatras, será esencial favorecer el descanso del enfermo y evitar su deshidratación.

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Pero también resulta fundamental su declaración obligatoria por parte de los profesionales médicos con el fin de prevenir la propagación de la enfermedad, controlar los brotes (dos o más casos) y proteger a la población vulnerable (menores de cuatro meses).

Y es que, aunque la tosferina se considera una enfermedad infantil y es muy peligrosa para los más pequeños, se contrae con facilidad a cualquier edad y se detecta con frecuencia en personas de mayor edad y hasta causa su fallecimiento.

Vacunas frente a la tosferina

Pasar la enfermedad y estar vacunado no garantiza una inmunidad permanente. Aun así, los especialistas recuerdan que la vacunación es la medida preventiva más eficaz para controlar la transmisión de la tosferina.

El calendario de inmunizaciones infantil de España incluye la vacuna contra la tosferina. Es una vacuna inactivada (compuesta por organismos que no están vivos) que forma parte de vacunas combinadas, es decir, que en una dosis se puede llegar hacer frente a seis patógenos distintos. Este suero se administra cuatro veces:

La vacuna hexavalente (la tosferina, el tétanos, la difteria, la polio, la hepatitis B y la H. influenzae tipo b, causante de enfermedades tan graves como la meningitis) se pone a los dos, cuatro y once meses.

A los seis años, se incluye en los preparados Tdpa (difteria, tétanos y tosferina) o con refuerzo VPI para polio.

Vacuna de la tosferina en embarazadas

Además, desde 2015 se vacuna a las mujeres embarazadas. Al principio se recomendaba hacerlo entre la semana 28 y 36 para prevenir la tosferina en el recién nacido y los primeros meses de vida; y desde 2020, preferiblemente a las 27-28 semanas.

Esta medida ha resultado muy beneficiosa, a tenor de los resultados de un trabajo reciente llevado a cabo por investigadores del Instituto de Salud Carlos III (ISCIII) y publicado en la revista Vaccine: en los años previos a la vacunación prenatal, los lactantes de 0 a 2 meses experimentaban una tasa de hospitalización cinco veces mayor que los niños de 3 a 11 meses, y estaban hospitalizados un promedio de dos días más, permaneciendo estas diferencias estables a lo largo de este período.

Las coberturas vacunales, según datos de 2022 del Ministerio de Sanidad, superan el 95 % en el caso de los peques y llegan al 87,2 % para las gestantes.

Situación actual de la tosferina

Sin embargo, todas estas medidas preventivas resultan insuficientes. Y es que llevamos unos años en los que con frecuencia oímos hablar de brotes de sarampión en Europa que nos ponen en alerta. Y si bien en España la cobertura de vacunación es elevada, con una enfermedad transmisible hay que tener en cuenta que “nunca se puede bajar la guardia”. De hecho, en lo que vamos de año la Red Nacional de Vigilancia Epidemiológica (RENAVE) informa que se han confirmado 33 casos de sarampión, cuando en todo 2023 fueron 11.

Pero los datos son más preocupantes en el caso de la tosferina. Cada 3-5 años hay un aumento de la incidencia en los meses cálidos, y desde 2010 padecemos un claro incremento. El pico llegó en 2015 con 19,9 casos por 100.000 habitantes. En cambio, la pandemia redujo la incidencia.

Sin embargo, desde mediados de 2023 la tosferina ha experimentado un rápido crecimiento marcando una

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onda epidémica muy distinta:

Por un lado, ha resurgido con más fuerza. Desde octubre a abril, se han notificado 11.175 casos y la incidencia estimada entre enero y marzo llega a los 81,3 casos por 100.000 habitantes.

Y, por otro, se ha modificado el patrón estacional clásico, con la acumulación de casos en los meses de más calor.

Además, aunque la mayoría de los casos son leves, este año se han producido cuatro fallecimientos: dos bebés prematuros de dos y tres meses de edad, cuyas madres no estaban vacunadas adecuadamente, y dos personas mayores con otras enfermedades.

Adolescentes, grupo con más infecciones

También es cierto que se hacen muchos más diagnósticos, porque hay más sensibilización de detectarla en todos los grupos de población y se cuentan con pruebas diagnósticas de alta eficacia. Así, se sabe que según la actualización más reciente de la situación de la tosferina en España, realizada por el Centro Nacional de Epidemiología, Instituto de Salud Carlos III, la mayoría de los casos (68,7 %) se producen en menores de 15 años.

Y de ellos, el grupo más numeroso está en los adolescentes de entre 10 a 14 años (38,7 %), seguido del grupo de 5 a 9 años (18,2 %). Además, la incidencia está disparadas en esas edades: entre enero-marzo, el aumento más rápido se ha producido en los grupos de 10-14 años (587,1 casos por 100.000) y de 5-9 años (320,6 casos por 100.000).

Nuevas estrategias de prevención

Como se destaca en este último informe, “en situaciones de alta circulación de tosferina, como la que estamos experimentando”, la mayor prioridad en salud pública consiste en la prevención de las hospitalizaciones y muertes en los menores de un año.

Y ¿cómo hacerlo? Para ello, insisten en que es clave dirigir los esfuerzos a vigilar las coberturas de vacunación en las gestantes y en los niños en el primer año de vida, y controlar que los refuerzos a los 6 años se llevan a cabo (en algunas comunidades autónomas es inferior al 80 %).

Pero no hay que olvidar que la protección de las vacunas actuales decae a los 5-10 años y no actúa sobre la colonización nasofaríngea. Y como recuerda la Asociación Española de Vacunología (AEV), estas vacunas no impiden la infección, por lo que una persona vacunada se puede infectar, ser portadora asintomática y transmitir la infección.

Por eso, la AEV manifiesta que “son necesarias nuevas vacunas para las dosis de recuerdo del adolescente y el adulto, que sean monovalentes (no combinadas) y que proporcionen una inmunidad esterilizante que evite la infección”.

Y mientras llegan, ¿qué hacemos? Es vital nuevas estrategias de vacunación. Vacunar a los familiares y futuros contactos del bebé es una de ellas, como también hacerlo con las personas mayores. Pero cada vez más resuena entre los expertos otra iniciativa más sencilla —y barata— de poner en marcha para reducir la transmisión.

Vacuna de la tosferina para adolescentes

Desde 2003 el Comité Asesor de Vacunas de la Asociación Española de Pediatría (CAV-AEP) pide que se añada una dosis de recuerdo a los 14 años. En la anterior ola, en 2013, lo volvió a recomendar el Grupo de

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Trabajo de Tos ferina, compuesto por diversos organismos. Y ahora, ante el incremento "extraordinario" en el número de casos, reclama reforzar el calendario vacunal infantil incluyendo una dosis adicional antes de la adolescencia. Hoy en día, tan solo el Principiado de Asturias administra esa quinta dosis, junto con la vacuna del tétanos y la difteria (Tdpa).

Si bien los pediatras plantean que para cubrir esa pérdida de efectividad se incorpore este refuerzo en la adolescencia, es decir, entre los 12 y 14 años, lo idóneo para la AEV es adelantarlo a la preadolescencia. De este modo, al administrar la vacuna de la tosferina a los 10-11 años, cuando han transcurrido 4-5 años desde la última dosis, se consigue proteger al adolescente, minimizar la aparición de brotes escolares y familiares y, sobre todo, "disminuir la carga sanitaria y para la salud pública que representan estos brotes", afirma Fernando Moraga-Llop, portavoz de la Asociación Española de Vacunología.

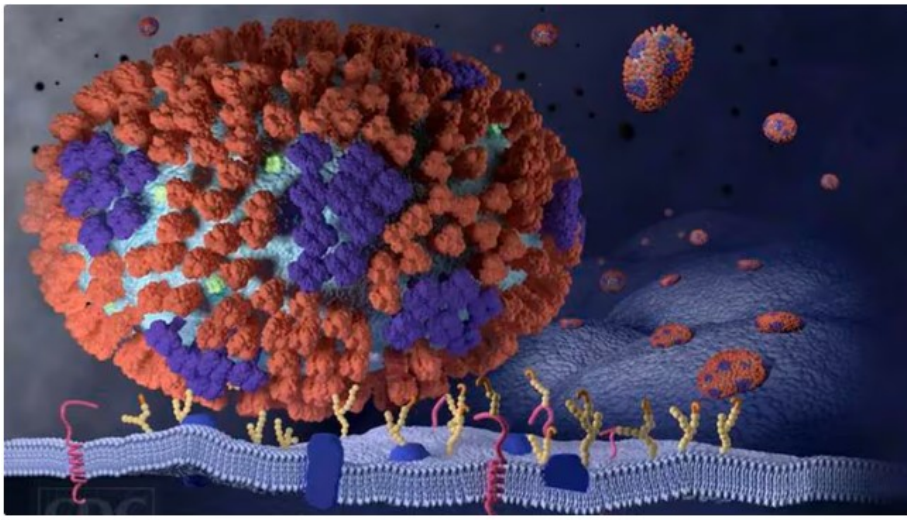
Como señala la Asociación Española de Pediatría de Atención Primaria (AEPap), estas son las vacunas disponibles con una dosis entre los 12-14 años:

- Tdpa: Boostrix y Triaxis.
- vacuna combinada Tdpa-VPI: Boostrix Polio.
- vacuna combinada DTPa-VPI: Tetraxim e Infanrix-IPV (solo hasta los 13 años).

Fuente: Consumer Eroski. Disponible en https://acortar.link/716aYo

La vacuna contra la gripe podría ser realidad; un estudio mostró efectividad en roedores

5 may. Un avance en la investigación médica ha dado resultados para combatir la influenza de manera más efectiva. Una vacuna universal contra la gripe ha alcanzado un 100% de efectividad en roedores, lo que significa un punto de inflexión en la lucha contra esta enfermedad. El desarrollo del antídoto apunta a una solución a largo plazo contra los tipos de virus de la gripe que mutan de forma constante, esto hace necesario un nuevo enfoque en la inmunización anual.



La vacuna tuvo la capacidad de estimular anticuerpos en ratos para combatir con mayor efectividad la gripe. (CDC).

La vacuna se centra en un componente del virus que permanece constante, de esta forma, evita el principal desafío que representan las mutaciones anuales del virus. Este enfoque genera anticuerpos capaces de reconocer y combatir eficazmente las estructuras inmutables del virus, independientemente de la cepa. Esto representa un cambio de paradigma en el desarrollo de vacunas, moviéndose hacia una protección más generalizada y duradera, de acuerdo con el estudio publicado en la revista Science Transnational Medicine.

Los ensayos tuvieron éxito en roedores

Los ensayos, que se llevaron a cabo en ratones y hurones, demostraron la capacidad de la vacuna para estimular la producción de anticuerpos necesarios para prevenir la infección en su totalidad, lo que podría

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significar una reducción en la incidencia y la mortalidad de la enfermedad. Este éxito en modelos animales es un paso crucial hacia el desarrollo de una vacuna similar para humanos, que podría eliminar la necesidad de vacunaciones anuales adaptadas a cepas específicas, brindando una solución a largo plazo contra la gripe.

La creación de una vacuna universal que pueda ofrecer protección duradera contra todas las formas del virus de la gripe es una meta largamente perseguida por la comunidad científica. Este logro no solo tiene el potencial de mejorar la salud pública a nivel global sino también de simplificar las campañas de vacunación y reducir los costos asociados a la investigación y producción de nuevas vacunas cada año.

Las cepas de la gripe

Los virus de la gripe se clasifican en tres categorías principales: Tipo A, Tipo B y Tipo C. La primera es causante de la mayoría de los casos de gripe estacional. Se detecta que más del 70% de los casos en una temporada típica son provocados por el Tipo A, mientras que el resto se atribuye principalmente al Tipo B. El Tipo C, por otro lado, se presenta con menor frecuencia y suele afectar a niños. Esta clasificación subraya la importancia de monitorear y adaptar las campañas de vacunación para combatir el virus efectivamente, de acuerdo con el Manual MSD.

