VacCiencia

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

- Por la ruta de las "SOBERANAS".
- Noticias más recientes en la Web sobre vacunas.
- Artículos científicos más recientes de Medline sobre vacunas.
- Patentes más recientes en Patentscope sobre vacunas.

IFV INSTITUTO FINLAY DE VACUNAS

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Por la ruta de las "SOBERANAS"

A raíz de la detección de los primeros casos de COVID-19 en Cuba en marzo de 2020, los científicos cubanos comenzaron a estudiar todo lo relacionado al SARS-CoV-2, virus que causaba dicha enfermedad. El 19 de mayo de ese año, el presidente cubano Miguel Díaz-Canel Bermúdez le solicita a un grupo de representantes del polo científico cubano que, al margen de los progresos de otras naciones en la búsqueda de una vacuna, era importante conseguir la nuestra, porque le daría soberanía al país en el enfrentamiento a la pandemia en medio del hostil asedio imperial a todo lo que signifique desarrollo y progreso propios. Uno de los centros allí presentes fue el Instituto Finlay de Vacunas (IFV).

A partir de ese momento comenzó en esa institución, a idearse el proyecto que le daría vida a las "SOBERANAS", poniendo su experiencia en el desarrollo de vacunas preventivas y empeño en combatir esa terrible pandemia. Ese hecho colocó a Cuba en el grupo de países que lograron desarrollar vacunas contra el virus que causa la COVID-19.

A medida que se fue conduciendo este proceso, se fueron generando nuevos conocimientos que han quedado publicados en revistas científicas de alto impacto, de manera que estas contribuciones formen parte del conocimiento científico universal.

Como parte de la definición del Dominio de Unión al Receptor (RBD, por sus siglas en inglés) como antígeno para las vacunas, se publicó en ACS Publications el trabajo "*Molecular Aspects Concerning the Use of the SARS-CoV-2 Receptor Binding Domain as a Target for Preventive Vaccines*" para demostrar la capacidad de esta partícula del virus como antígeno de las futuras vacunas que se desarrollarían posteriormente.


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Outlook

Molecular Aspects Concerning the Use of the SARS-CoV-2 Receptor Binding Domain as a Target for Preventive Vaccines

Yury Valdes-Balbin,*,‖ Darielys Santana-Mederos,‖ Françoise Paquet,* Sonsire Fernandez, Yanet Climent, Fabrizio Chiodo, Laura Rodríguez, Belinda Sanchez Ramirez, Kalet Leon, Tays Hernandez, Lila Castellanos-Serra, Raine Garrido, Guang-Wu Chen, Dagmar Garcia-Rivera,* Daniel G. Rivera,* and Vicente Verez-Bencomo*

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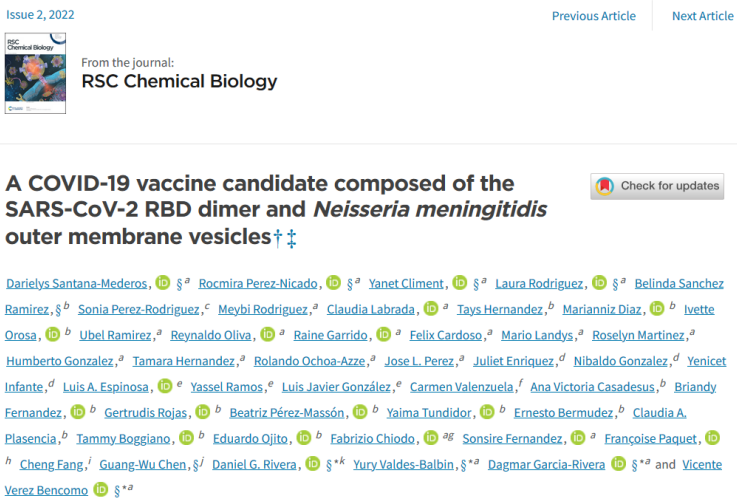
⇒ https://pubs.acs.org/doi/10.1021/acscentsci.1c00216

A partir de ahí, se desarrolla el primer candidato vacunal FINLAY-FR-1 basado en la combinación del RBD dimérico con la vesícula de membrana externa de *Neisseria meningitidis*, del meningococo B, que es la base de la vacuna cubana contra la meningitis meningocócica VA-MENGOC-BC® con el objetivo de ofrecerle mayor seguridad a este candidato vacunal. Se le realizó la evaluación preclínica correspondiente mediante la cual se demostró la capacidad de los anticuerpos de inhibir la interacción del RBD con el receptor ACE2 (el receptor que facilita la entrada del coronavirus en las células), así como la capacidad neutralizante de los anticuerpos frente al SARS-CoV-2, virus causante de la COVID-19. De todos estos resultados se derivó el artículo "*A COVID -19 vaccine candidate composed of the SARS-CoV-2 RBD dimer and Neisseria meningitidis outer membrane vesicles*" publicado en RSC Chemical Biology.


Issue 2, 2022

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From the journal:
RSC Chemical Biology

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A COVID-19 vaccine candidate composed of the SARS-CoV-2 RBD dimer and *Neisseria meningitidis* outer membrane vesicles†‡

Darielys Santana-Mederos, §[a] Rocmira Perez-Nicado, §[a] Yanet Climent, §[a] Laura Rodriguez, §[a] Belinda Sanchez Ramirez, §[b] Sonia Perez-Rodriguez,[c] Meybi Rodriguez,[a] Claudia Labrada,[a] Tays Hernandez,[b] Marianniz Diaz,[b] Ivette Orosa,[b] Ubel Ramirez,[a] Reynaldo Oliva,[a] Raine Garrido,[a] Felix Cardoso,[a] Mario Landys,[a] Roselyn Martinez,[a] Humberto Gonzalez,[a] Tamara Hernandez,[a] Rolando Ochoa-Azze,[a] Jose L. Perez,[a] Juliet Enriquez,[d] Nibaldo Gonzalez,[d] Yenicet Infante,[d] Luis A. Espinosa,[e] Yassel Ramos,[e] Luis Javier González,[e] Carmen Valenzuela,[f] Ana Victoria Casadesus,[b] Briandy Fernandez,[b] Gertrudis Rojas,[b] Beatriz Pérez-Massón,[b] Yaima Tundidor,[b] Ernesto Bermudez,[b] Claudia A. Plasencia,[b] Tammy Boggiano,[b] Eduardo Ojito,[b] Fabrizio Chiodo,[ag] Sonsire Fernandez,[a] Françoise Paquet,[h] Cheng Fang,[i] Guang-Wu Chen,[§j] Daniel G. Rivera,[§*k] Yury Valdes-Balbin,[§*a] Dagmar Garcia-Rivera[§*a] and Vicente Verez Bencomo[§*a]

⇒ https://pubs.rsc.org/en/content/articlelanding/2022/cb/d1cb00200g


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Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

A randomized, double-blind phase I clinical trial of two recombinant dimeric RBD COVID-19 vaccine candidates: Safety, reactogenicity and immunogenicity

Sonia Pérez-Rodríguez [a,1], Meiby de la Caridad Rodríguez-González [b,1], Rolando Ochoa-Azze [b,*,1], Yanet Climent-Ruiz [b], Carlos Alberto González-Delgado [a], Beatriz Paredes-Moreno [b], Carmen Valenzuela-Silva [c], Laura Rodríguez-Noda [b], Rocmira Perez-Nicado [b], Raúl González-Mugica [b], Marisel Martínez-Pérez [b], Belinda Sánchez-Ramírez [d], Tays Hernández-García [d], Alina Díaz-Machado [a], Maura Tamayo-Rodríguez [a], Alis Martín-Trujillo [a], Jorman Rubino-Moreno [a], Anamary Suárez-Batista [e], Marta Dubed-Echevarría [e], María Teresa Pérez-Guevara [e], Mayté Amoroto-Roig [f], Yanet Chappi-Estévez [f], Gretchen Bergado-Báez [d], Franciscary Pi-Estopiñán [d], Guang-Wu Chen [g], Yury Valdés-Balbín [b], Dagmar García-Rivera [b], Vicente Verez-Bencomo [b]

Debido a los resultados positivos de esta evaluación preclínica, se inició la fase de evaluación clínica, denominada SOBERANA 01, del candidato vacunal en cuestión. A pesar de que el ensayo clínico fase 1 fue registrado con ese nombre, finalmente se le adjudicó ese nombre al candidato vacunal propiamente y se convirtió en el nombre comercial de la vacuna para su utilización en el país. Cabe destacar que en este ensayo se evaluaron dos candidatos vacunales con RBD dimérico , uno combinado con la vesícula de membrana externa (FINLAY-FR-1) y el otro sin combinar (FINLAY-FR-1A). Los resultados de dicha evaluación se publicaron en la revista Vaccine a través del artículo "*A randomized, double-blind phase I clinical trial of two recombinant dimeric RBD COVID-19 vaccine candidates: Safety, reactogenicity and immunogenicity*".