Los virus Tipo A y Tipo B se diferencian por sus múltiples cepas, que causan los brotes estacionales de la enfermedad. Estas cepas varían de año en año, lo que puede disminuir la efectividad de las vacunas previas. Las variantes del Tipo A se identifican por dos proteínas en su superficie, H (hemaglutinina) y N (neuraminidasa), con variaciones como la H1N1, responsable de la pandemia de gripe porcina 2009-2010, y la H3N2, vinculada a numerosas infecciones en Estados Unidos. Este sistema de nomenclatura, que incluye el tipo de virus, su lugar de origen y el año de detección, es crucial para el seguimiento y la investigación de la gripe.

Fuente: infobae. Disponible en https://acortar.link/61z7Wz

World's First RSV Vaccine For Older Adults Now Registered For Use In NZ

May 6. The registration of a new vaccine which took around 50 years to develop, is set to offer older Kiwis protection against RSV-associated lower respiratory tract disease for the first time.

RSV is a common and highly contagious respiratory virus, often considered an illness that mainly impacts children and causes cold and flu-like symptoms. However, the disease can also cause serious illness and in some cases, even death, in older adults. Data shows the impact of RSV in adults aged 60 years and older is significant, resulting in over 470,000 hospitalisations and 33,000 deaths in high-income countries.

Older adults with certain chronic medical conditions, including asthma, diabetes, chronic obstructive pulmonary disease (COPD) and congestive heart failure have an elevated risk of being hospitalised from RSV compared with those without these conditions.

Maori, Pacific peoples and those living in lower socioeconomic areas also have a greater risk of hospitalisation from the disease.

Symptoms of RSV in adults are often similar to other acute respiratory infections, like colds or influenza, including a blocked nose, cough, fatigue, fever, sore throat, runny nose, body aches and headache, and a test is needed to confirm a diagnosis.

Arexvy is the world's first respiratory syncytial virus (RSV) vaccine for older adults and has been registered for

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use in Australia, the UK, the European Union, the US, Canada and Japan. Research shows an estimated 24% of US adults aged 60+ have reported receiving a RSV vaccine.

Trial data shows Arexvy has an overall efficacy of 82.6% against RSV-Lower Respiratory Tract Disease (LRTD).

A 94.6% efficacy was observed against RSV-LRTD in adults aged 60 and over with underlying conditions such as heart disease or diabetes – the population that is associated with the majority of RSV hospitalisations.

Nonetheless, as with other vaccines, the vaccine may not protect all recipients.

The vaccine was granted priority assessment through its NZ registration process to ensure availability ahead of the winter season. A funding application for Arexvy has also been submitted to Pharmac for their assessment.

Brett Marett, GSK NZ medical director, says the NZ registration and consent to distribute is an important step closer to delivering New Zealand's first vaccine for RSV to help protect adults aged 60+.

"Until now, RSV was one of the major respiratory infectious diseases with no vaccine.

"We welcome the NZ registration which will mean that older adults in New Zealand, including those who are most at risk of developing severe disease from RSV due to underlying health conditions, have the opportunity to receive a vaccine to help protect them for the first time. This is a major step forward from a public health perspective.

"Arexvy has demonstrated high efficacy in clinical trials and we look forward to working with healthcare stakeholders to ensure those at high risk of severe RSV infection can access it," he says.

Older adults may consult with their healthcare professional for further information on RSV. The Arexvy vaccine will be available for private purchase from GP clinics from 1 May 2024. The most common side effects are injection site pain, fatigue, muscle pain, headache, and joint pain.

Fuente: SCOOP Health. Disponible en https://acortar.link/saZzpJ

La Comisión Europea suspende la comercialización de la vacuna contra la COVID-19 de AstraZeneca

6 may. El máximo organismo del poder ejecutivo y la iniciativa legislativa de Europa, la Comisión Europea, ha interrumpido de forma indefinida la venta de la vacuna contra la COVID-19, fabricada por la empresa farmacéutica AstraZeneca, llamada Vaxzevria. En concreto, ha sido la propia empresa la que solicitó el pasado 5 de marzo al organismo su retirada del mercado debido a los efectos secundarios que puede provocar en los individuos.

Unos meses después, la Comisión Europea ha aceptado la petición de AstraZeneca. El motivo principal se debe a que durante la pandemia los investigadores observaron que la vacuna provocó en algunos casos trombosis en los pacientes, un efecto

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secundario muy poco común. Desde las oficinas de AstraZeneca en España han emitido un comunicado oficial valorando la situación: “Estamos increíblemente orgullosos del papel que desempeñó Vaxzevria para poner fin a la pandemia mundial. Según estimaciones independientes, solo en el primer año de uso se salvaron más de 6,5 millones de vidas y se suministraron más de 3.000 millones de dosis en todo el mundo”.

Además, han desmentido el hecho de que la retirada de esta vacuna tenga que cierta relación con los procesos judiciales que se han abierto durante los últimos meses debido a los efectos secundarios que han sufrido diversos pacientes. “Dado que se han desarrollado múltiples vacunas actualizadas para variantes de COVID-19, ahora hay un excedente de vacunas disponibles. Esto ha provocado una disminución en la demanda de Vaxzevria, que ya no se fabrica ni suministra”, afirman desde AstraZeneca.

Efectos secundarios

Cuatro años después del fin de la cuarentena, un periodo de tiempo que paralizó al planeta, AstraZeneca ha confirmado que la vacuna que prepararon para combatir contra el COVID-19, Vaxzevria, puede provocar efectos secundarios. A los pocos meses de finalizar la pandemia, la empresa comenzó a recibir cientos de demandas en las que arremetían contra la farmacéutica y la vacuna por ocasionar lesiones graves en muchas personas, e incluso la muerte en los casos más extremos.

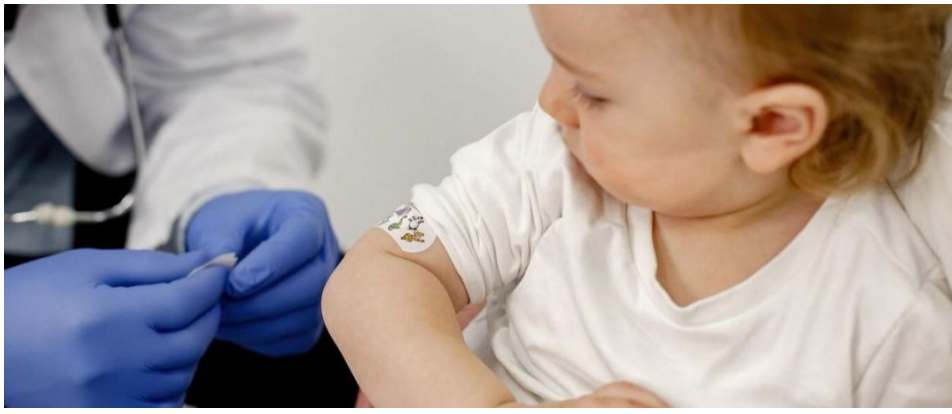
En un documento presentado ante la Comisión Europea durante el mes de febrero, la farmacéutica afirmó que su vacuna contra el coronavirus puede, “en casos muy raros, causar TTS (síndrome de trombosis con trombocitopenia)”. “Se desconoce el mecanismo causal. Además, el TTS también puede ocurrir en ausencia de la vacuna AZ (o cualquier vacuna). La causalidad en cualquier caso individual será materia de prueba pericial”, añadían en el documento.

Fuente: AS Ciencia. Disponible en https://acortar.link/KygG8b

Galicia se blinda frente al neumococo con la vacuna 20-valente que inmunizará a 15.000 niños

7 may. La Xunta de Galicia vacunará a 14.850 bebés nacidos en 2022 contra la enfermedad neumocócica invasora donde se incluye la meningitis. Esta protección se logrará mediante la administración de la vacuna 20-valente, recientemente autorizada para su uso en menores y agregada al calendario de vacunación gallego por la Consejería de Sanidad, tal y como explica la Xunta en un comunicado.

Esta decisión se basa en un informe presentado por el Consello de la Xunta, centrado en la prevención de las meningitis bacterianas en Galicia. Los bebés que anteriormente recibieron la vacuna 13-valente contra el neumococo ahora recibirán una dosis de la vacuna 20-valente, que ofrece una cobertura adicional con más serotipos incluidos.



Se espera un impacto indirecto positivo en la población no vacunada, dado que los bebés son importantes transmisores de la enfermedad

El objetivo principal de esta acción, liderada por la Dirección General de Salud Pública, es mejorar la protección directa de los niños y niñas contra la enfermedad, incluyendo los serotipos

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adicionales presentes en la nueva vacuna. Además, se espera un impacto indirecto positivo en la población no vacunada, dado que los bebés son importantes transmisores de la enfermedad.

Esta campaña especial de vacunación, que concluirá el 31 de diciembre, se llevará a cabo en los centros habituales de vacunación. El coste estimado de estas vacunas es de 673.000 euros, lo que refleja el compromiso de la consejería con la protección contra la meningitis, con una inversión total en el Programa Gallego de Vacunación de cerca de 40 millones de euros, manteniendo así a Galicia con uno de los calendarios de vacunación más completos y accesibles del mundo.

LA COMUNIDAD PIONERA FRENTE AL MENINGOCOCCO Y NEUMOCOCO

Galicia lidera la implementación de las últimas innovaciones terapéuticas contra el neumococo y el meningococo, incluyendo estas vacunas en su calendario de inmunización a lo largo de toda la vida.

Actualmente, la vacuna antipneumocócica 20-valente se administra a grupos vulnerables, así como a todos los individuos al cumplir los 65 años. A mediados de abril, la Xunta reemplazó la vacuna 13-valente por esta nueva versión, que también ofrece una cobertura más amplia para menores de edad.

Se calcula que la vacuna 20-valente puede brindar hasta cuatro veces más protección que la versión anterior, considerando los serotipos prevalentes en nuestra región. Según los informes de vigilancia epidemiológica de la consejería, el 60% de los casos de enfermedad neumocócica invasiva, como la sepsis y la meningitis, están causados por serotipos incluidos en la nueva vacuna.

Fuente: ConSalud.es. Disponible en https://acortar.link/yiTd0a

Vacuna neumocócica: las personas mayores están más protegidas

8 may. La vacunación antineumococo es un pilar fundamental en la prevención de infecciones en personas mayores y niños. Sin embargo, el microorganismo que los provoca no siempre es el mismo. Por eso son necesarias hoy más que nunca vacunas capaz de cubrir tantos serotipos como sea posible. Una de ellas, próxima a ser aprobada, es V116. Capaz de "cubrir" 21 cepas diferentes, será la primera vacuna diseñada para proteger específicamente a las personas de edad avanzada. Los resultados de eficacia se presentaron durante la reunión de la Sociedad Internacional de Neumonía y Enfermedades Neumocócicas (ISPPD).

INFECCIONES NEUMOCOCALES

Las infecciones neumocócicas son causadas por la bacteria *Streptococcus pneumoniae*, un microorganismo que puede desencadenar diversas condiciones clínicas. «Las complicaciones de una infección neumocócica dependen de la localización del microorganismo. Infección en el oído, neumonía bacteriemia y meningitis son algunas de las complicaciones asociadas a la presencia de la bacteria que afectan con mayor frecuencia a niños pequeños, ancianos y personas con sistemas inmunológicos debilitados. Para dar una idea del impacto de estas infecciones, basta pensar que cada año, en Italia, la mayoría de 250 mil hospitalizaciones son por neumonía respecto a *Streptococcus pneumoniae*» explica Francesco Vitale, profesor titular de Higiene de la Universidad de Palermo, director del departamento de Oncología y Salud Pública del Policlínico Aou Palermo.

VACUNAS ACTUALES

Afortunadamente, hace tiempo que existen vacunas eficaces para los grupos de edad con mayor riesgo para reducir infecciones y complicaciones por neumococo. Los datos más importantes se refieren a los niños: «De 2000 a 2015 – explica la profesora Susanna Esposito, profesora de pediatría de la Universidad de Parma –

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hubo una reducción del número de infecciones igual al 40 %. Esto se debe a que gracias a la vacunación y el fenómeno de la inmunidad de grupo, el microorganismo circula menos." Pero como suele suceder las vacunas deben actualizarse mientras se mantienen al tanto de las cepas circulantes. «La reducción de la circulación en los niños – señala Caterina Rizzo, profesora de higiene general y aplicada en la Universidad de Pisa – ha provocado un cambio en la tipología de cepas bacterianas típico de la enfermedad del adulto. Por este motivo, contar con una vacuna con serotipos dirigidos contra el neumococo que normalmente no están contenidos en la vacuna pediátrica es esencial para proteger contra las infecciones responsables de enfermedades graves en los ancianos y en los adultos con condiciones de riesgo".