⇒ https://www.sciencedirect.com/science/article/pii/S0264410X2200161X?via%3Dihub

El candidato vacunal FINLAY-FR-2 (SOBERANA 02), se desarrolló a la par del primero y estaba compuesto por la proteína RBD conjugada covalentemente al Toxoide Tetánico (TT). Antes de iniciar su evaluación clínica fue evaluado exhaustivamente en modelos de animales demostrando su no toxicidad y la capacidad de generar una elevada respuesta celular y de anticuerpos, incluyendo anticuerpos neutralizantes. Además, se observó la inducción de memoria inmunológica tanto de células B como T. Estos resultados fueron publicados en el artículo "*SARS-CoV-2 RBD-Tetanus Toxoid Conjugate Vaccine Induces a Strong Neutralizing Immunity in Preclinical Studies*" en ACS Central Science y "*Repeat-dose and local tolerance toxicity of SARS-CoV-2 FINLAY-FR-02 vaccine candidate in Sprague Dawley rats*" publicado en la revista Toxicology.

⇒ https://pubs.acs.org/doi/10.1021/acschembio.1c00272

⇒ https://www.sciencedirect.com/science/article/pii/S0300483X22000737


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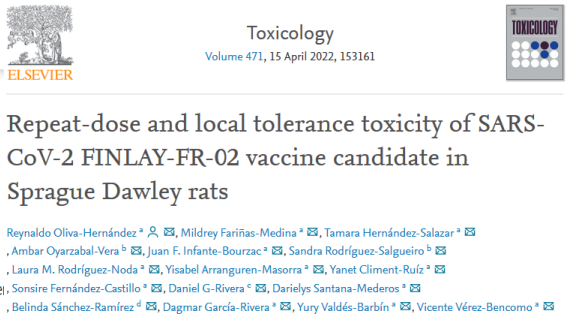
SARS-CoV-2 RBD-Tetanus Toxoid Conjugate Vaccine Induces a Strong Neutralizing Immunity in Preclinical Studies

Yury Valdes-Balbin*, Darielys Santana-Mederos, Lauren Quintero, Sonsire Fernández, Laura Rodriguez, Belinda Sanchez Ramirez, Rocmira Perez-Nicado, Claudia Acosta, Yanira Méndez, Manuel G. Ricardo, Tays Hernandez, Gretchen Bergado, Franciscary Pi, Annet Valdes, Tania Carmenate, Ubel Ramirez, Reinaldo Oliva, Jean-Pierre Soubal, Raine Garrido, Felix Cardoso, Mario Landys, Humberto Gonzalez, Mildrey Farinas, Juliet Enriquez, Enrique Noa, Anamary Suarez, Cheng Fang, Luis A. Espinosa, Yassel Ramos, Luis Javier González, Yanet Climent, Gertrudis Rojas, Ernesto Relova-Hernández, Yanelys Cabrera Infante, Sum Lai Losada, Tammy Boggiano, Eduardo Ojito, Kalet León, Fabrizio Chiodo, Françoise Paquet, Guang-Wu Chen, Daniel G. Rivel, Dagmar Garcia-Rivera*, and Vicente Verez Bencomo*


ELSEVIER

Toxicology

Volume 471, 15 April 2022, 153161

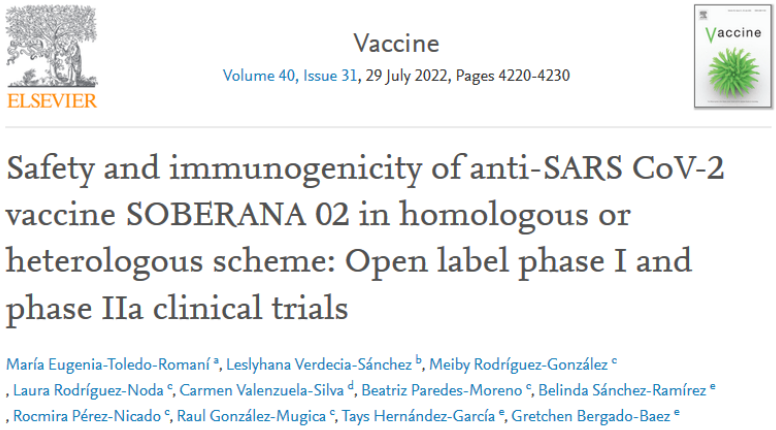
Repeat-dose and local tolerance toxicity of SARS-CoV-2 FINLAY-FR-02 vaccine candidate in Sprague Dawley rats

Reynaldo Oliva-Hernández [a], Mildrey Fariñas-Medina [a], Tamara Hernández-Salazar [a], Ambar Oyarzabal-Vera [b], Juan F. Infante-Bourzac [a], Sandra Rodríguez-Salgueiro [b], Laura M. Rodríguez-Noda [a], Yisabel Arranguren-Masorra [a], Yanet Climent-Ruíz [a], Sonsire Fernández-Castillo [a], Daniel G-Rivera [c], Darielys Santana-Mederos [a], Belinda Sánchez-Ramírez [d], Dagmar García-Rivera [a], Yury Valdés-Barbín [a], Vicente Vérez-Bencomo [a]

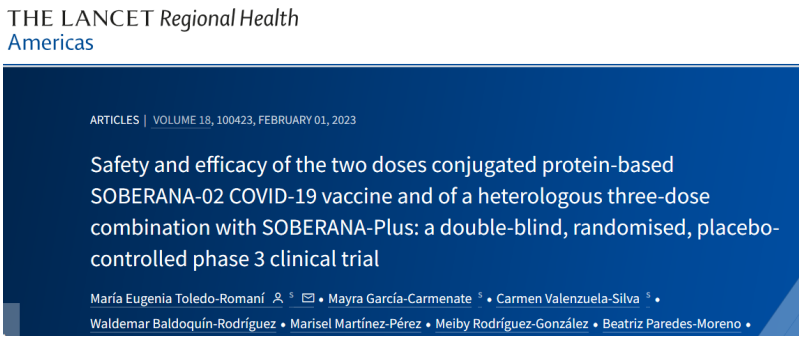
En el estudio clínico fase I se evaluaron dos formulaciones (alta y baja) de SOBERANA 02. Ambas resultaron seguras y bien toleradas, sin la presencia de eventos adversos graves y severos relacionados con la vacunación. Los resultados de inmunogenicidad obtenidos con la dosis más alta avalaron su selección como formulación a continuar con las siguientes fases de evaluación clínica. Los resultados fueron publicados en los artículos "*Safety and immunogenicity of anti-SARS CoV-2 vaccine SOBERANA 02 in homologous or heterologous scheme*" en la revista Vaccine y "*Safety and immunogenicity of anti-SARS CoV-2 conjugate vaccine SOBERANA 02 in a two-dose or three-dose heterologous scheme in adults: Phase IIb Clinical Trial*" en la revista Cell.

⇒ https://www.sciencedirect.com/science/article/pii/S0264410X22007174?via%3Dihub

⇒ https://www.cell.com/action/showPdf?pii=S2666-6340%2822%2900320-8



Los excelentes resultados obtenidos en fase 2 del esquema heterólogo de dos dosis de SOBERANA 02 y una dosis de SOBERANA PLUS, dieron luz verde a la fase 3. Los resultados finales de eficacia de este ensayo clínico con el esquema heterólogo de tres dosis se publicaron recientemente en la revista The Lancet Regional Health -Americas, a través del artículo "*Safety and efficacy of the two doses conjugated protein-based SOBERANA-02 COVID-19 vaccine and of a heterologous three-dose combination with SOBERANA-Plus: a double-blind, randomised, placebo-controlled phase 3 clinical trial*".



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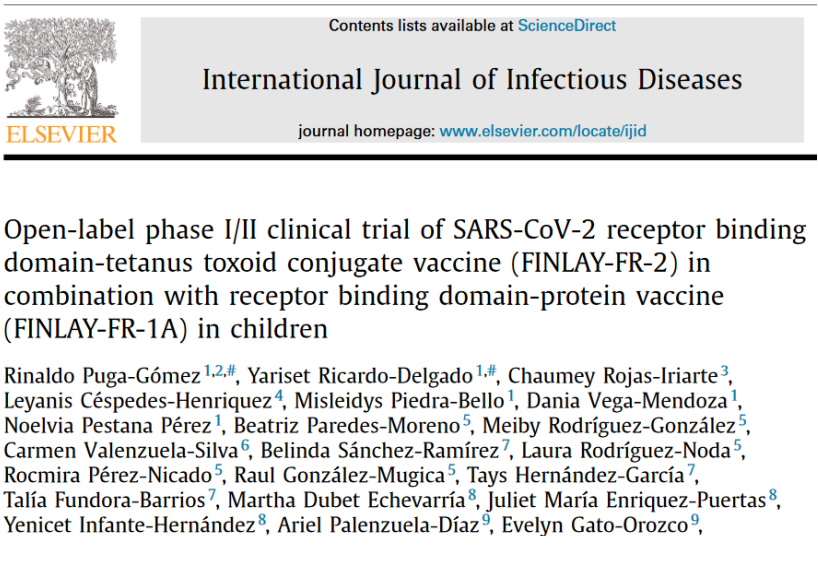
Teniendo en cuenta estos resultados tan alentadores, se aprobó el ensayo fase 1/2 con este mismo esquema heterólogo en población pediátrica. Se demostró que fue seguro e inmunogénico en niños de 3 a 18 años. Sus resultados se publicaron en International Journal of Infectious Diseases en el artículo "*Open-label phase I/II clinical trial of SARS-CoV-2 receptor binding domain-tetanus toxoid conjugate vaccine (FINLAY-FR-2) in combination with receptor binding domain-protein vaccine (FINLAY-FR-1A) in children*".