UNA VACUNA DISEÑADA PARA LAS PERSONAS MAYORES

En los últimos años, gracias al análisis de serotipos más extendidos entre la población adulta, las vacunas se han diseñado para intentar llenar el vacío con las disponibles actualmente. Una de ellos es la vacuna V116 diseñada para proteger contra 21 cepas diferentes responsables del 80 % de todas las infecciones en las personas mayores. Los resultados sobre la eficacia se presentaron en la última conferencia de la ISPPD. Los análisis revelaron en primer lugar, la capacidad de la vacuna para generar una respuesta inmune significativa contra los 21 serotipos, una característica que no se puede dar por sentada si se considera que a veces no todos los serotipos producen la misma respuesta. Pero la gran noticia se refiere a la especificidad de la vacunación: «8 cepas presentes exclusivamente en esta vacuna protegen contra el 30 % de las infecciones típicas de los adultos. Los estudios han demostrado que la presencia de estas 8 cepas, que no están contenidas en las vacunas infantiles, proporciona que protección adicional y exclusiva para adultos en riesgo y ancianos", explica Pier Luigi Lopalco, profesor de Higiene de la Universidad de Salento.

¿CUÁNDO ESTARÁ DISPONIBLE?

Hasta la fecha, gracias a los resultados obtenidos en los experimentos, la vacuna está siendo evaluada para marketing. En los Estados Unidos, la FDA está procediendo con una revisión prioritaria y la aprobación ya podría ocurrir antes del verano. En lo que respecta a Europa, se espera la luz verde de la EMA para finales de 2024.

Fuente: Italy24.Press. Disponible en https://acortar.link/LBvS2O

Científicos británicos desarrollan vacuna contra varios coronavirus

10 may. Una amplia gama de coronavirus con potencial para futuros brotes pude ser combatida con una nueva tecnología de vacunas, probada ya en roedores y desarrollada por científicos de universidades británicas, publicó la revista *Nature Nanotechnology*.

Luego de que un coronavirus provocara la pandemia de la Covid-19, expertos de las universidades de Cambridge, Oxford y Caltech trabajan en el novedoso inmunógeno que protege contra coronavirus, incluidos algunos que ni siquiera se conocen aún.

Se trata de un nuevo enfoque, denominado vacunología proactiva, por el que los científicos crean una vacuna antes incluso de que aparezca el patógeno causante de la enfermedad.

De acuerdo con sus investigaciones la nueva inoculación entrena al sistema inmunitario del organismo para que reconozca regiones específicas de ocho coronavirus distintos, entre ellos el SARS-CoV-1, el SARS-CoV-2 y varios que circulan actualmente entre los murciélagos y que podrían saltar a los humanos y provocar una pandemia.

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Con ese método la clave de su eficacia está en que las zonas específicas del virus a las que se dirige la vacuna también aparecen en muchos coronavirus relacionados, por lo que al entrenar al sistema inmunitario protege contra otros no representados en la formulación de la vacuna, incluso sin estar identificados.

Por ejemplo, explicaron los investigadores, la vacuna no contempla al SARS-CoV-1, que causó el brote de SARS en 2003, pero aun así induce una respuesta inmunitaria contra él.

Mark Howarth, de la Universidad de Cambridge y coautor principal comentó a Nature Nanotechnology, que no es preciso esperar a que surjan nuevos patógenos, ya que se sabe suficiente sobre ellos y sus diferentes respuestas inmunitarias como para empezar a construir imnunizantes.

La nueva vacuna Quartet Nanocage se basa en una estructura llamada nanopartícula, una bola de proteínas unidas por interacciones increíblemente fuertes.

Mediante un novedoso superpegamento proteínico, a esta nanopartícula se adhieren cadenas de diferentes antígenos víricos lo que entrena al sistema inmunitario para dirigirse a regiones específicas compartidas por una amplia gama de coronavirus.

Su diseño es mucho más sencillo que el de otras ampliamente protectoras actualmente en desarrollo, lo que, según los investigadores, debería acelerar su paso a los ensayos clínicos en fase 1 previstos para principios de 2025.

Fuente: Prensa Latina. Disponible en https://acortar.link/VGkoSe

Vacuna ARVAC contra COVID-19

10 may. El coronavirus de tipo 2 es un virus altamente transmisible que surgió a fines de 2019 y ha causado una pandemia, denominada Enfermedad por Coronavirus 2019, (COVID-19) constituyendo una amenaza para la salud de los seres humanos.

A fines de diciembre de 2019, varios establecimientos de salud en Wuhan, en la provincia de Hubei, China, informaron sobre grupos de pacientes con neumonía de causa desconocida. Estos pacientes mostraron síntomas como fiebre, tos y malestar en el pecho y, en casos graves, dificultad respiratoria y neumonía bilateral.

Entre los primeros 27 pacientes hospitalizados, la mayoría fueron epidemiológicamente vinculados al mercado mayorista de mariscos de Huanan, un mercado húmedo ubicado en el centro de Wuhan, que comercializaba no solo mariscos, sino también animales vivos, incluidas aves de corral y animales silvestres.

El primer caso conocido se remonta al 8 de diciembre de 2019. El 31 de diciembre los oficiales de Salud Municipal de Wuhan notificaron sobre un brote de neumonía de causa desconocida y la Organización Mundial de la Salud lo informó al mundo. El 11 de marzo de 2020, la OMS definió a la COVID-19 como una pandemia.

Desde entonces se han realizado importantes esfuerzos globales para desarrollar vacunas contra la COVID-19 utilizando diferentes plataformas de vacunas, incluyendo vacunas basadas en virus inactivados, ácidos nucleicos (ADN y ARN), vectores virales y vacunas a subunidad basadas en proteínas recombinantes.

Asimismo, el virus fue mutando y se fueron haciendo prevalentes diferentes variantes denominadas con letras griegas tales como: Beta, Delta, Gamma, Ómicron y han aparecido también subvariantes de Ómicron tales como Ómicron BA.1 y Ómicron BA.5. La variante original se denomina generalmente “Wuhan” por el lugar donde fue notificado por primera vez.

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La vacuna ARVAC Cecilia Grierson es una Vacuna contra la COVID-19 desarrollada en Argentina por la Universidad Nacional de San Martín, el CONICET y el Laboratorio Cassará y aprobada por la ANMAT en octubre de 2023, luego de los estudios clínicos en los que participaron 2094 voluntarios y que se llevaron a cabo en distintos centros del país.

Esta vacuna se basa en proteínas recombinantes, una tecnología segura que ya se aplica en las vacunas contra la Hepatitis B desde hace más de 20 años o más recientemente, el VPH (virus del papiloma humano). Es una tecnología que ha demostrado ser muy segura y además permite desarrollar vacunas que se almacenan entre 2 y 8°C (temperatura de heladera). Estas características podrían permitir que las dosis de la ARVAC Cecilia Grierson, a diferencia de las primeras vacunas contra la COVID-19, sean más económicas y más fáciles de producir y distribuir.

Las reacciones adversas detectadas en los voluntarios que recibieron ARVAC durante los estudios clínicos fueron menores como molestias, dolor en el sitio de aplicación, somnolencia, cansancio/ fatiga, dolor de cabeza y mialgias.

Está indicada como vacuna de refuerzo para mayores de 18 años que tengan esquema primario completo de vacunación contra la COVID-19. Se considera esquema primario completo cuando se acrediten al menos 2 dosis de vacuna con cualquier marca comercial, una dosis para el caso de Cansino y Sputnik light y 3 dosis de cualquier vacuna solo para inmunocomprometidos.

La vacuna ARVAC se administra por vía intramuscular, en el deltoides, preferentemente en el lado menos hábil.

No debe administrarse esta vacuna a personas con antecedentes de alergia severa a alguno de los componentes de la vacuna, recomendándose además permanecer en observación al menos 15 minutos después de la aplicación, como es habitual con cualquier vacuna, para detectar precozmente eventuales reacciones de hipersensibilidad.

La vacuna no fue estudiada en embarazadas, ni en mujeres lactantes.

Es importante que todas las personas a partir de los 6 meses de edad cuenten con esquema primario y al menos un refuerzo aplicado en los últimos 6 meses y continúen con la periodicidad de acuerdo a las siguientes recomendaciones emitidas por el Ministerio de Salud de la Nación:

Riesgo alto de COVID-19 grave: personas de 50 años o mayores, personas gestantes y personas con inmunocompromiso a partir de los 6 meses de vida. Se aplicará una dosis de refuerzo a los seis (6) meses desde la última dosis aplicada y luego continuará con la misma periodicidad cada 6 meses.

Riesgo intermedio de COVID-19 grave o alta exposición laboral a SARS-CoV-2: personas menores de 50 años con comorbilidades no inmunosupresoras (enfermedades crónicas, obesidad), personal de salud y personal estratégico. Dosis de refuerzo a los 6 meses desde la última dosis aplicada y luego continuar con una periodicidad anual.

Riesgo bajo de COVID-19 grave: personas entre 6 meses y 49 años inclusive sin comorbilidades. Dosis de refuerzo a los doce (12) meses de la última dosis aplicada y luego continuar con periodicidad anual. Estos refuerzos son necesarios para sostener la protección y prevenir el desarrollo de formas graves de la enfermedad.

Fuente: Vacunar. Disponible en https://acortar.link/PBiU32

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Rotavirus, pneumococcal vaccinations cover more provinces

May 12. The national vaccination program of Iran, against rotavirus and pneumococcal, started on Sunday in seven more provinces of the country.

The seven provinces are Khorasan Razavi, South Khorasan, North Khorasan, Sistan-Baluchestan, Hormozgan, Bushehr, Khuzestan, and Ilam, IRNA quoted deputy health minister Hassan Farshidi as saying.

Rotavirus is the most common cause of diarrhea in infants, under the age of one, and their hospitalization, the official noted.

Annual rotavirus vaccination prevents the hospitalization of over 50,000 individuals. It will also prevent some 1,200 deaths caused by severe cases of diarrhea.

High-risk regions

On April 13, Pedram Pak-Aein, an official with the health ministry said, "The vaccination program against pneumococcal and rotavirus will focus on tropical and southern regions of the country."

“The immunization initiative will begin in the coming weeks in provinces that are most vulnerable to these diseases,” IRNA quoted Pak-Aein as saying.

Rotavirus vaccination program will target tropical, southern, and southeastern provinces, while pneumococcal vaccination will be extended to southern provinces as well, he added.

The nationwide implementation of the vaccination program will commence as soon as needed pneumococcal and rotavirus vaccines are provided, Pak-Aein further noted.

The vaccination program to combat pneumococcal and rotavirus kicked off in February after being missed from the immunization schedule for a decade.

The program was officially launched in the city of Bandar Khamir, southern Hormozgan province, IRNA reported.

On February 19, Pak-Aein said, “The vaccination program to combat pneumococcal has been added to the country's immunization program.”

It will be implemented in several phases, with the priority given to underdeveloped areas, he added.

Some 3.5 million doses of pneumococcal vaccine have been imported. In the first phase, the vaccines will be distributed in deprived areas of the southern provinces of the country, the official explained.

Pak-Aein went on to say that vaccination against rotavirus, started on February 20, aims to prevent the hospitalization of 10,000 children per year.

Knowledge-based companies and domestic manufacturers will soon produce both pneumococcal and rotavirus vaccines and present them to the market within the next few months, he added.

Vaccination against rotavirus, pneumococcal

The national vaccination plan aiming to combat rotavirus and pneumococcal, which most notably cause diarrhea and pneumonia respectively, was said to be added to the country's immunization program on January 21.

Rotavirus can cause severe watery diarrhea, vomiting, fever, and abdominal pain. Children who get rotavirus disease can become dehydrated and may need to be hospitalized.

Babies can get three doses of vaccine at the 2nd, 4th, and 6th months of life. The vaccine is administered by putting drops in the child's mouth, IRNA quoted Mohsen Zahraei, the head of the preventable diseases

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department of the Ministry of Health, as saying.

The pneumococcal vaccine helps protect against some types of bacterial infections that can cause serious illnesses like meningitis (an infection in the brain and spinal cord) sepsis (a life-threatening reaction to an infection) pneumonia (an infection in the lungs).

Zahraei further noted that pneumococcal vaccine can be injected when babies are 2, 4, and 12 months old.

“We hope to be able to develop these two vaccines soon. Once the vaccines pass the quality control trials, and obtain the Food and Drug Organization approval, we will be able to use the domestic products in the national vaccination program,” Zahraei said.

“Since the development of a vaccine is a complex process and takes a lot of time, the vaccines are imported now.

Annual vaccination worldwide prevents the death of two and a half million children, which shows the very high effectiveness of vaccines,” he added.

Fuente: TEHRAN TIMES. Disponible en https://acortar.link/mYlSlB

FDA delays decision on Moderna’s RSV vaccine

May 13. Moderna’s first attempt to expand its commercial activities beyond COVID-19 vaccines, its respiratory syncytial virus (RSV) shot, has suffered a delay in the US.

The company said the FDA would not be able to complete its review of the mRNA-1345 vaccine by the scheduled date of 12th May due to “administrative constraints”, causing nervousness among investors that led to a near-3% decline in its share price.

The fear for shareholders is that a delay could mean that mRNA-1345 won’t be ready to roll out in the US in time for the forthcoming RSV season, which starts in the autumn, although, Moderna said in a statement that the FDA has said it hopes to complete the review by the end of this month.

mRNA-1345 is playing catch-up in the emerging RSV vaccine category with GSK’s Arexvy and Pfizer’s Abrysvo, which are both conventional protein-based vaccines and launched in time for the 2023-24 RSV season.

GSK seems to have won the initial rollout contest, with sales of £1.2 billion ($1.5 billion) by the end of 2023, compared to $515 million for the Pfizer shot. First-quarter 2024 sales came in a £182 million and $145 million, respectively.

Moderna said the FDA has indicated that it doesn't have any issues related to vaccine safety, efficacy, or quality that would prevent the approval of mRNA-1345, adding that the vaccine remains on track to be reviewed at the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunisation Practices (ACIP) meeting 26th to 27th June. ACIP approval is also required for a commercial launch to go ahead.

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Moderna's application is based mainly on phase 3 data that showed it had 83.7% efficacy in preventing RSV lower respiratory tract disease (RSV-LRTD) in older adults aged 60 and over. It has been developed at breakneck speed, only starting clinical testing in 2021, and is a key part of Moderna's efforts to counteract a sharp reduction in COVID-19 vaccine sales.

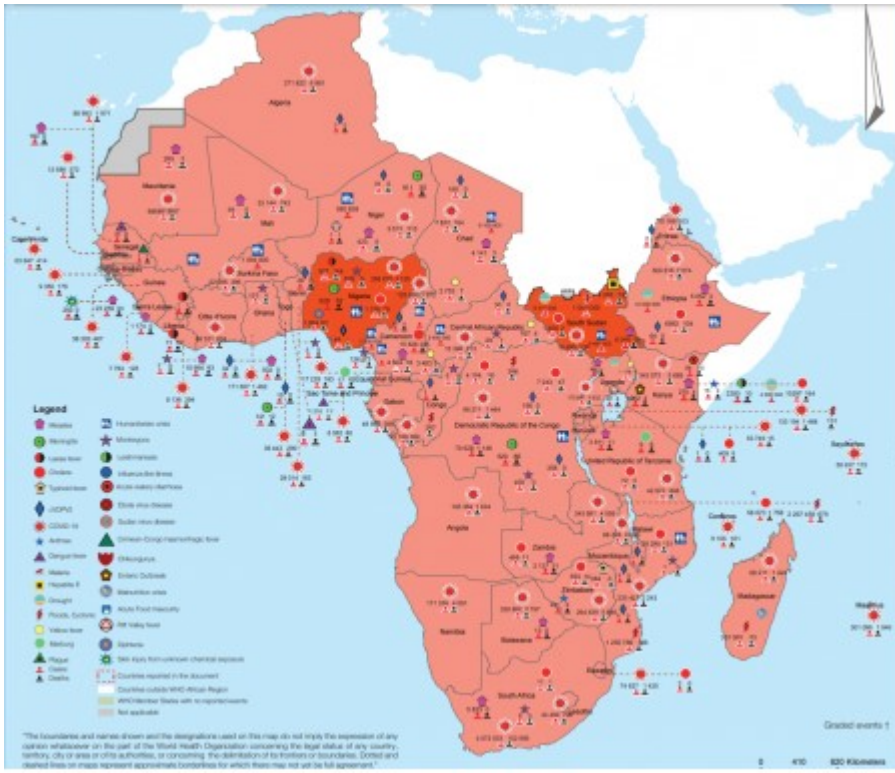
The delay may not be much of a setback, as RSV is a very big pie to share, given the massive size of the older adult population. There are millions of cases recorded annually, with around 360,000 hospitalisations and more than 24,000 deaths worldwide each year.

"Moderna is very grateful to the FDA for their continued efforts and diligence" said Stephen Hoge, the company's president. "We look forward to helping the agency complete the review of our application, and to the June ACIP meeting."

The company is also working on influenza, combined flu/COVID, flu/COVID/RSV, and cancer vaccines as it tries to diversify its business.

Fuente: pharmaphorum. Disponible en https://acortar.link/mbMCb4

100 Million African Children Receiving Measles and Rubella Vaccines



May 14. Gavi, the Vaccine Alliance, is collaborating with partners in Africa to reach up to 100 million children with measles and rubella vaccines in 2024.

As of May 14, 2024, FW Africa reported this expanded vaccination initiative encompasses Benin, Burkina Faso, Cambodia, Côte d'Ivoire, Eritrea, Ghana, Guinea, Guinea Bissau, Kyrgyzstan, Lao PDR, Liberia, Madagascar, Mali, Mauritania, Mozambique, Nepal, Rwanda, Senegal, Sierra Leone, Sudan, Tanzania, and Zambia are among the countries slated for rollout in 2024.

In 2024, preventive measles and rubella campaigns have been launched in countries such as Eritrea, Nepal, Tanzania, Burkina Faso, and Mali, with Sudan rolling out an MR introduction campaign.

Globally, routine immunization coverage for the first dose of Measles Containing Vaccine remains 2% below pre-pandemic levels.

During the current strategic period (2021-2025), Gavi has allocated $753 million to measles and rubella initiatives.

GAVI's ambitious objective comes with a concerning increase in measles outbreaks in 2024.

As of April 26, 2024, the U.S. CDC updated Travel Health Notice lists 51 countries reporting measles outbreaks.

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In the United States, 21 jurisdictions reported 132 measles cases this year, led by the state of Illinois with 67. Furthermore, 81% of these cases were unvaccinated or unknown. In 2023, 20 jurisdictions reported 58 measles cases in the U.S.

And 53% of these measles cases were hospitalized (70 of 132 cases) for isolation or management of measles complications. In April 2021, the journal Pediatrics published a study indicating that treatment costs were $47,479 per case during a measles outbreak.

As of May 14, 2024, measles vaccines are generally available at clinics and pharmacies in the U.S.

Fuente: precisión vaccinations. Disponible en https://acortar.link/pydiIU

WHO prequalifies new dengue vaccine

May 15. A new vaccine for dengue received prequalification from the World Health Organization (WHO) on 10 May 2024. TAK-003 is the second dengue vaccine to be prequalified by WHO. Developed by Takeda, it is a live-attenuated vaccine containing weakened versions of the four serotypes of the virus that cause dengue.

WHO recommends the use of TAK-003 in children aged 6–16 years in settings with high dengue burden and transmission intensity. The vaccine should be administered in a 2-dose schedule with a 3-month interval between doses.

“The prequalification of TAK-003 is an important step in the expansion of global access to dengue vaccines, as it is now eligible for procurement by UN agencies including UNICEF and PAHO,” said Dr Rogerio Gaspar, WHO Director for Regulation and Prequalification. “With only two dengue vaccines to date prequalified, we look forward to more vaccine developers coming forward for assessment, so that we can ensure vaccines reach all communities who need it.”

The WHO prequalification list also includes CYD-TDV vaccine against dengue developed by Sanofi Pasteur.

Dengue is a vector-borne disease transmitted by the bite of an infected mosquito. Severe dengue is a potentially lethal complication which can develop from dengue infections.

It is estimated that there are over 100-400 million cases of dengue worldwide each year and 3.8 billion people living in dengue endemic countries, most of which are in Asia, Africa, and the Americas. The largest number of dengue cases reported was in 2023 with the WHO Region of the Americas reporting 4.5 million cases and 2300 deaths. Dengue cases are likely to increase and expand geographically due to climate change and

World Health Organization

Fuente: World Health Organization. Disponible en https://acortar.link/wHEq9W

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20240501:20240510 as the publication date 57 records*

1.WO/2024/097739ENGINEERED VACCINIA CAPPING ENZYME VARIANTS
WO - 10.05.2024
Clasificación Internacional C12N 9/22 Nº de solicitud PCT/US2023/078328 Solicitante CODEXIS, INC. Inventor/a BAKHTINA, Marina, Mikhailovna
The present invention provides engineered vaccina capping enzyme and vaccinia virus capping enzyme polypeptides and compositions thereof, as well as polynucleotides encoding the engineered vaccinia capping enzyme and vaccinia virus capping enzyme subunit polypeptides. The disclosure also provides methods for use of the engineered vaccina capping enzymes and vaccinia virus capping enzyme subunits, as well as compositions thereof for diagnostic, molecular biological tools, and other purposes.

2.4358999MVA-BASIERTER IMPFSTOFF ZUR EXPRESSION EINES PRÄFUSIONSSTABILISIERTEN SARS-COV-2S-PROTEINS
EP - 01.05.2024
Clasificación Internacional A61K 39/12 Nº de solicitud 22737464 Solicitante CONSEJO SUPERIOR INVESTIGACION Inventor/a GARCÍA ARRIAZA JUAN FRANCISCO
The present invention is directed to a vaccine composition comprising an immunologically effective amount of a modified vaccinia virus Ankara (MVA) vector comprising at least one nucleic acid encoding the spike (S) protein, or a fragment of said S protein comprising at least one epitope, of at least one SARS-CoV-2 variant, wherein said S protein or fragment thereof, comprises at least the substitutions R682G, R683S, R685S, A942P, K986P and V987P, and wherein the MVA vector regulates the expression of the nucleic acid encoding the S protein, or the fragment thereof. The present invention also relates to combination of vaccines and uses thereof.

3.20240139332Modified Clostridial Neurotoxins as Vaccine and Conjugate Vaccine Platforms
US - 02.05.2024
Clasificación Internacional A61K 47/68 Nº de solicitud 17959272 Solicitante The Medical College of Wisconsin, Inc. Inventor/a Joseph T. Barbieri
Provided herein are engineered non-catalytic, non-toxic tetanus toxin variants and methods of using such engineered tetanus toxin variants as low dose, protective vaccines that are non-toxic and more potent than their respective chemically inactivated toxoids. In addition, provided herein are conjugate vaccine carriers comprising engineered tetanus toxin variants and methods of using such conjugate vaccines to elicit T-cell dependent immune memory responses which can target a broad spectrum of microbial pathogens as a single vaccine.

4.WO/2024/088138PLASMA MEMBRANE-PERMEABILIZED INACTIVATED ORAL VACCINE
WO - 02.05.2024

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Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2023/125248 Solicitante NINGBO MINGYI BIOTECHNOLOGY CO., LTD. Inventor/a JIANG, Yiwei
The present invention provides a plasma membrane-permeabilized inactivated oral vaccine and a preparation method therefor. The inactivated oral vaccine comprises a pathogen inactivated by permeabilization by a permeabilizer, a plasma membrane, and an integral membrane protein thereof, wherein the pathogen is selected from the group consisting of an enveloped virus, a bacterium, a fungus, an endoparasite, and a cancer cell, and the permeabilizer comprises a lipopeptide as a surfactant.