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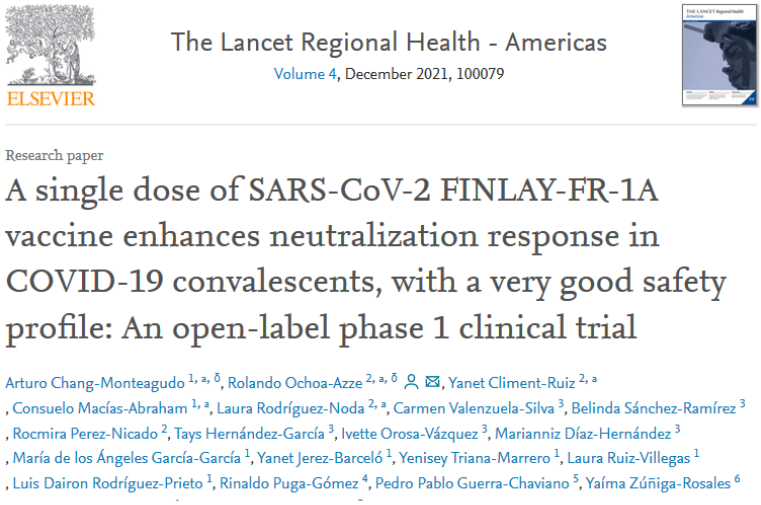
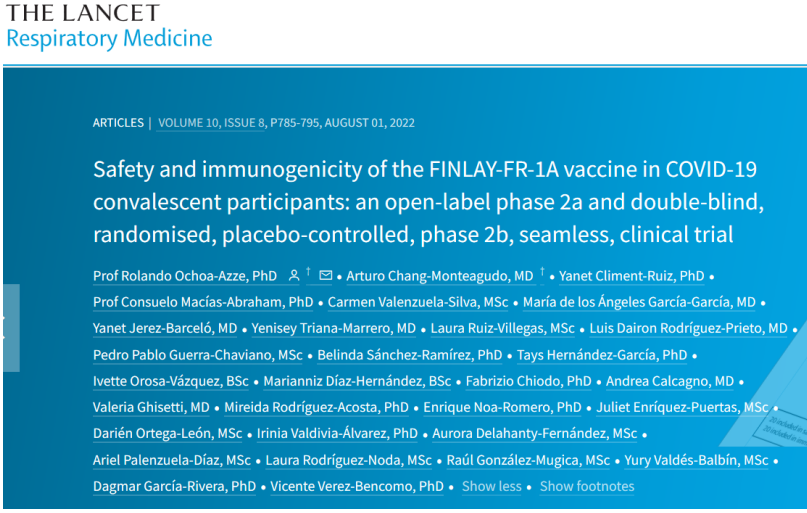
SOBERANA PLUS fue concebida como una vacuna de refuerzo con capacidad de reactivar la respuesta inmune preexistente y con potencial protección de la reinfección con las nuevas cepas, tanto en pacientes convalecientes, previamente expuestos al virus SARS-CoV-2, como en personas inmunizadas con otra vacuna. Fue sometida a evaluación clínica con el objetivo de demostrar su eficacia y seguridad.

Se demostró una elevada seguridad e inmunogenicidad en sujetos convalecientes. Los resultados finales de la fase 1 fueron publicados en el artículo "*A single dose of SARS-CoV-2 FINLAY-FR-1A vaccine enhances neutralization response in COVID-19 convalescents, with a very good safety profile: An open-label phase 1 clinical trial*" en la revista The Lancet Regional Health -Americas y los de fase 2 en "Safety and immunogenicity of the FINLAY-FR-1A vaccine in COVID-19 convalescent participants: an open-label phase 2a and double-blind, randomised, placebo-controlled, phase 2b, seamless, clinical trial" en The Lancet Respiratory Medicine.

⇒ https://www.sciencedirect.com/science/article/pii/S2667193X21000752?via%3Dihub

⇒ https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00100-X/fulltext





Se realizó un estudio de intervención en los trabajadores del Centro Nacional de Biopreparados (BIOCEN) con el objetivo de evaluar los efectos directos e indirectos de la vacunación anti SARS-CoV-2 con un esquema heterólogo 2P+1: dos dosis de SOBERANA®02 más una dosis de SOBERANA®Plus, donde se evidenció un perfil de seguridad muy favorable de las SOBERANAS e indicios de efectividad en la prevención de formas graves y mortalidad por COVID-19. Los resultados del estudio fueron publicados en la revista VacciMonitor en el artículo "Estudio de intervención con SOBERANA® en los trabajadores del Centro Nacional de Biopreparados".

⇒ https://vaccimonitor.finlay.edu.cu/index.php/vaccimonitor/article/view/281

También fueron publicados los resultados del estudio realizado en instituciones de salud del país con el objetivo de describir la progresión de la enfermedad en los sujetos vacunados con el esquema heterólogo de SOBERANA. Dichos resultados se pueden ver en el artículo "Progresión de la COVID-19 en trabajadores de una institución de salud cubana, vacunados con el esquema heterólogo de SOBERANA" en la revista VacciMonitor.

⇒ https://vaccimonitor.finlay.edu.cu/index.php/vaccimonitor/article/view/328

Noticias en la Web

Mucosal DNA vaccine found effective in stopping Covid in its tracks: Study

Dec 17. A mucosal DNA vaccine was proved effective in stopping COVID-19 in its tracks, a small-scale study conducted in mice has found.

An international research team has demonstrated that its mucosal DNA vaccine is capable of ensuring the total survival of a group of mice infected with a version of the virus adapted to this species, whereas the latter kills 100 per cent of unvaccinated mice. Each group of mice tested consisted of 10 individuals, the study said.

The study is published in the Biomaterials journal.

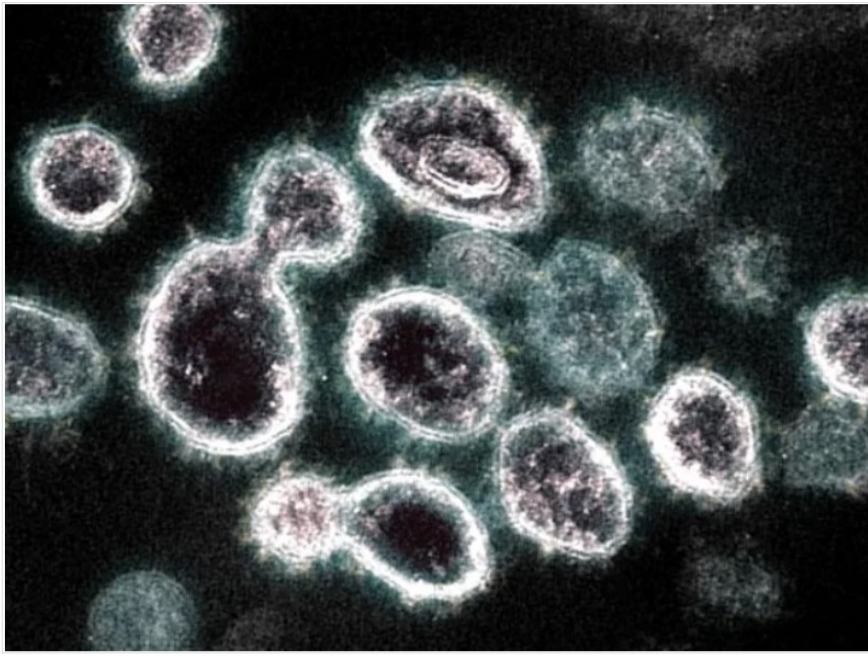


Photo: Bloomberg

Created using a vector developed by a Centre National de la Recherche Scientifique (CNRS) researcher at the Immunology and New Concepts in Immunotherapy Laboratory, Nantes University, France, this vaccine acts in a manner similar to that of RNA vaccines on the market.

The DNA delivered by the vector enters the target cells, causing them to produce a SARS-CoV-2 protein and allowing the immune system to prepare itself by producing antibodies and lymphocytes against the virus.

A vector is an element derived from medicinal chemistry used to deliver a molecule in a targeted manner. Here, the vector is a synthetic nanoparticle, the properties of which allow it to penetrate the mucous membranes and introduce DNA encoding a viral protein into the cells of the respiratory system.

Less known to the general public, mucosal vaccination via the mucus membranes could provide robust protection against SARS-CoV-2 infections, the study said.

Immune cells in the nose and lungs are considered better prepared to encounter and block the virus that causes COVID-19.

The vaccine's effectiveness against transmission between mice was not measured in this study, the study said.

However, the scientists hope that a vaccination method based on this principle could complement the current strategy, perhaps by providing better protection against transmission, the study said.

Fuente: Business Standard. Disponible en https://bit.ly/3IgZU3T

Estudio vincula la vacuna COVID-19 de Pfizer con coágulos sanguíneos, informa la FDA

17 dic. La vacuna contra COVID-19 de Pfizer fue vinculada con los coágulos sanguíneos en personas mayores, según la Administración de Alimentos y Medicamentos (FDA).