5.4358998IMPFSTOFFZUSAMMENSETZUNG MIT CODIERTEM ADJUVANS
EP - 01.05.2024
Clasificación Internacional A61K 39/00 Nº de solicitud 22735152 Solicitante NOUSCOM AG Inventor/a SCARSELLI ELISA
The present invention relates to a vaccine composition comprising (1) a first set of one or more vectors comprising a nucleic acid encoding one or more adjuvants, wherein the first set of one or more vectors are adenoviral vectors, and (2) an antigen or a combination of antigens or a nucleic acid encoding said antigen or combination of antigens or a second set of one or more vectors comprising said nucleic acid. The invention further relates to said vaccine composition for use in the treatment or prophylaxis of a disease. In addition, the invention relates to a vaccine composition or vaccine kit for inducing an immune response comprising (1) a first nucleic acid encoding one or more adjuvants or a first set of one or more vectors comprising said first nucleic acid and (2) an antigen or a combination of antigens or a second nucleic acid encoding said second antigen or combination of antigens or a second set of one or more vectors comprising said second nucleic acid, wherein (1) is administered to a patient at a first location and (2) is administered to the patient at a second location, wherein the first location is the same or within 20 cm of the second location and the lymphatic system of the first and second location drains to the same lymph nodes. The invention also relates to a vaccination regimen comprising a first administration step comprising administration of an antigen and an encoded adjuvant, and a second administration step comprising administration of an antigen and/or an encoded adjuvant.

6.WO/2024/097976RECOMBINANT RSV VACCINE: METHODS OF MAKING AND USING THE SAME
WO - 10.05.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2023/078661 Solicitante BLUE LAKE BIOTECHNOLOGY, INC. Inventor/a HE, Biao
Compositions and methods of inducing an immune response in a subject having RSV comprising administering a pharmaceutical composition comprising a prophylactic vaccine against RSV infection, wherein the vaccine comprises a live recombinant canine parainfluenza (CPI) vector backbone engineered to express a RSV F protein.

7.WO/2024/093554RECOMBINANT SUBUNIT VACCINE AGAINST RSV AND USE THEREOF
WO - 10.05.2024
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2023/119638 Solicitante BEIJING HEALTH GUARD BIOTECHNOLOGY, INC. Inventor/a JIANG, Dunquan
The present invention relates to the field of biomedicine, in particular to a recombinant subunit vaccine against respiratory syncytial virus (RSV) and a use thereof, and more in particular to a recombinant fusion protein containing the Head only (RHF) domain of an RSV envelope fusion protein F and a multimerization domain such as an immunoglobulin Fc fragment, an expression construct containing the recombinant fusion protein, a preparation method for the recombinant fusion protein, and an immunogenic composition containing the recombinant fusion protein, such as a vaccine.

8.20240139300mRNA VACCINE COMPOSITIONS AND THEIR USE
US - 02.05.2024

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Clasificación Internacional A61K 39/00 Nº de solicitud 18471733 Solicitante OSIVAX Inventor/a Alexandre LE VERT
The invention relates to immunogenic or vaccine compositions and their use in particular in the prevention or treatment of infectious or cancer disorders. More specifically, the immunogenic or vaccine compositions of the present invention comprises a ribonucleic acid (RNA) molecule comprising an open-reading frame encoding a fusion protein, wherein said fusion protein comprises or essentially consists of:

- (i) a first polypeptide domain comprising either
  - a. an antigen or a fragment thereof comprising at least one epitope of said antigen,
  - b. a peptide moiety comprising a single epitope of an antigen, or
  - c. a plurality of peptide moieties, wherein each peptide moiety comprises an epitope of an antigen and wherein said peptide moieties are fused together, optionally via peptide linker,
- said first polypeptide domain being fused to
- (ii) a second polypeptide domain comprising a C4bp-derived oligomerization domain and a positively charged tail.

9.WO/2024/095794ORAL-ADMINISTRATION-TYPE VACCINE COMPOSITION CONTAINING FIBROIN-CONTAINING NANOPARTICLES
WO - 10.05.2024
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/JP2023/037985 Solicitante NATIONAL AGRICULTURE AND FOOD RESEARCH ORGANIZATION Inventor/a SATO Mitsuru
Provided is an oral-administration-type vaccine composition containing an antigen and fibroin-containing nanoparticles.

10.20240141000HORN FLY VACCINE COMPOSITIONS AND METHODS OF MAKING SAME
US - 02.05.2024
Clasificación Internacional C07K 14/435 Nº de solicitud 18242627 Solicitante TNG Pharmaceuticals, Inc. Inventor/a Kent R. Van Kampen
Disclosed herein are fusion proteins comprising a truncated thrombostasin protein having at least 85% sequence homology to a thrombostasin protein, wherein the thrombostasin protein has a carboxy terminal deletion; and a fusion partner protein that is a non-thrombostasin protein. Further disclosed are vaccine compositions thrombostasin proteins having a comprising a carboxy terminal deletion, and methods for inhibiting a response to a thrombostasin protein in a host in need thereof, comprising the disclosed fusion proteins or vaccine compositions. Further disclosed are methods for the preparation of a fusion protein composition.

11.WO/2024/097817SELF-ADJUVANTING MULTI-PROTEIN COMPLEXES FOR MODULAR VACCINE PRODUCTION
WO - 10.05.2024
Clasificación Internacional A61K 39/002 Nº de solicitud PCT/US2023/078438 Solicitante DESIGN-ZYME LLC Inventor/a PETILLO, Peter
The present invention is broadly concerned with a vaccine composition comprising a central carrier, at least one linear carbohydrate molecule, and at least one immunogen molecule, wherein each of the at least one linear carbohydrate molecule and at least one immunogen molecule are each covalently bound to the carrier via respective covalent linkages. Vaccine compositions comprising multivalent carriers and related methods may find various therapeutic and prophylactic applications for inducing an immune

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response against, treating, or preventing a bacterial, viral, fungal, or protozoan infection, including, but are not limited to, coronaviruses, Lyme Disease, Chlamydia, and the related diseases thereof.

12.WO/2024/091853VESICULAR STOMATITIS VIRUS (VSV)-BASED VACCINE AGAINST SUDAN VIRUS
WO - 02.05.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2023/077444 Solicitante THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES Inventor/a MARZI, Andrea M.
A recombinant vesicular stomatitis virus (VSV) in which the VSV G gene is replaced with the glycoprotein (GP) gene of Sudan virus (SUDV) is described. The recombinant VSV, referred to as VSV-SUDV, can be used as a live attenuated vaccine for the treatment or prophylaxis of Sudan virus disease (SVD). VSV-SUDV replicates in inoculated subjects, which induces strong innate and adaptive immune responses. Efficacy studies in non-human primates demonstrated that a single intramuscular vaccination protected animals from a lethal challenge dose of SUDV even when vaccination occurred only seven days prior to challenge. In addition, pre-exposure to the VSV vector did not inhibit a robust response to the SUDV GP component of the vaccine.

13.WO/2024/089638NUCLEIC ACID BASED VACCINE
WO - 02.05.2024
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/IB2023/060807 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a PETSCH, Benjamin
The present invention is directed to nucleic acids suitable for use in treatment or prophylaxis of an infection with a coronavirus, such as a Coronavirus SARS-CoV-2 variant, or a disorder related to such an infection, such as COVID-19. The present invention is also directed to compositions, and vaccines. The compositions and vaccines comprise at least one of said nucleic acid sequences, and nucleic acid sequences in association with a lipid nanoparticle (LNP). The invention is also directed to first and second medical uses of the nucleic acids, the composition, the vaccine, and the kit, and to methods of treating or preventing a coronavirus infection, such as a Coronavirus infection from a SARS-CoV-2 variant.

14.WO/2024/089593NANOPARTICLES, VACCINE COMPOSITIONS, PROCEDURES, USES, AND METHODS OF ADMINISTRATION THEREOF
WO - 02.05.2024
Clasificación Internacional A61K 9/00 Nº de solicitud PCT/IB2023/060711 Solicitante CONSEJO NACIONAL DE INVESTIGACIONES CIENTÍFICAS Y TÉCNICAS (CONICET) Inventor/a DOCENA, Guillermo Horacio
The present disclosure is directed to adjuvant nanoparticles for vaccines comprising a molar TPP/PAH ratio of 0.01/0.6, a diameter from 80nm to 526nm, a diameter polydispersity from 0.04 to 0.25, and a surface Z potential from +70mV to -20mV. The charge and size of the nanoparticles will depend on the molar ratio, concentration, or quantity of TPP and PAH compounds, the initial pH of the procedure, and the medium in which the procedure is carried out. Additionally, vaccine compositions formulated with different immunogens are disclosed, in which the nanoparticles encapsulate the antigens, target them to immune sites of interest, and activate the immune system; and preparation methods thereof.

15.4361170ANTIKÖRPERINDUZIERENDES POLYPEPTID UND IMPFSTOFF
EP - 01.05.2024
Clasificación Internacional C07K 14/165 Nº de solicitud 22828540 Solicitante WATANABE YOSHIHIRO Inventor/a KAWANO MITSUHIRO
The invention provides an antibody-inducing polypeptide that is useful for treatment or prevention of SARS-CoV-2 infection in a subject and a vaccine that comprises such antibody-inducing polypeptide. The

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polypeptide is selected from the group of polypeptides (a) to (f) below and has antibody-inducing properties: (a) a polypeptide consisting of 7 or more continuous amino acids in a region of positions 336 to 361, 406 to 432, or 446 to 480 of SEQ ID NO: 1; (b) a polypeptide comprising an amino acid sequence having 80% or higher sequence identity to the amino acid sequence of any polypeptide as defined in (a); (c) a polypeptide comprising the polypeptide as defined in (a) or (b) as a partial sequence and comprising no region other than the partial sequence of SEQ ID NO: 1; (d) a polypeptide consisting of 10 or more continuous amino acids in a region of positions 1144 to 1161 or 1174 to 1202 of SEQ ID NO: 1; (e) a polypeptide comprising an amino acid sequence having 80% or higher sequence identity to the amino acid sequence of any polypeptide as defined in (d); and (f) a polypeptide comprising the polypeptide as defined in (d) or (e) as a partial sequence and comprising no region other than the partial sequence of SEQ ID NO: 1.

16.WO/2024/088176NUCLEIC ACID MOLECULE, FUSION PROTEIN AND MRNA VACCINE HAVING RECRUITMENT LIGAND FOR ENHANCING ANTIGEN-PRESENTING EFFECT
WO - 02.05.2024
Clasificación Internacional C12N 15/62 Nº de solicitud PCT/CN2023/125695 Solicitante WESTGENE BIOPHARMA CO., LTD Inventor/a SONG, Xiangrong
The present invention relates to the field of biomedicine, and mainly relates to a vaccine design method for enhancing an antigen-presenting effect, which is applied to structural sequence design and preparation of nucleic acids, proteins and polypeptide vaccines. According to the present invention, a target antigen and a ligand such as a polypeptide or a protein domain having an E3 ubiquitin ligase binding or recruitment function are jointly coded in a same nucleic acid sequence, such that fusion expression of an antigen protein and an E3 ubiquitin ligase ligand is implemented after a nucleic acid molecule enters cells, thereby promoting the degradation of the antigen protein by means of a proteasome approach, increasing the number and abundance of antigen peptides having antigen epitopes, and forming more peptide-MHC (p-MHC) complexes, and the complexes are presented on the surfaces of the cells, thereby enhancing subsequent immune response, and exerting an efficient tumor immunotherapy effect. The nucleic acid, the protein and the polypeptide vaccine provided by the present invention have an efficient antigen-presenting effect and strong immunogenicity, and have good clinical application prospects.

17.WO/2024/091794VACCINE COMPOSITION FOR STIMULATION OF BROAD-SPECTRUM MEMORY OF B CELL EXPANSION
WO - 02.05.2024
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/US2023/076431 Solicitante NANT HOLDINGS IP, LLP Inventor/a SOON-SHIONG, Patrick
Provided herein are vaccine compositions for use in the stimulation of broad-spectrum memory B cell expansion in a patient that has been exposed or is at risk of exposure to an infectious agent of unknown etiology. The composition comprises IL-15 or an IL-15 analog and at least two toll-like receptor (TLR) agonists, wherein the agonists are targeted to different members of the TLR family. Further contemplated herein are compositions and methods of stimulating germinal B cell expansion in a patient, the composition comprising IL-15 or an IL-15 analog and a nucleic acid, wherein the nucleic acid encodes at least one immunogenic peptide, and wherein the composition is administered either subcutaneously or directly into a lymph node.

18.20240139312UNIVERSAL ADJUVANT FOR NASAL, ORAL, AND INTRAMUSCULAR DELIVERY OF VACCINES
US - 02.05.2024

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Clasificación Internacional A61K 39/39 Nº de solicitud 18196214 Solicitante Design-Zyme LLC Inventor/a Peter Albert Petillo
Vaccine compositions comprising at least one modified immunogen via in vitro glycosylation methods that provide a rational approach for generating glycosylated versions of immunogens via the reducing end of a linear carbohydrate, the reducing end containing an N-acyl-2-amino moiety. Vaccine compositions comprising a plurality of heterologous immunogens associated with a multivalent carrier, wherein at least one immnunogen is glycosylated. Vaccine compositions comprising multivalent carriers and related methods using the vaccine compositions in various therapeutic and prophylactic applications for inducing an immune response against, treating, or preventing a bacterial, viral, fungal, or protozoan infection. Pathogens for which this approach may be useful include, but are not limited to, influenza viruses, rhinoviruses, human immunodeficiency viruses (HIV), respiratory syncytial virus (RSV), coronaviruses, *Babesia, Borrelia, Neisseria*, and *Chlamydia*, and the related diseases thereof

19.WO/2024/097396VISCO-ELASTIC SOLID FORMULATION FOR ORAL DELIVERY OF A BIOLOGICALLY ACTIVE AGENT
WO - 10.05.2024
Clasificación Internacional A61K 39/145 Nº de solicitud PCT/US2023/036771 Solicitante US BIOLOGIC, INC. Inventor/a OOSTERWIJK, Jolieke, Gerdy Van
The presently disclosed subject matter relates a single dose formulation for oral delivery of biologically active agent. In one embodiment, single dose formulation for oral delivery of biologically active agent includes a vaccine antigen expression system and a visco-elastic solid carrier configured to microencapsulate the vaccine antigen expression system. The vaccine antigen expression system is a bacterial antigen expression vehicle expressing one or more recombinant viral protein antigens, wherein the bacterial antigen expression vehicle is Bacillus subtilis.

20.WO/2024/091589MALARIA IMMUNOGEN AND METHODS FOR USING SAME
WO - 02.05.2024
Clasificación Internacional C07K 14/445 Nº de solicitud PCT/US2023/035978 Solicitante UNM RAINFOREST INNOVATIONS Inventor/a CHACKERIAN, Bryce C.
An immunogen generally includes an immunogenic carrier that includes a virus-like particle (VLP) and an antigenic *Anopheles* spp. TRIO peptide that includes amino acids VDDLMAKFN (SEQ ID NO:1) or AANLRDKFN (SEQ ID NO:5) linked to the immunogenic carrier. The immunogen can be formulated into a composition such as vaccine. The composition or vaccine may be used to treat a subject having, or at risk of having malaria. The composition or vaccine may be used to treat a subject having *Plasmodium falciparum* blood stage parasitemia.

21.WO/2024/093813PHARMACEUTICAL USE OF NUCLEOSIDE COMPOUND
WO - 10.05.2024
Clasificación Internacional A61K 31/7068 Nº de solicitud PCT/CN2023/127028 Solicitante HENAN GENUINE BIOTECH CO., LTD. Inventor/a WANG, Zhaoyang
Provided is pharmaceutical use of a nucleoside compound, specifically use of a compound represented by formula (I) or a pharmaceutically acceptable salt thereof in the preparation of a drug for preventing or treating an infectious disease of orthopoxvirus. The compound represented by formula (I) has a significant inhibitory effect on a vaccinia virus, a monkeypox virus, a cowpox virus, and a smallpox virus.

22.20240142451METHODS FOR CHARACTERIZING THE IMMUNE RESPONSE OF A SUBJECT TO A DENGUE VIRUS COMPOSITION
US - 02.05.2024
Clasificación Internacional G01N 33/569 Nº de solicitud 18284987 Solicitante TAKEDA VACCINES, INC. Inventor/a Isamu TSUJI

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The present invention relates to a method for characterizing the immune response of a subject to a tetravalent dengue virus composition by performing the method for determining affinity, binding kinetics and/or concentration of an antibody or of an antibody mixture and at least one other method. In a further embodiment, the present invention relates to a method for characterizing the immune response of a subject to a virus-containing vaccine composition by performing a combination of assays. In a further embodiment, the present invention relates to a method for predicting protective efficacy of a dengue vaccine candidate. In another embodiment the present invention relates to a method for preparing a vaccine formulation.

23.WO/2024/094899IDENTIFICATION OF CELL SURFACE ANTIGENS WHICH INDUCE T-CELL RESPONSES AND THEIR USES
WO - 10.05.2024
Clasificación Internacional G16B 20/30 Nº de solicitud PCT/EP2023/080888 Solicitante VERDI SOLUTIONS GMBH Inventor/a LISZIEWICZ, Julianna
The present invention relates to a computer-implemented method for identifying, for a subject, at least one antigen which is expected to induce a T-cell response to attack unhealthy cells in the subject. The invention further relates to using said antigens for designing personalized vaccines and to the use of such personalized vaccine and personalized vaccine compositions in kits and methods for the treatment of disease.

24.20240139308TRANSDERMAL VACCINE
US - 02.05.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18272114 Solicitante Oxford University Innovation Limited Inventor/a Johanna HETTINGA
The invention describes transdermal vaccines which contain ultrasound responsive particles comprising a polypeptide shell. The surface of the particle has one or more indentations which are generally able to entrap a gas bubble. The particles are capable of generating inertial cavitation on exposure to ultrasound. The particles can be delivered transdermally, and can comprise antigen protein and/or adjuvant within the particle structure. The particles are therefore useful in methods of vaccination using transdermal delivery routes.

25.WO/2024/092209VITAMIN-BASED LIPIDS AND LIPID NANOPARTICLES COMPRISING THE SAME
WO - 02.05.2024
Clasificación Internacional C07D 311/04 Nº de solicitud PCT/US2023/078044 Solicitante ADVANCED RNA VACCINE (ARV) TECHNOLOGIES, INC. Inventor/a XU, Jiangsheng
Described are compounds, compositions, and methods for delivery of therapeutic, diagnostic, or prophylactic agents (for example, a nucleic acid).

26.WO/2024/096837FISH VACCINATION MACHINE
WO - 10.05.2024
Clasificación Internacional A01K 61/00 Nº de solicitud PCT/TR2023/051157 Solicitante KANYONSAN TARIM VE HAYVANCILIK SANAYİ TİCARET LİMİTED ŞİRKETİ Inventor/a ÖZKURT, Ahmet
The invention is a fish vaccination machine (100) developed to perform the vaccination and counting of live fish in cultured fisheries (Sea Bass, Bream, Trout, etc.), wherein the said machine comprises a conveyor belt (102) positioned in the front part, which acts as a conveyor; a drum (103) connected to the body profile (101) to adjust the eccentricity of the conveyor belt (102); an injector motor (109) that moves the injector; a pinion (110) positioned on the injector motor (109) that holds the injector to be used for vaccinating the fish; a toothed rack (111) positioned between the pinion (110) and the injector motor (109); a vaccine holding apparatus (112) that holds the injector to be used for vaccinating the fish, positioned at the top, where the vaccine to be administered is placed; an injector tube (116), where the

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vaccine inserted into the vaccine holding apparatus (112) is connected to the serum hose; a scale cleaning apparatus (115) for cleaning the remaining flakes attached to the injector head; a color sensor (125) for distinguishing black and white color; an omron sensor (126) for counting and adjusting the position of the fish; a motor driver (135) positioned in the junction box (122), which commands the rotation of the belt motor (105) and the injector motor (109); a display screen (137) for monitoring the implemented actions.

27.20240142436SYSTEM AND METHOD FOR DISCOVERING VALIDATING AND PERSONALIZING TRANSPOSABLE ELEMENT CANCER VACCINES
US - 02.05.2024
Clasificación Internacional G01N 33/50 Nº de solicitud 17769277 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a Jacob PFEIL
Candidate cancer antigens are identified using transposable elements. Differential expression levels are determined for proteins using baseline expression levels (using measurements of healthy tissue) and tumor expression levels (using measurements of tumor tissue). Protein(s) having a differential expression level greater than a threshold are selected. Cancer vaccine(s) are generated for the selected cancer antigens (s). Particular cancer vaccine(s) are selected for a patient based on differential expression levels for proteins using baseline expression levels of the patient and tumor expression levels of the patient. A vaccine for protein(s) having a differential expression level greater than a threshold can be selected. A microarray can be used for the measurements of the patient. A first array of probes can hybridize to RNA from transposable elements. A second array of probes can hybridize to RNA of different MHC haplotypes. A third array of probes can hybridize to RNA of different APOBEC genotypes.

28.WO/2024/097257COMBINATION PANEL CELL-FREE DNA MONITORING
WO - 10.05.2024
Clasificación Internacional B01D 15/38 Nº de solicitud PCT/US2023/036536 Solicitante GRITSTONE BIO, INC. Inventor/a SCHENK, Desiree
Methods and compositions for monitoring mutation burden, cancer status, vaccine efficacy using cell-free DNA sequencing following enrichment with combination probe panels are disclosed.

29.4359000VIRUSABSCHWÄCHUNG
EP - 01.05.2024
Clasificación Internacional A61K 39/17 Nº de solicitud 22736335 Solicitante UNIV OF LANCASTER Inventor/a MUNIR MUHAMMAD
The present disclosure relates to paramyxoviruses, in particular attenuated avian avulaviruses (para, ortho and meta), mutated and genetically modified forms, as well as a vaccine formulation comprising an attenuated avian avulavirus and uses/methods of use thereof.

30.WO/2024/092030SELF-ASSEMBLING NANOPARTICLES
WO - 02.05.2024
Clasificación Internacional A61K 47/69 Nº de solicitud PCT/US2023/077767 Solicitante BARINTHUS THERAPEUTICS NORTH AMERICA, INC. Inventor/a LYNN, Geoffrey Martin
The present disclosure relates to a vaccine comprising at least one peptide antigen conjugate having the formula selected from PEG-[E1]-A-[E2]-[U]-H and H-[U]-[E1]-A-[E2]-PEG, wherein E1 is an N terminal extension, E2 is a C terminal extension, A is peptide antigen, H is hydrobhobic block, wherein one or more drug molecules (D) are optionally attached to each H directly or via a suitable linker X1; U is a linker,[ ] denotes the group is optional and - denotes that the two adjacent groups are directly attached to one another by a covalent bond or indirectly to one another via a suitable linker X. The vaccine is useful in treating or preventing a cancer, an autoimmune disease, an allergy, or an infectious disease.

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31.20240140994PREFUSION-STABILIZED HMPV F PROTEINS
US - 02.05.2024
Clasificación Internacional C07K 14/08 Nº de solicitud 18411284 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a Jason MCLELLAN
Provided herein are engineered hMPV F proteins. In some aspects, the engineered F proteins exhibit enhanced conformational stability and/or antigenicity. Methods are also provided for use of the engineered F proteins as diagnostics, in screening platforms, and/or in vaccine compositions.

32.WO/2024/094189USE OF ALOXISTATIN IN PREPARING ANTI-VIRAL INFECTION MEDICAMENT
WO - 10.05.2024
Clasificación Internacional A61K 31/336 Nº de solicitud PCT/CN2023/129709 Solicitante SHANGHAITECH UNIVERSITY Inventor/a YANG, Haitao
Provided is use of aloxistatin in preparing an anti-viral infection medicament, in particular, use of aloxistatin in preparing a medicament for treating a related disease caused by orthopoxvirus infection or orthopoxviruses. Aloxistatin can significantly inhibit the activity of poxvirus cysteine protease I7L. It has a potential capability to treat related diseases caused by orthopoxviruses such as monkeypox virus, smallpox virus, or vaccinia virus, and provides an effective drug use strategy for treating major infectious diseases caused by orthopoxviruses such as monkeypox virus.