Un trabajador sanitario prepara las dosis de la vacuna COVID-19 de Pfizer en Portland, Oregón, en una fotografía de archivo. (Nathan Howard/Getty Images)

Los investigadores de la FDA dijeron que analizaron los registros de una base de datos de personas mayores en Estados Unidos y descubrieron que los casos de embolia pulmonar —coágulos sanguíneos en los pulmones— cumplían el umbral inicial de una señal estadística y estos seguían cumpliendo este criterio tras una evaluación más exhaustiva.

Otros tres resultados de interés —la falta de oxígeno en el corazón, un trastorno plaquetario denominado trombocitopenia inmunitaria y otro tipo de coagulación denominada coagulación intravascular— inicialmente suscitaron sospechas, según los investigadores. Evaluaciones más profundas, como las comparaciones con poblaciones que recibieron vacunas antigripales, mostraron que esos tres casos ya no cumplen el umbral estadístico de una advertencia.

Los investigadores analizaron datos de 17.4 millones de ancianos estadounidenses que recibieron un total de 34.6 millones de dosis de vacunas entre el 10 de diciembre de 2020 y el 16 de enero de 2022.

El estudio fue publicado por la revista Vaccine el 1 de diciembre.

La FDA dijo que no estaba tomando ninguna acción respecto a los resultados porque estos no prueban de que las vacunas causen ninguno de los cuatro resultados mencionados, y porque los hallazgos “todavía están bajo investigación y requieren un estudio más sólido”.

El Dr. Peter McCullough, asesor médico jefe de la Fundación Verdad por la Salud, dijo a The Epoch Times por correo electrónico que el nuevo estudio “corrobora las preocupaciones de los médicos de que el gran aumento de coágulos sanguíneos, la progresión de la enfermedad cardíaca aterosclerótica y los trastornos sanguíneos están independientemente asociados con la vacunación contra COVID-19”.

Pfizer no respondió a una solicitud de comentarios.

Cómo se realizó la investigación

Los investigadores de la FDA, con la ayuda de investigadores de los Centros de Servicios de Medicare y Medicaid (CMS), analizaron los datos de la base de datos de los CMS. Ellos incluyeron a beneficiarios del programa Medicare Fee-for-Service de 65 años o más que recibieron una vacuna dentro del plazo, que estaban inscritos cuando se vacunaron y que estuvieron inscritos durante una “período limpio” de tiempo antes de la vacunación. La ventana era de 183 o 365 días, según el resultado.

Alrededor de 25 millones de personas reciben el servicio Medicare Fee-for-Service, pero solo unos 17 millones se vacunaron durante el período de tiempo estudiado.

Los investigadores utilizaron pruebas de probabilidad para detectar un mayor riesgo de uno o más de 14 resultados tras la vacunación. El objetivo era ver si la vacunación podía aumentar el riesgo de resultados adversos, como la embolia pulmonar, o coágulos de sangre en los pulmones. Si un resultado alcanzaba un determinado umbral estadístico, eso significaba que podía aumentar el riesgo.

Los resultados iniciales del control de seguridad detectaron un aumento del riesgo de cuatro acontecimientos, según anunció la FDA el 12 de julio de 2021. Son los mismos cuatro esbozados en el nuevo estudio, que corresponde a la primera actualización que la agencia da sobre el tema desde su anuncio.

En el nuevo estudio, los investigadores revelaron que hasta el 15 de enero de 2022, se detectaron 9065 casos de falta de oxígeno en el corazón —lo que se conoce como infarto agudo de miocardio. En la misma fecha, se detectaron 6346 casos de embolia pulmonar, 1064 casos de trombocitopenia inmunitaria y 263 casos de coagulopatía.

El análisis primario mostró una señal de problema de seguridad para los cuatro resultados. Los investigadores intentaron ajustar las cifras utilizando distintas variables. Por ejemplo, en un momento dado estas se ajustaron de acuerdo a la variación de las tasas de fondo, o las tasas de cada resultado de la población general antes de la pandemia. Tras ciertos ajustes —no del todo— el infarto de miocardio, las cifras de trombocitopenia inmunitaria y coagulación intravascular dejaron de ser estadísticamente significativas.

Sin embargo, la embolia pulmonar siguió siendo estadísticamente significativa, según los investigadores. La embolia pulmonar es una afección grave que puede causar la muerte.

Las limitaciones del estudio incluían posibles señales de advertencias falsas y señales no detectadas debido a factores como la especificación incorrecta de los parámetros.

Entre las afecciones que no desencadenaron una señal se encontraban el ictus, la inflamación cardíaca y la apendicitis.

Las señales se detectaron solo después de la vacunación con Pfizer. Los análisis de las señales tras la recepción de las vacunas de Moderna y Johnson & Johnson no mostraron ningún problema.

Moderna y Johnson & Johnson no respondieron a las solicitudes de comentarios.

Efectos secundarios

Las tres vacunas contra COVID-19 aplicadas se han relacionado con una serie de efectos secundarios. La inflamación del corazón, la miocarditis, se ha relacionado con las vacunas de Moderna y Pfizer, de acuerdo a la confirmación de expertos de diferentes partes del mundo, mientras que la vacuna de Johnson & Johnson se ha asociado a los coágulos sanguíneos.

Otras afecciones, como la embolia pulmonar, han sido notificadas a las autoridades y también descritas en estudios, pero algunos trabajos de investigación no han encontrado un aumento del riesgo para la salud tras la vacunación.

Hasta el 9 de diciembre, se han notificado alrededor de 4214 informes de embolia pulmonar tras la

vacunación, incluidos 1886 informes tras recibir la vacuna de Pfizer, de acuerdo al Sistema de Notificación de Efectos Adversos de Vacunas (VAERS) de Estados Unidos.

Hasta la misma fecha, se habían notificado 1434 casos de infarto de miocardio postvacunación, con 736 de ellos tras recibir la vacuna de Pfizer, además de 469 casos de trombocitopenia inmunitaria postvacunación, con 234 de ellos tras recibir la vacuna de Pfizer, y 78 casos de coagulación intravascular postvacunación, con 42 de ellos tras recibir la vacuna de Pfizer.

Cualquiera puede crear informes al sistema VAERS, pero la mayoría son presentados por trabajadores de la salud, según muestran los estudios. El número de informes es un recuento insuficiente, según los estudios.

El nuevo estudio afirma que la FDA "cree firmemente que los beneficios potenciales de la vacunación contra la COVID-19 superan los riesgos potenciales de la infección por COVID-19". No se citó ninguna evidencia en apoyo de la creencia.

La FDA se reunirá con su panel asesor de vacunas en enero de 2023 para analizar el futuro de las vacunas contra COVID-19, después que han tenido un rendimiento mucho peor contra la variante ómicron y sus subvariantes.

"Una deficiencia del sistema de vigilancia de CMS es que no capturó la infección anterior y posterior por SARS-CoV-2, lo que acentúa el riesgo acumulativo de la vacunación contra COVID-19. Dado el gran número de personas que han sido vacunadas, la fracción atribuible a la población de problemas médicos atribuidos a las vacunas es enorme. Me preocupa la carga futura para el sistema de salud como consecuencia de la vacunación masiva indiscriminada contra COVID-19", dijo el Dr. McCullough a The Epoch Times.

Fuente: THE EPOCH TIMES. Disponible en https://bit.ly/3CkHHi8

COVID-19. ¿Las vacunas de Sanofi y Novavax ya están disponibles como dosis de refuerzo?

19 dic. ¿Es posible recibir la vacuna Sanofi como dosis de refuerzo contra la COVID-19? Y para el Novavax, ¿también es posible recibirlo como recordatorio?

Estas dos nuevas vacunas, Sanofi y Novavax, ya están autorizadas por la Alta Autoridad Sanitaria (HAS) para realizar un retiro del mercado frente a la COVID-19, según dos nuevos dictámenes de la HAS publicados este jueves 8 de diciembre de 2022. Hasta el momento , estas son las dos vacunas bivalentes de Pfizer/BioNTech y Moderna que se administran como parte de la campaña de vacunación de otoño.

La particularidad de estas dos nuevas vacunas se basa en la ausencia de ARN mensajero. A diferencia de las vacunas de Pfizer/BioNTech y Moderna, la vacuna de Sanofi es una vacuna de proteína recombinante, con un adyuvante y Novavax también es una proteína recombinante.

Vacunas de "segunda línea"

"Según lo indicado por la Haute Autorité de Santé, estas vacunas deben usarse como una segunda intención y están destinadas principalmente a personas que tienen una contraindicación para las vacunas de ARNm y personas que son reacias a las vacunas. Para el resto, se mantiene la recomendación de utilizar preferentemente vacunas bivalentes de ARNm" Respuesta para Oeste de Francia la Dirección General de Salud.

Recuerde que las vacunas bivalentes deberían permitir combatir con mayor eficacia la variante Ómicron y sus subvariantes, manteniendo su eficacia frente a la cepa inicial del virus. "Una vacuna bivalente es una vacuna que tiene dos valencias. Una valencia es la parte de una vacuna correspondiente a la protección contra un solo germen. Una vacuna bivalente protege contra dos enfermedades o dos cepas del mismo germen según explica el Seguro de Salud, en su página web.

COVID-19. ¿Las vacunas de Sanofi y Novavax ya están disponibles como dosis de refuerzo?

Fuente: News Es Euro. Disponible en https://bit.ly/3GF9UTr

Withdrawal of COVID-19 mitigation measures resulted in a rebound in Streptococcus pneumoniae cases in Germany

Dec 20. In a recent study posted to the medRxiv* preprint server, researchers from Germany conducted a population-based surveillance study to ascertain the etiology of community-acquired pneumonia (CAP) during the re-emergence of viral and bacterial respiratory diseases after the relaxation of coronavirus disease 2019 (COVID-19) containment and mitigation measures.


Study: Streptococcus pneumoniae re-emerges as a cause of community-acquired pneumonia, including frequent co-infection with SARS-CoV-2, in Germany, 2021. Image Credit: ThSucho/Shutterstock

Background

During the initial stages of the COVID-19 pandemic, before substantial vaccine coverage was achieved, most countries across the globe had implemented non-pharmaceutical disease mitigation measures such as social distancing and partial to complete lockdowns and encouraged masking and handwashing to limit the spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). These measures also brought about a significant reduction in other bacterial and viral respiratory diseases.

When these disease mitigation measures were relaxed and eventually withdrawn, a rebound of respiratory diseases was observed. Studies have reported increased respiratory syncytial virus cases among children and pneumococcal diseases in adults. However, the impact of factors such as herd immunity against SARS-CoV-2, the withdrawal of mitigation measures, and the emergent SARS-CoV-2 variants on CAP remain unexplored.

About the study

In the present study, the enrolled participants comprised adult patients with suspected lower respiratory tract infections admitted to two tertiary care hospitals and one community hospital in Thuringia, Germany. The participant inclusion criteria for this prospective surveillance study comprised a radiological confirmation of CAP diagnosis within two days of hospital admission, collection of urine samples and nasopharyngeal swabs, and availability of hospital discharge disposition information.

The nasopharyngeal swabs were tested for respiratory viruses through polymerase chain reaction (PCR): SARS-CoV-2, rhinovirus, respiratory syncytial virus, human endemic coronavirus, influenza virus, adenovirus, parainfluenza virus, enterovirus, human metapneumovirus, and bocavirus. Pneumococcal urinary antigen test and serotype-specific urinary antigen detection (UAD) assays were used for the urine samples. The UAD assays can detect the serotypes from the pneumococcal conjugate vaccines in use. The hospital staff also recorded the information on medical history, microbiologic testing, hospital course, and other patient characteristics for each patient.

Results

The results indicated a median age of 67 years for the 760 CAP patients enrolled in the study, with an 8.4% in-hospital fatality rate. Of the 760 CAP patients, 72.8% (553) had a respiratory pathogen, with the most prevalent pathogen being SARS-CoV-2, which was seen in 68.2% of the cases. Streptococcus pneumoniae was the second most prevalent pathogen, found in 40 of the 760 patients. No influenza cases were detected, and the incidence of infections from other viruses accounted for less than 1% each.

The serotypes from the 13-valent (PCV13), 15-valent (PCV15), 20-valent (PCV20), and 23-valent (PPV23) pneumococcal conjugate vaccines were found in 17 (42.5%), 18 (45%), 28 (70%), and 29 (73%) of the 40 cases, respectively. SARS-CoV-2 incidence was higher among patients aged 18–59, while patients aged 60 or above had a higher incidence of S. pneumoniae infections.

Between January and May of 2021, most CAP cases were due to SARS-CoV-2 (76.7%–93.7%), while S. pneumoniae infections only accounted for 0.0%–2.9% of the CAP cases. However, after a brief decrease to 7.1% in July, SARS-CoV-2 incidence rose to 82.4% in December 2021, and S. pneumoniae infections rose to 16.7%. While SARS-CoV-2 cases decreased in the older and younger patient groups between the first and second halves of 2021, S. pneumoniae infections and other respiratory viral infections increased during the second half of 2021.

During the first half of 2021, only two out of 283 patients were coinfected with S. pneumoniae and SARS-CoV-2, but during the second half of the year, 6% (13/215) of the patients in the 18–59 years group and 8.7% (11/127) of the patients aged 60 or older had coinfections with S. pneumoniae and SARS-CoV-2.

The changing etiology of CAP cases showed that during the early phase of the COVID-19 pandemic, a majority of the pneumonia cases were a result of SARS-CoV-2, with very low levels of S. pneumoniae infections. However, the incidence of S. pneumoniae infections returned almost to pre-pandemic levels in the older age group by late 2021. The relaxation of social distancing measures and differences in interference by SARS-CoV-2 variants that emerged later could explain the increased incidence of S. pneumoniae infections.

Conclusions

Overall, the results suggested that the disease mitigation measures implemented during the initial phases of the COVID-19 pandemic also decreased the incidence of S. pneumoniae infections and other respiratory pathogens. Still, the withdrawal of these measures has resulted in the re-emergence of S. pneumoniae infections. An evaluation of the vaccination strategies for influenza and S. pneumoniae, along with SARS-CoV-2, is necessary.

Nota: Este studio está publicado en https://www.medrxiv.org/content/10.1101/2022.12.15.22282988v1

Fuente: News Medical Life Sciences. Disponible en https://bit.ly/3vBYYzw

Colaboración en salud entre Gobierno de Japón y Unicef-Cuba: Más de seis millones de cubanos beneficiados

21 dic. Con beneficios palpables en el programa de inmunización del país, ya que los recursos donados contribuyen a fortalecer la cadena de frío y garantizar adecuados niveles inmunitarios en la población cubana, el proyecto Fortalecimiento de la capacidad del Sistema Nacional de Salud para la crisis de COVID-19, continúa concretando resultados que redundan en la calidad de la asistencia sanitaria en la nación caribeña.

La iniciativa financiada por el gobierno de Japón y ejecutada por el Fondo de las Naciones Unidas para la Infancia (Unicef) en Cuba, con la participación de autoridades cubanas, avanza luego de un año de implementación, y sus acciones beneficiarán a más de seis millones de personas, incluyendo a 1.2 millones de niños y niñas.

Más de 6 millones de cubanos serán beneficiados con este proyecto, entre ellos 1.2 millones de niñas y niños. Foto: Lisandra Fariñas/Cubadebate.

El policlínico Lidia y Clodomira, ubicado en el municipio capitalino de Regla, es uno de las 255 instituciones de la atención primaria de Salud y 13 hospitales del país, que han fortalecido su cadena de frío a partir de la adquisición de suministros médicos donados por el proyecto con este fin.

El centro de salud—que atiende más de 44 000 personas pertenecientes a tres consejos populares de este territorio y la zona este de Guanabacoa— fue sede hoy de la entrega de parte de este equipamiento, en presencia del Embajador de Japón en Cuba, Excmo. Sr. Hirata Kenji; la Sra. Alejandra Trossero, Representante Unicef; la viceministra primera del Ministerio de Comercio Exterior, Ana Teresita González Fraga, la doctora Carilda Peña García, viceministra de Higiene y Epidemiología del Ministerio de Salud Pública, y otras autoridades de salud del municipio, trabajadores, científicos y miembros del cuerpo diplomático en el país.

Asimismo, se subrayó el aporte significativo a centros científicos pertenecientes a BioCubaFarma, como el Instituto Finlay de Vacunas y el Centro de Ingeniería Genética y Biotecnología (CIGB), vinculados al desarrollo de vacunas, con la adquisición de refrigeradores precalificados por la OMS, neveras, con sus controladores de temperatura y los *icepack*, así como con *frezzer* para el desarrollo de nuevos candidatos vacunales.

Freezer de -80 grados adquirido como parte del proyecto para los centros de investigación. Foto: Unicef.

El Embajador de Japón en Cuba, Excmo. Sr. Hirata Kenji mostró su satisfacción por la colaboración conjunta entre su gobierno, Unicef y las autoridades cubanas, para hacer realidad una iniciativa que ayudase en la lucha contra la pandemia de COVID-19, y apoyase la campaña de inmunización que desarrolló el país a partir del desarrollo de inmunógenos propios. “Gracias a esta campaña hoy Cuba controló la COVID-19. Quiero felicitar al pueblo y gobierno cubanos, y a sus científicos, por esos logros”, señaló.

Hirata Kenji agregó que el impacto de este proyecto va más allá del control del coronavirus. “La cadena de frío, reforzada por este proyecto, también tiene impacto positivo para la campaña de vacunación de otro tipo, así como para la investigación científica y tecnológica. Me siento muy satisfecho de que Japón haya podido hacer algo bueno para nuestros amigos cubanos, en un momento importante”, dijo.

Subrayó que la iniciativa aún no termina, porque hay equipamiento que todavía no ha llegado al país y arribará próximamente, dijo.

“Hemos podido en un momento de mucha preocupación y urgencia para el país, como fue la COVID-19 y las situaciones entorno a ello del año pasado, poder actuar rápidamente, y utilizar de alguna manera el contexto de la epidemia, para apoyar al pueblo cubano y sus instituciones de salud a fortalecer su cadena de frío, y sus sistema de salud”, apuntó Alejandra Trossero, representante de Unicef en Cuba.

“Creo que esta contribución del pueblo y el gobierno de Japón hacen una gran diferencia en el país. Es un placer estar en un policlínico y ver de primera mano el proceso de vacunación, que es un orgullo para el país y para la región, y la utilidad del proyecto”, resaltó.