33.WO/2024/094850TGF-BETA-1 VACCINE
WO - 10.05.2024
Clasificación Internacional A61K 38/08 Nº de solicitud PCT/EP2023/080669 Solicitante IO BIOTECH APS Inventor/a ANDERSEN, Mads Hald
The present invention relates to novel polypeptides, which are derived from transforming growth factor beta 1 (TGFβ1; TGFb-1) as well as polynucleotides encoding such polypeptides and compositions comprising such peptides. The present invention is further concerned with ways to increase the selectivity of the immune response to TGFb-1. The invention also concerns uses, and methods of using, said polypeptides, polynucleotides, and compositions.

34.WO/2024/089001VACCINE AGAINST *KLEBSIELLA PNEUMONIAE*
WO - 02.05.2024
Clasificación Internacional A61K 39/108 Nº de solicitud PCT/EP2023/079562 Solicitante IDORSIA PHARMACEUTICALS LTD Inventor/a BROECKER, Felix
The present invention relates to novel oligosaccharide-carrier protein conjugates of Formula (I), and their use as pharmaceuticals, in particular as vaccines. The invention also concerns related aspects including oligosaccharide intermediates of Formulae (II) and (III), as well as processes for the preparation of the conjugates. Furthermore, the invention relates to pharmaceutical compositions comprising the oligosaccharide-carrier protein conjugates, as well as the use of the oligosaccharide-carrier protein conjugates of Formula (IV) in biological assays.

35.WO/2024/089008HETEROCYCLIC COMPOUNDS CAPABLE OF ACTIVATING STING
WO - 02.05.2024
Clasificación Internacional C07D 401/14 Nº de solicitud PCT/EP2023/079582 Solicitante BOEHRINGER INGELHEIM INTERNATIONAL GMBH Inventor/a GRAHAM, Keith Andrew Newton
The present invention relates to compounds of formula (I) which are capable of activating STING (Stimulator of Interferon Genes). The present invention further relates to pharmaceutical compositions comprising at least a compound of formula (I), as well as the use of these compounds or the pharmaceutical compositions as a medicament, e.g., for treating canine or feline cancer, or as vaccine adjuvants.

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36.WO/2024/089006HETEROCYCLIC COMPOUNDS CAPABLE OF ACTIVATING STING
WO - 02.05.2024
Clasificación Internacional C07D 401/14 Nº de solicitud PCT/EP2023/079580 Solicitante BOEHRINGER INGELHEIM INTERNATIONAL GMBH Inventor/a GRAHAM, Keith Andrew Newton
The present invention relates to compounds of formula (I) which are capable of activating STING (Stimulator of Interferon Genes). The present invention further relates to pharmaceutical compositions comprising at least a compound of formula (I), as well as the use of these compounds or the pharmaceutical compositions as a medicament, e.g., for treating canine or feline cancer, or as vaccine adjuvants.

37.20240139306METHODS AND COMPOSITIONS FOR DETECTING AND PRODUCING PORCINE MORBILLIVIRUS AND VACCINES THEREOF
US - 02.05.2024
Clasificación Internacional A61K 39/155 Nº de solicitud 18279314 Solicitante Iowa State University Research Foundation, Inc. Inventor/a Ganwu Li
Disclosed herein are methods for detecting and producing PoMV. Further, disclosed herein are immunogenic and/or vaccine compositions and methods for treating or preventing PoMV. The compositions and methods include immunogenic portions of PoMV including entry proteins. In at least particular cases, a mutated version of a portion of the PoMV is utilized, such as a deglycosylated, or amino acid substituted mutant of the spike protein.

38.WO/2024/093036A METHOD TO INCREASE THE LOADING OF SPECIFIC NUCLEIC ACID MOLECULES IN ENGINEERED CELL EXOSOMES AND ITS APPLICATION
WO - 10.05.2024
Clasificación Internacional C12N 15/85 Nº de solicitud PCT/CN2023/074243 Solicitante NATIONAL VACCINE & SERUM INSTITUTE Inventor/a AN, Wenlin
A method that can improve the loading efficiency of specific nucleic acid molecules in cellular exosomes and its application, which is based on the autonomous docking of multiple tandems of C/D box binding protein L7Ae or its variants to RNA nucleic acid molecules containing C/D box sequences. The purpose-designed loading of RNA nucleic acid molecules into exosomes can be achieved by docking C/D box binding protein L7Ae or/and its variants with fusion proteins (i.e., scaffolding proteins) constructed from exosomal membrane proteins such as CD47.

39.4359084NEUER MRNA-IMPFSTOFF FÜR AUTOIMMUNITÄT
EP - 01.05.2024
Clasificación Internacional A61P 37/02 Nº de solicitud 22829498 Solicitante UNIV COLUMBIA Inventor/a CREUSOT REMI J
This disclosure describes a nucleic acid construct that contains sequences for an Endotope construct, a STAT1c, and miR142 target sites. In one example, disclosed is composition comprising an Endotope construct and a STAT1 construct including a nucleic acid sequence encoding a constitutively active STAT1 (e.g. STAT1c), wherein the Endotope and the STAT1 constructs each include miR142 target sites. In alternative examples, disclosed is a single construct that includes the Endotope construct and STAT1 construct along with miR142 target sites. The nucleic acid constructs can be packaged into polycationic molecules or liposome to create nanoparticles for efficient cell transfection.

40.20240139303ENHANCING IMMUNOGENICITY OF STREPTOCOCCUS PNEUMONIAE POLYSACCHARIDE-PROTEIN CONJUGATES
US - 02.05.2024
Clasificación Internacional A61K 39/09 Nº de solicitud 18339723 Solicitante Merck Sharp & Dohme LLC Inventor/a Julie M. Skinner

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The present invention provides immunogenic compositions having one or more polysaccharide-protein conjugates in which one or more polysaccharides from *Streptococcus pneumoniae* bacterial capsules are conjugated to a carrier protein in an aprotic solvent such as dimethylsulfoxide (DMSO). The present invention also provides methods for providing an enhanced immune response to a pneumococcal polysaccharide protein conjugate vaccine comprising administering to a human subject an immunogenic composition comprising polysaccharide-protein conjugates prepared in DMSO conditions.

41.20240140996METHOD FOR INCREASING ETEC CS6 ANTIGEN PRESENTATION ON CELL SURFACE AND PRODUCTS OBTAINABLE THEREOF
US - 02.05.2024
Clasificación Internacional C07K 14/245 Nº de solicitud 18509081 Solicitante Scandinavian Biopharma Holding AB Inventor/a Nils Carlin
A method for increase the presentation of ETEC CS6 antigen on a cell surface, comprising the step of contacting cells expressing said antigen with an aqueous solution comprising 0.6-2.2 percent phenol by weight, such that the presentation of said antigen is increased by at least 100%. A method for the manufacture of a killed whole cell vaccine for immunization against CS6-expressing ETEC. Cells and vaccines obtainable by the above methods.

42.WO/2024/097448RECOMBINANT POXVIRUSES FOR CANCER IMMUNOTHERAPY
WO - 10.05.2024
Clasificación Internacional A61K 38/17 Nº de solicitud PCT/US2023/071367 Solicitante MEMORIAL SLOAN-KETTERING CANCER CENTER Inventor/a DENG, Liang
Disclosed herein are methods and compositions related to the treatment, prevention, and/or amelioration of cancer in a subject in need thereof. In particular, the present technology relates to the use of a recombinant modified vaccinia Ankara (MV A) virus (MVAAE3LAE5R-hFlt3L-hOX40LAWR199-hIL-12) alone or in combination with immune checkpoint blockade inhibitors as an immunotherapeutic composition, in methods for treating a solid tumor wherein the solid tumor is resistant to immune checkpoint blockade inhibitor treatment, methods of preventing cancer recurrence for a period of time in a subject in need thereof, methods for treating a tumor in a subject in need thereof wherein the subject has a deficient adaptive immune system response, and methods for altering the tumor immune microenvironment (TIME) in a tumor in a subject in need thereof.

43.20240140993STABILIZED CORONAVIRUS SPIKE (S) PROTEIN IMMUNOGENS AND RELATED VACCINES
US - 02.05.2024
Clasificación Internacional C07K 14/005 Nº de solicitud 18503260 Solicitante The Scripps Research Institute Inventor/a Linling He
The present invention provides redesigned soluble coronavirus S protein derived immunogens that are stabilized via specific modifications in the wildtype soluble S sequences. Also provided in the invention are nanoparticle vaccines that contain the redesigned soluble S immunogens displayed on self-assembling nanoparticles. Polynucleotide sequences encoding the redesigned immunogens and the nanoparticle vaccines are also provided in the invention. The invention further provides methods of using the vaccine compositions in various therapeutic applications, e.g., for preventing or treating coronaviral infections.

44.WO/2024/089248RECOMBINANT ACTIVATION-ASSOCIATED SECRETED PROTEIN
WO - 02.05.2024
Clasificación Internacional C07K 14/435 Nº de solicitud PCT/EP2023/080078 Solicitante UNIVERSITEIT GENT Inventor/a GELDHOF, Peter

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The present invention relates to a recombinant activation-associated secreted protein (ASP) or fragment thereof, said ASP or fragment comprising an N-glycan comprising a core α1,3-fucose and/or a core α1,6-fucose (Fuc). The invention further relates to a pharmaceutical composition comprising such a recombinant ASP or fragment thereof. Additionally, the invention relates to the recombinant ASP or fragment thereof for use as a human or veterinary medicine, in particular as a vaccine, more in particular for use against parasitic nematode infections.

45.WO/2024/095174PROGNOSTIC BIOMARKERS FOR CANCER RELAPSE VACCINATION AND THE USE THEREOF
WO - 10.05.2024
Clasificación Internacional G01N 33/569 Nº de solicitud PCT/IB2023/061000 Solicitante MENDUS B.V. Inventor/a ROVERS, Jeroen
Disclosed provides a method of treating measure residue disease (MRD) in a subject with cancer using an allogeneic leukemia-derived cell as a vaccine based on the information provided by prognostic biomarkers comprising dendritic cells including cDC1 cDC2, and/or pDC; CD8+ T cells including CD8+CD45RA+ cells, CD8+ CD45RA- CCR7+ CM T cells, and/or CD8 RO+ T cells; B cells; NK cells including CD56++ NK cells and/or CD56+ NK cells; CD4 CD161+ T cells; CD14+CD16- non-inflammatory monocytes, or any combination thereof.

46.20240139311RECOMBINANT VSV-SARS-COV-2 VACCINE
US - 02.05.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18280147 Solicitante Sumagen Canada Inc. Inventor/a Chil-Yong KANG
A recombinant vesicular stomatitis vims (rVSV) carrying one or more genes that encode for the spike protein of SARS-CoV-2 or for both the S protein and the envelope protein of the SARS-CoV-2. Vaccines, regimens and kits having the rVSV are used for the prevention of infections caused by SARS-CoV-2.

47.WO/2024/091909LASSA VIRUS VACCINE AND USES THEREOF
WO - 02.05.2024
Clasificación Internacional A61K 9/00 Nº de solicitud PCT/US2023/077593 Solicitante INOVIO PHARMACEUTICALS, INC. Inventor/a CASHMAN, Kathleen A.
Described are methods of inducing a protective immune response against Lassa virus comprising administering a prophylactically effective amount of a nucleic acid molecule encoding a Lassa virus glycoprotein precursor (LASV GPC) to a subject in need thereof.