La viceministra primera del Mincex, Ana Teresita González Fraga, sostuvo que la inmunización es una prioridad del sistema de salud primario de Cuba. “Hemos llevado a cabo una vacunación muy grande para poder enfrentar la COVID-19. Más del 90% de la población cubana está inmunizada contra esta enfermedad, incluyendo a los niños de más de dos años, lo que es un logro que nos permite hoy estar en las condiciones que estamos”, dijo.

“Para orgullo de Cuba nuestros niños hoy son inmunizados contra 13 enfermedades; ocho de esas vacunas se producen en nuestro país, en nuestros centros científicos. Este proyecto va a ser una contribución muy importante para continuar desarrollando un programa, que Cuba garantiza a pesar de las carencias y el bloqueo por lo que significa para la vida de nuestra población”, señaló González Fraga.

La viceministra agradeció al Gobierno japonés el apoyo, en un momento cuando Cuba estaba atravesando por el pico pandémico. Fue un momento en que incluso teníamos rota la fábrica de oxígeno y era de mucha tensión para el sistema nacional de salud, recordó.

González Fraga agradeció a los institutos de investigación que salvaron el país con la creación de cinco candidatos vacunales, tres de ellos actualmente con la categoría de vacunas y que permitieron inmunizar a la población cubana. “A Cuba le hubiera sido imposible adquirir vacunas para toda la población, las transnacionales farmacéuticas no nos las hubieran vendido. No para inmunizar a todos”, dijo la viceministra, que subrayó el rol protagónico del Ministerio de Salud para liderar el proceso.

La doctora Carilda Peña García, viceministra de Higiene y Epidemiología, del Ministerio de Salud Pública refirió que los donativos del proyecto han sido trascendentales para el logro de los resultados que hoy exhibe el país.

A nombre del Ministerio de Salud Pública agradeció al Gobierno de Japón y a la UNICEF por este proyecto, donde se ha fortalecido la cadena de frío de vacunas con la adquisición de equipos precalificados por la OMS como son: refrigeradores, termos, paquetes de hielo, termómetros de registro continuo, así como jeringuillas.

Peña García señaló a Cubadebate que en los últimos años el Gobierno de Japón, a través de la Agencia Japonesa de Cooperación Internacional (JICA) y otras instituciones, ha realizado importantes contribuciones a la salud cubana, con equipos médicos y piezas de repuestos, con el objetivo de fortalecer especialidades médicas como: Anatomía Patológica, Imagenología y Endoscopia.

“Por su parte la cooperación con Unicef nos ha ayudado a mantener los logros alcanzados en el ámbito de la salud materno-infantil, incluyendo el enfrentamiento a la pandemia de covid-19, con importantes donaciones de medicamentos e insumos. Contribuye anualmente con la donación del 70% de las dosis de vacuna PRS que se administran al año de vida”, explicó.

Destacó que en tiempos de pandemia no se afectó el Programa Ampliado de inmunizaciones, el cual mantuvo coberturas superiores al 98% para todas las vacunas del esquema de rutina y con ello se ratificó la eliminación de seis enfermedades, dos formas clínicas severas en el menor de un año y dos complicaciones clínicas graves. El resto de las inmunoprevenibles se encuentran bajo control con tasas de incidencia que no constituyen un problema de salud.

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

Campaña de vacunación con Abdala inició en Ciudad de México

22 dic. La Secretaría de Salud de la Ciudad de México informó que fueron inoculados 2 037 ciudadanos con el fármaco anticovid cubano Abdala en una nueva campaña de vacunación.

Foto: @SSaludCdMx.

La vacunación está dirigida a mayores de 18 años que necesiten una dosis de refuerzo o no hayan recibido ninguna.

Esta campaña se desarrollará en 230 unidades de la Secretaría de Salud de la Ciudad de México.

Esa entidad señaló que para la aplicación de la dosis de refuerzo era necesario haber cumplido cuatro meses de la última vacuna contra COVID-19 sin importar la marca previa, llevar el comprobante de última dosis y la Cartilla Nacional de Salud.

La Comisión Federal para la Protección contra Riesgos Sanitarios (Cofepris) autorizó Abdala para su uso de emergencia en México el 28 de diciembre de 2021.

Según los estudios de cohorte, Abdala es efectiva en 98.1% en la prevención de la enfermedad sistémica severa y 92.28% contra la enfermedad sintomática.

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

Massachusetts professor exalts Cuban vaccines and world inequity

Dec 23. Professor Tanalis Padilla, a researcher at the Massachusetts Institute of Technology (MIT) and author of several books, including A History of Rural Teachers, praised Cuba's homegrown vaccines and denounced world inequity.

The local newspaper La Jornada published an article by the Mexican-born professor, in which she highlighted Cuba's efforts in the preparation of its vaccines against COVID-19 and the beginning of the supply of the biological vaccines to Mexico.

Padilla recalled that in late November, the first shipment of Cuba's Abdala vaccine arrived in Mexico, one of the three vaccines -together with SOBERANA 02 and SOBERANA Plus- authorized by the Federal Commission for the Protection against Sanitary Risks (Cofepris).

At first sight, she pointed out, it seems surprising that Cuba, a poor country, blockaded by the United States for six decades and going through an acute economic crisis, appears next to great powers such as

the United States, the United Kingdom, and China, in the list of countries that have developed their own vaccines.

She stated that Cuba stands out for its high level of vaccination, with some 86 percent of its population having received all three doses, a level only exceeded at the time by the United Arab Emirates.

Cuba was also the first country to vaccinate children up to two years old massively, a process which reduced the lethality of the pandemic in the country, although Covid-19 does not affect them as seriously as it affects the elderly, young children are indeed a source of transmission.

She recalled that Cuba has been developing medicines and vaccines since the 1980s, both for its own population and for export and donations to other countries, and highlighted the work of the Center for Genetic Engineering and Biotechnology (CIGB) and the Finlay Vaccine Institute.

Among Cuba's reasons for producing its own vaccines is that it did not trust that it could acquire them from the international community due to the US economic, commercial and financial blockade that was intensified during the pandemic, and the bet on its own vaccines paid off, not only for its own population but also for other countries that the United States also insists on punishing.

Cuba has sent its vaccines to Venezuela, Syria, Nicaragua, and Vietnam; SOBERANA 02 is being produced in Iran. In addition, it signed agreements with other countries to transfer its technology and provide the vaccines at low cost.

In extremely adverse conditions, Cuba continues to surprise the world: with its international medical brigades, with its medical innovations, with the high health rates of its population.

Cuba's COVID-19 vaccines are another reminder of what can be achieved, if you don't operate under capitalist logic.

Fuente: Prensa Latina News. Disponible en https://bit.ly/3WVqHqI

Un nuevo estudio analizó siete vacunas contra el COVID: cuál es la más efectiva

24 dic. Comandado por el Instituto Clínico Humanitas y el Grupo Humanitas, del Grupo Techint, científicos de cuatro países realizaron un trabajo en el cual evaluaron el comportamiento de las inmunizaciones y su capacidad de generar anticuerpos.

Dos mil personas, cuatro países y siete vacunas contra el COVID. Con este panorama trabajaron los científicos de Argentina, Italia, México y Brasil que forman parte del Instituto Clínico Humanitas y el Grupo Humanitas, que pertenecen al Grupo Techint. Liderados por el profesor emérito Alberto Mantovani, uno de los inmunólogos más importantes del mundo y el investigador italiano más citado en la literatura científica

internacional, más de 300 doctores analizaron qué inmunización es más efectiva ante el SARS-CoV-2.

“Existe escasa información en relación a la comparación de seroconversión y eventos adversos posteriores a la inmunización (AEFI) con diferentes vacunas contra el SARS-CoV-2. Nuestro objetivo fue correlacionar la magnitud de la respuesta de anticuerpos a la vacunación con condiciones clínicas previas y AEFI”, explicaron los expertos al dar detalles sobre las razones detrás de este trabajo, que fue publicado en Frontiers in Immunology.

Según indicaron, para conocer este aspecto, se reclutaron un total de 1867 pacientes de estos 4 países: 1352 de México, 42 de Italia, 260 de Brasil y 213 de Argentina. “Participaron 2000 empleados y miembros de la comunidad”, señalaron en un comunicado y aclararon: “En Argentina, se realizaron en las comunidades de Campana y San Nicolás, donde tiene plantas productivas”.

En ese sentido, resaltaron que “la vacuna utilizada con mayor frecuencia fue ChAdOx1-S (AstraZeneca) en 666 sujetos, Coronavac en 582, BNT162b2 mRNA (Pfizer) en 289, Gam-COVID-Vac (Sputnik) en 213, mRNA-1273 (Moderna) en 65, Ad26.COV2 (Janssen) en 31 y Ad5-nCoV (CanSino) en 19". Entre los participantes, la edad media fue de 52 años, “siendo estadísticamente diferente entre los grupos de vacunas, ya que algunas se propusieron para un grupo de edad particular”. Asimismo, indicaron que “el 52 % de los sujetos eran hombres, 559 (30 %) tenían obesidad y 501 (26,8 %) tenían hipertensión”.

Qué vacuna es más efectiva contra la COVID-19

Según señalaron en un comunicado, “los datos recopilados en el estudio internacional –realizado entre abril y octubre de 2021 – comprueban que todas las vacunas contra el Covid-19 generan anticuerpos y son bien toleradas, incluidas Sputnik y Coronavac”. En ese sentido, resaltaron que el trabajo “demostró que hay una relación proporcional entre la cantidad de efectos adversos de las vacunas y la cantidad de anticuerpos generados: las vacunas con mayores efectos adversos son las que más anticuerpos generan”.

En la Argentina, según explicaron, se enlistaron más de 200 voluntarios de las comunidades de San Nicolás y Campana, donde Ternium y Tenaris (pertenecientes al Grupo Techint) tienen sus plantas productivas respectivamente. Todos los participantes nacionales recibieron la vacuna Sputnik V.

Las vacunas de ARN mensajero fueron las que evidenciaron un mejor desempeño / AFP

Más allá de este aspecto local, los expertos señalaron que "todas las vacunas mostraron cambios significativos en los anticuerpos IgG anti-S1 y anti-S2 con diferencias significativas entre las vacunas y según el historial de SARS-CoV-2". Dicho de otro modo, todos los voluntarios que fueron parte del trabajo mostraron una respuesta inmune ante las proteínas responsables de la infección, dependiendo si se habían infectado o no.

En este tono, los expertos indicaron que "en pacientes sin tratamiento previo, el aumento más alto después de la primera dosis se observó en mRNA-1273 (Moderna), luego en BNT162b mRNA (Pfizer) y Ad5-nCoV (CanSino)". En tanto, en aquellos que se habían infectado previamente, "el mayor aumento después de la primera dosis se observó en mRNA-1273 (Moderna), luego en BNT162b mRNA (Pfizer) y ChAdOx1-S (AstraZeneca)".

"En pacientes naïve (personas sin infección previa), el aumento más alto después de la segunda dosis se observó en mRNA-1273 (Moderna), luego BNT162b mRNA (Pfizer) y Gam-COVID -Vac (Sputnik), mientras que en sujetos previamente expuestos al SARS-CoV-2 el mayor aumento después de la segunda dosis se observó en mRNA-1273 (Moderna), luego Gam-COVID-Vac (Sputnik) y ARNm de BNT162b (Pfizer)", indicaron en el estudio

Moderna, Pfizer, CanSino, Sputnik V, Janssen, AstraZeneca y Coronavac: cuál de estas 7 mostró mejores resultados / (Andina)

Por último, en lo que se refiere a los efectos adversos, el trabajo señaló que "se observó al menos un EAPV después de la primera dosis en el 71 % de los encuestados que recibieron ARNm de BNT162b2 (Pfizer), en el 93 % con ARNm-1273 (Moderna), en el 38 % con Gam-COVID-Vac (Sputnik), en el 42 % con Coronavac, en el 51 % con ChAdOx1-S (AstraZeneca), en el 74 % con Ad5-nCoV (CanSino), y el 81% con Ad26.COV2 (Janssen)".

En tanto, tras "la segunda dosis, el 65 %, 88 %, 23 %, 33 % y 23 % de los encuestados experimentaron al menos un EAPV después de recibir ARNm de BNT162b2, ARNm-1273, Gam-COVID-Vac, Coronavac y ChAdOx1-S, respectivamente". "Para cada vacuna, la mayoría de los eventos adversos ocurrieron durante las primeras 24 horas después de la inyección, ya sea después de la primera o la segunda dosis", especificaron.

"Los pacientes que recibieron ARNm de BNT162b2, ARNm-1273, Gam-COVID-Vac, Coronavac, ChAdOx1-S, Ad5-nCoV y Ad26.COV2 calificaron subjetivamente el AEFI después de la primera dosis como "muy leve" o "leve" en el 85 %, 80%, 95%, 84%, 67%, 93% y 57% de los casos, respectivamente. Los AEFI después de la segunda dosis fueron calificados como "muy leves" o "leves" por el 82 %, 49 %, 98 %, 89 % y 76 % de los pacientes que recibieron ARNm de BNT162b2, ARNm-1273, Gam-COVID-Vac, Coronavac , y ChAdOx1-S respectivamente", agregaron los expertos y concluyeron: "El 49% de los pacientes que recibieron mRNA-1273 (Moderna) calificaron sus eventos adversos después de la segunda dosis como 'moderados'".

Los expertos midieron el desempeño de las inmunizaciones tras la primera dosis, luego de la segunda y también posterior a la infección / Getty

Los detalles del estudio

Según señalaron en un comunicado, "en Italia, el Grupo Techint está presente en el cuidado de la salud a través del Instituto Clínico Humanitas y el Grupo Humanitas. Humanitas promueve, implementa y gestiona

iniciativas de atención a la salud, y cuenta con un centro de investigación y docencia". "El Grupo Humanitas incluye el hospital Instituto Clínico Humanitas, cerca de Milán, enfocado en la investigación y la enseñanza, además de prestigiosos hospitales privados acreditados en Milán, Bérgamo, Turín, Catania y Castellanza", destacaron.

En lo que se refiere a la Argentina, explicaron que fueron parte del estudio "las doctoras y bioquímicas tanto en San Nicolás como Campana: Graciela Paez Bo, Cecilia Acciardi, Eleonora Penovi, Cecilia Bernatzki, Karina Santervas y Paola Aguirre". "Todas las profesionales destacaron el compromiso de la población que participó del estudio y sus familiares con la investigación, pese a que se trataba de una población de edad avanzada (en condiciones de recibir la vacuna en ese momento) y que implicaba un seguimiento durante varios meses de, por ejemplo, la sintomatología relacionada a los efectos adversos de las vacunas o a los síntomas de covid-19", agregaron.

"El estudio es parte del compromiso del Grupo Techint con las comunidades en las que opera, con el convencimiento de que un proyecto industrial sólo puede crecer de manera integrada con su entorno. Para este estudio en particular, Ternium y Tenaris impulsaron la participación comunitaria en articulación con los hospitales públicos de la zona. Además, donaron equipamiento que quedaron como infraestructura para la red de hospitales locales de San Nicolás y Campana", concluyeron.

Fuente: infobae. Disponible en https://bit.ly/3GEQ7na

Covid-19: Esta es la variante del SARS-CoV-2 que se originó en México

25 dic. El Consorcio de Vigilancia Genómica de México (CoViGen-Mex) identificó una variante del SARS-CoV-2, virus que provoca el COVID-19, que es de origen mexicano y fue descubierta durante la quinta ola de contagios, en julio de 2022.

Se trata de la Ómicron BW.1, la cual ha sido encontrada predominantemente en tierras yucatecas, con más de 75 por ciento de los genomas secuenciados en la región, informó la UNAM.

De acuerdo con los análisis realizados por investigadores miembros del CoViGen-Mex del Instituto de Biotecnología (IBt) de la UNAM, esta variante deriva de secuencias mexicanas de la Ómicron BA.5.6.2.

Además, la BW.1 comparte mutaciones que han sido señaladas como importantes en la Ómicron BQ.1, una de las más exitosas reportadas hasta la fecha, ya que favorecen el escape inmune.

"Si bien la variante BW.1 se ha mantenido localizada en la zona de la península de Yucatán, donde se registró un aumento importante de casos desde el mes de octubre, no necesariamente dominará a nivel nacional, puesto que actualmente son múltiples variantes las que están presentes en otras regiones de nuestro territorio", señaló la UNAM.

El Instituto de Biotecnología (IBt) de la UNAM integra, junto con otras instituciones académicas de talla internacional, el Consorcio de Vigilancia Genómica de México.

Desde 2020, y como parte de la vigilancia de la COVID-19 en el país –con apoyo del Instituto Mexicano del Seguro Social, la Secretaría de Educación, Ciencia, Tecnología e Innovación de la Ciudad de México y el Consejo Nacional de Ciencia y Tecnología–, el CoViGen-Mex ha secuenciado más de una tercera parte de los genomas del virus SARS-CoV-2 a nivel nacional.

Junto con los datos producidos principalmente por los institutos nacionales de Medicina Genómica y el de Diagnóstico y Referencia Epidemiológicos, la vigilancia realizada por el CoViGen-Mex ha permitido el estudio de la sucesión y evolución de variantes del virus en nuestro territorio, con resultados que han explorado, entre otras, las variantes B.1.1.519, alfa y delta.

"Cabe mencionar que las variantes que circulan actualmente son todas descendientes de Ómicron y, por lo tanto, dan lugar, generalmente, a una enfermedad leve".

Fuente: proceso. Disponible en https://bit.ly/3vIrH5z

Las razones científicas por las que nos volvemos a reinfectar de COVID-19

25 dic. Investigadores europeos descubrieron cuánto duran los anticuerpos que se generan tras tener la infección, por ello es importante aplicarse las dosis de refuerzo de la vacuna.

Unidades para pruebas COVID. (Foto: Gobierno de México)

Gabriel García Rodríguez, secretario del Sistema Nacional de Vigilancia Epidemiológica (CONAVE), informó que la sexta ola de COVID-19 está confirmada con base a los datos oficiales en el Sistema de Vigilancia Epidemiológica Respiratoria Viral (SISVER), por lo que se le exhortó a todas las dependencias de salud tomar las medidas correspondientes para su atención en todos los centros.