48.20240139307INTERFERON-PRODUCING UNIVERSAL SARBECOVIRUS VACCINES, AND USES THEREOF
US - 02.05.2024
Clasificación Internacional A61K 39/215 Nº de solicitud 18165286 Solicitante CENTRE FOR VIROLOGY, VACCINOLOGY AND THERAPEUTICS LIMITED Inventor/a Kin Hang KOK
The present invention relates to universal sarbecovirus vaccines that specifically express an interferon. This live universal sarbecovirus vaccine elicits mucosal immunity and heterotypic immunity against various sarbecoviruses, including SARS-CoV-1, SARS-CoV-2, and its variants. Interferon directly encoded from the genome of the live universal sarbecovirus overrides the virus-induced “delayed type-I interferon”, resulting in enhancement of mucosal T cell responses. The present invention further relates to uses of the vaccines for the preparation of pharmaceutical compositions, methods of treating or preventing viral infections, and kits comprising the vaccines.

49.WO/2024/094050INTERFERON-PRODUCING UNIVERSAL SARBECOVIRUS VACCINES, AND USES THEREOF

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WO - 10.05.2024
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/CN2023/129016 Solicitante CENTRE FOR VIROLOGY, VACCINOLOGY AND THERAPEUTICS LIMITED Inventor/a KOK, Kin Hang
The present invention relates to universal sarbecovirus vaccines that specifically express an interferon. This live universal sarbecovirus vaccine elicits mucosal immunity and heterotypic immunity against various sarbecoviruses, including SARS-CoV-1, SARS-CoV-2, and its variants. Interferon directly encoded from the genome of the live universal sarbecovirus overrides the virus-induced "delayed type-I interferon", resulting in enhancement of mucosal T cell responses. The present invention further relates to uses of the vaccines for the preparation of pharmaceutical compositions, methods of treating or preventing viral infections, and kits comprising the vaccines.

50.4358974VERFAHREN ZUR PROPHYLAXE UND ABSCHWÄCHUNG VON COVID-19 UND ANDEREN ENTZÜNDLICHEN MIKROBIELLEN AKUTEN ATEMWEGSERKRANKUNGEN DURCH MODULATION ANGEBORENER UND ADAPTIVER IMMUNITÄT MIT POLY-ICLC
EP - 01.05.2024
Clasificación Internacional A61K 31/716 Nº de solicitud 22828911 Solicitante ONCOVIR INC Inventor/a SALAZAR ANDRES M
The containment of accidental or intentional epidemic disease outbreaks of pathogens to which our populations have limited or no immunity has thus become one of the principal public health challenges of our time. Methods for clinical administration of pharmaceutical compounds for prevention and attenuation of the inflammatory response to microbial diseases, particularly to the use of double stranded ribonucleic acids (dsRNA). Polyriboinosinic- polyribocytidylic acid stabilized with polylysine and carboxymethylcellulose (Poly-ICLC) converts a virus into the equivalent of an attenuated live-microbe vaccine specific to that microbe, so that Poly-ICLC significantly diminishes infectivity if administered appropriately following infection.

51.4361262POLYPEPTIDEPITOPE VON S. AUREUS UND ENTSPRECHENDE MONOKLONALE ANTIKÖRPER ZUR BEHANDLUNG VON INFEKTIONEN UND IMMUNDIAGNOSE
EP - 01.05.2024
Clasificación Internacional C12N 9/88 Nº de solicitud 24157575 Solicitante KLIMKA ALEXANDER Inventor/a KLIMKA ALEXANDER
The present invention relates to pharmaceutical preparations for the treatment or the prevention of a Staphylococcal infection. They contain at least one polypeptide epitope, wherein said at least one polypeptide epitope induces protective antibodies in a patient in need thereof. The polypeptide epitopes according to the present invention can preferably be used for the preparation of a vaccine against a Staphylococcal infection, such as Staphylococcus aureus, including Staphylococcus aureus (MRSA). The present invention further relates to monoclonal antibodies capable of recognizing and binding to a polypeptide epitope according to the present invention, and the invention also relates to the use of the monoclonal antibodies for diagnosis and the prevention or therapy of Staphylococcal infection, including MRSA.

52.WO/2024/093042ANTI-BSA RABBIT MONOCLONAL ANTIBODY AND USE THEREOF
WO - 10.05.2024
Clasificación Internacional C07K 16/18 Nº de solicitud PCT/CN2023/075810 Solicitante BIOINTRON BIOLOGICAL INC. Inventor/a DING, Hui
Provided are an anti-BSA rabbit monoclonal antibody and use thereof, which belong to the technical field of antibodies. The anti-BSA rabbit monoclonal antibody or an antigen-binding portion thereof specifically binds to BSA. The monoclonal antibody or the antigen-binding portion thereof comprises a heavy-chain variable region VH and a light-chain variable region VL. The heavy-chain variable region comprises

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heavy-chain CDR-H1, heavy-chain CDR-H2 and heavy-chain CDR-H3. The light-chain variable region comprises light-chain CDR-L1, light-chain CDR-L2 and light-chain CDR-L3. The antibody can be used for detecting bovine serum albumin (BSA) in foods such as milk, and detecting and removing a trace amount of residual BSA in a cell culture supernatant, a tissue engineered medical product and a vaccine. The rabbit monoclonal antibody targeting the BSA is acquired by means of a phage display technology. The antibody can specifically recognize the BSA with high affinity.

53.20240139302PROPIONIBACTERIUM ACNES PROPHYLACTIC AND THERAPEUTIC IMMUNE TREATMENT
US - 02.05.2024
Clasificación Internacional A61K 39/05 Nº de solicitud 17801099 Solicitante Origimm Biotechnology GmbH Inventor/a Sanja Selak
The present invention discloses a vaccine comprising one or more of Dermatan sulfate-binding adhesin 1 of *P. acnes* (DsA1 polypeptide), Dermatan sulfate-binding adhesin 2 of *P. acnes* (DsA2 polypeptide), and putative iron-transport protein (PITP) polypeptide of *P. acnes*, and/or a fragment and/or derivative of DsA1 and/or DsA2 and/or PITP, wherein the DsA1 polypeptide and the DsA2 polypeptide comprise from N- to C-terminus an N-terminal swapping region (“NSR”), a first conserved sub-domain (“CSD1”), a first swapping region (“SR1”), a second conserved sub-domain (“CSD2”), a second swapping region (“SR2”), a third conserved sub-domain (“CSD3”), a Pro-Thr repeat containing region (“PT repeat region”), and a C-terminal region (“CTR”), and wherein the PITP polypeptide comprises from N- to C-terminus an extended neocarzinostatin family domain (“ENFD”), a first swapping region (“SR1”), a heme-binding domain (“HbD”), a second swapping region (“SR2”) including the C-terminal LPXTG motif, and a hydrophobic C-terminal region (“hLAR”).

54.WO/2024/096886A METHOD OF PREVENTING AND TREATING DISEASE WITH TRANSFORMED MICROBES
WO - 10.05.2024
Clasificación Internacional A61K 35/741 Nº de solicitud PCT/US2022/049050 Solicitante EKEMA, George, Mbella Inventor/a EKEMA, George, Mbella
The covid-19 coronavirus has killed more than 5,129,829 people, globally, out of about 255,098,687 infected. About 10 million persons died from cancer in 2020, with 19.3 new cases diagnosed. About 409,000 persons died of malaria in 2019. And none of these diseases made the WHO's list of top 5 deadly diseases of 2019. Modern medicine has made tremendous progress in the prevention and treatment of disease, but the crashing of the covid-19 coronavirus and the extremely high burden of the top deadly diseases point to the urgency of radical and totally disrupting inventions in medicine. Indeed, to effectively overcome the current burden of deadly diseases we need an agile platform with exponentially better efficacy and predictability. The world is in dire need of a new medicine platform that totally and radically disrupts the current healthcare systems and the traditional ways of preventing and treating disease. The present invention does that. The present invention uses transformed microbes, targeted to one or more mucosal surface, to prevent and treat just about any disease of importance. The current means of disease prevention relies on vaccines. As we have seen from countless failures and booster shots, vaccines have extreme limitations and increasingly fewer following. Firstly, vaccine development is unpredictable, lengthy and costly. An important lesson of the covid-19 pandemic is that waiting for several months or years to develop a vaccine, while a disease ravages the population, is unacceptable. Also, protection that is dependent on a vaccine and frequent booster shots can only find a market in despair. We have also seen complete failure of vaccines in a lot of important diseases such as HIV and cancers. The current invention presents a method of preventing disease using transformed microbes. It is more effective than vaccines because it is delivering significantly more antigens, than vaccines, in their native

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conformation, directly to antigen presenting cells of the immune system. It takes advantage of the natural design of the immune system, to send the messengers that the immune system pays the closest attention to (microbes), to deliver a clear and detailed message (relatively large amounts of antigens in their native conformation) to the proper receiving cells of the immune system (antigen presenting cells). This method not only prevents disease, it cures disease. The current means of treating diseases relies heavily on medications and surgical intervention. The costs and adverse effects of drugs and the primitivity of surgical intervention are self-evident limitations of "modern medicine". The current invention presents a method of treating disease using transformed microbes. Pathogen peptides, cancer neoantigens, and other therapeutic targets are transformed in microbes in such a manner that the microbes express the gene products in a manner as to target a specific therapeutic pathway. For example, the genes encoding all lung cancer neoantigens are transformed into a microbe, as chimeric proteins with surface antigens of an endemic pathogen for which the immune system is likely primed, in a manner that expresses the gene product in the microbial membrane. The microbes with their transmembrane trough of antigens are introduced to one or more mucosal surface, e.g., the mucosae of the GI tract, vagina, or respiratory tract. No needles. No shots. No scary tales. It is a hundred percent about guiding the body to prevent and treat diseases, by itself, the way nature intended, with bacteria and yeasts wearing the white coats. Developing transformed microbes can take days to weeks, compared to the years and decades that it takes to develop vaccines and small molecule drugs. Transformed microbes cost a lot less to develop and can be manufactured anywhere in the world in a matter of days. The current invention will greatly reduce or eliminate the need for several diagnostic and medical procedures, vaccines, and drugs. It will save lives, ameliorate pain and suffering from disease and change economies - without a single shot.

55.20240139483SYSTEMS AND METHODS FOR ADMINISTERING VACCINE COMPOSITION USING MICROCHANNEL DELIVERY ADAPTER DEVICES
US - 02.05.2024
Clasificación Internacional A61M 37/00 Nº de solicitud 18269497 Solicitante AQUAVIT PHARMACEUTICALS, INC. Inventor/a Sobin Chang
The present invention provides a method for generating an immune response in a subject, comprising administering to the subject's skin an immunizing composition from a Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pathogen, wherein the composition is administered with a microneedle deliver adapter device, and wherein the immunizing composition comprises a heat killed or attenuated pathogen.

56.WO/2024/093149METHOD FOR PREPARING TUMOR-DERIVED CELL MICROPARTICLES BY MICROWAVE TREATMENT
WO - 10.05.2024
Clasificación Internacional C12N 5/09 Nº de solicitud PCT/CN2023/088119 Solicitante UNION HOSPITAL, TONGJI MEDICAL COLLEGE, HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY Inventor/a JIN, Yang
Provided is a method for preparing tumor-derived cell microparticles by microwave treatment. The method comprises the following steps: 1, taking a Lewis lung carcinoma cell line (LLC), and culturing the cell line in a culture dish for 24 h or more; 2, performing microwave heating treatment on cells; and 3, putting the cells subjected to the microwave treatment into a constant-temperature incubator for culturing for 24 h; and 4, collecting a cell supernatant in the culture dish after the culturing in the previous step, and performing centrifugal treatment many times using a density gradient centrifugation method to finally obtain precipitates, which are tumor-derived cell microparticles TMPMW. By preparing TMPMW by the microwave treatment, the process is simple, and the yield of the cell-derived microparticles can be improved at the same time. The microparticles secreted and extracted from tumor cells after microwave

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irradiation retain part of bioactive substances of a tumor itself, and thus have the potential to improve the immune environment of the tumor and serve as a therapeutic vaccine for the tumor. TMPMW can be used as a novel nanomaterial, becoming a platform for loading a drug, and being used for targeted biotherapy of a disease such as cancer.

57.2024202450Methods for improving the adsorption of polysaccharide-protein conjugates and multivalent vaccine formulation obtained thereof
AU - 02.05.2024
Clasificación Internacional Nº de solicitud 2024202450 Solicitante Serum Institute of India Private Limited Inventor/a DHERE, RAJEEV

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