Los contagios por coronavirus se incrementaron de 5 mil 957 a 20 mil 642 de noviembre a diciembre, pero en la tercera semana de este mes se registraron 25 mil 445 casos y 106 muertes a causa de este virus. Además, recientemente se reportaron 28 mil 547 casos activos de COVID-19 distribuidos en distintas entidades de la República.

Los casos obedecen a las nuevas variantes del virus, aunque el nivel de letalidad ha disminuido, en gran parte, gracias a las vacunas. Otro factor importante es mantener el uso del cubrebocas en espacios públicos y espacios cerrados.

Por qué nos volvemos a contagiar de coronavirus

Investigadores del Reino Unido descubrieron cuánto duran los anticuerpos que se generan tras tener la infección.

El estudio reveló que los anticuerpos producidos en la nariz disminuyen nueve meses después de la infección por Covid, mientras que los que se encuentran en la sangre duran al menos un año.

Los anticuerpos presentes en el líquido nasal (conocidos como inmunoglobulina A o IgA) aportan una defensa de primera línea contra el COVID al bloquear al coronavirus cuando entra por primera vez en las vías respiratorias. Estos anticuerpos son muy eficaces para impedir que el virus penetre en las células y provoque la infección.

Sin embargo, los investigadores descubrieron que los anticuerpos nasales sólo estaban presentes en los recién infectados y eran especialmente efímeros frente a la variante Ómicron, en comparación con las variantes anteriores.

Esos resultados, que se publicaron en eBioMedicine, del grupo The Lancet Discovery Science, podrían explicar por qué las personas que se han recuperado corren el riesgo de volver a infectarse, y especialmente con Ómicron y sus variantes.

El trabajo también descubrió que la vacunación es muy eficaz para crear y potenciar anticuerpos en la sangre, que previenen la enfermedad grave, pero tuvo muy poco efecto sobre los niveles de IgA nasal.

La doctora Felicity Liew, del Instituto Nacional del Corazón y los Pulmones del Imperial College de Londres, explicó que "los anticuerpos sanguíneos ayudan a proteger contra la enfermedad, mientras que los anticuerpos nasales pueden prevenir la infección por completo. Esto podría ser un factor importante detrás de las infecciones repetidas con el coronavirus SARS-CoV-2 y sus nuevas variantes".

Además, el estudio descubrió que mientras que las vacunas actuales son eficaces para aumentar los anticuerpos sanguíneos que pueden prevenir enfermedades graves y la muerte, no aumentan significativamente los anticuerpos IgA nasales.

Los investigadores sugieren que la próxima generación de vacunas incluya aerosoles nasales o vacunas inhaladas que se dirijan a estos anticuerpos con mayor eficacia, ya que son capaces de potenciarlos y reducir las infecciones de forma más eficaz; además de prevenir la transmisión.

El profesor Peter Openshaw, coautor del estudio y miembro del Imperial College de Londres, señaló que las vacunas actuales están diseñadas para reducir la enfermedad grave y la muerte, "y son espectacularmente eficaces en este objetivo. Ahora es esencial desarrollar también vacunas en aerosol nasal que puedan proporcionar una mejor protección contra la infección".

Es brillante que las vacunas actuales permitan que menos personas enfermen gravemente, pero sería aún mejor si pudiéramos evitar que se infecten y transmitan el virus", agregó el investigador.

En el estudio se analizaron los anticuerpos de los participantes para saber cuánto duraban los anticuerpos nasales, en comparación con los que se encuentran en la sangre. También estudiaron el efecto de las vacunas COVID-19 posteriores en los anticuerpos de la nariz y la sangre. Se tomaron muestras cuando las personas fueron hospitalizadas y a los seis meses y un año después.

También se observó que los anticuerpos sanguíneos de los participantes seguían fijando el virus original del SARS-CoV-2 y las variantes Delta y Ómicron un año después de la infección, pero se constató que son necesarias vacunas de refuerzo para mantener esta inmunidad.

Fuente: infobae. Disponible en https://bit.ly/3WCpJQd

COVID-19: la vacuna de proteína recombinante francesa Sanofi finalmente en el mercado

27 dic. Esperada desde hace 2 años, la vacuna desarrollada por el laboratorio francés Sanofi contra el coronavirus finalmente está en el mercado. Desde el 22 de diciembre, se puede encontrar en Francia en las farmacias. Es una vacuna de proteína recombinante y su uso está especialmente recomendado para dosis de refuerzo por la Alta Autoridad Sanitaria. Se trata de personas mayores de 18 años.

La vacuna de Sanofi (VidPrevtyn Beta) con proteína recombinante recibió el dictamen favorable para su

uso por parte de la Alta Autoridad Sanitaria el 8 de diciembre, al igual que Nuvaxovid de Novavax, ya utilizada como primera inyección.

Desde el 22 de diciembre, la vacuna de Sanofi se distribuye en farmacias de Francia y debería estar en Guyana en enero.

Sin duda una buena noticia para todos aquellos que siguen siendo resistentes a ser vacunados con la vacuna de ARN mensajero de Pzifer utilizada principalmente en Guyana. Pero actualmente, según las últimas fuentes oficiales de ARS Guyana, menos de la mitad de la población mayor de 12 años ha recibido una vacuna contra la COVID-19.

Esta nueva vacuna se pone en el mercado mientras asistimos a un resurgimiento de la epidemia de coronavirus en todo el país.

Se está haciendo una campaña para que los vacunados que hayan recibido 2 o 3 dosis", se recomienda una nueva dosis a los 3 meses del último refuerzo para mayores de 80 años e inmunodeprimidos, y a los 6 meses para el resto: mayores de 60 años, menores de 60 años con comorbilidades, mujeres embarazadas, así como para su entorno".

Fuente: News Es Euro. Disponible en https://bit.ly/3WRhfVG

Ómicron, mpox, cólera y vacuna contra el VIH: las noticias más "virales" del 2022

28 dic. El 2022 fue el tercer año de la pandemia de COVID-19. El levantamiento de muchas de las restricciones impuestas durante lo peor de la enfermedad coincidió con la aparición de ómicron, una de las peores variantes del virus; y también con las campañas masivas de vacunación para elevar el nivel de protección contra las formas más graves.

Peruanos reciben la dosis combinada de la vacuna contra el COVID-19 y la influenza en una campaña masiva puerta a puerta, en Lima, Perú, el 21 de junio de 2022.

A pesar de que el coronavirus acaparó los principales titulares, el cólera, la viruela símica, los rebrotes de polio y los adelantos en la lucha contra el VIH, también fueron noticia en estos doce meses.

Ómicron y rebrotes por todo el mundo

La variante Ómicron del virus de COVID-19 fue la responsable de la gran mayoría de los casos de coronavirus este 2022 en el mundo. Esta nueva versión y sus subvariantes se propagaron más rápido que sus predecesoras, fueron capaces de eludir la inmunidad de las vacunas ya creadas.

Sin embargo, los científicos no tardaron en adaptar las fórmulas a las nuevas condiciones y EEUU promovió una campaña masiva de vacunación ante la llegada del invierno. A pesar de eso, el aumento reciente de casos en China preocupa a los especialistas sobre una y más peligrosa versión del virus.

¿Fin de la pandemia?

El presidente de EEUU, Joe Biden, anunció en septiembre que la pandemia de coronavirus, o al menos, lo peor de ella, había terminado. Antes de eso, su gobierno había eliminado las restricciones que todavía quedaban, entre ellas, los requisitos de mascarillas en aviones y las pruebas negativas de COVID-19 para entrar al país.

La Organización Mundial de la Salud (OMS), también admitió que la emergencia tuvo su punto más alto durante 2020 ya estaba pasando y se vislumbraba su fin, pero los recientes reportes de aumento de casos graves "preocupan" a sus directivos.

Viruela Símica o Mpox

Pese a ser endémica en África desde hace décadas, la repentina y "extraordinaria" propagación de esta enfermedad a unos 70 países provocó que la OMS la calificara en julio de emergencia global. La enfermedad se extendió por Estados Unidos y América Latina con una rapidez que sorprendió a los especialistas.

Ante su presencia en las noticias y el estigma asociado, la OMS decidió cambiar el nombre de viruela símica o del mono, a mpox.

Rebrotes de cólera en más de 20 países

Unos 26 países registraron rebrotes de cólera en los primeros nueve meses del año, de acuerdo con la OMS, que advirtió que estos ahora son "mayores y más mortales". La organización también relaciona la reaparición del virus con el cambio climático.

En la región preocupa el caso de Haití, donde el resurgimiento de la enfermedad coincide con niveles sin precedentes de violencia e inseguridad que entorpecen los envíos de ayuda humanitaria y las campañas de vacunación.

Adelantos en la lucha contra el VIH/Sida

Un medicamento nuevo y de larga duración que podría cambiar las reglas del juego para prevenir las infecciones por el VIH fue presentado recientemente. El Cabotegravir es una inyección que se administra una vez cada dos meses.

En los ensayos clínicos, previno mejor la infección que otra opción: una pastilla que se toma una vez al día. Este 2022, las Naciones Unidas llamaron la atención sobre la desigualdad en el mundo y cómo esta perpetúa la presencia del Sida y frenan el progreso para poner fin a la pandemia.

Casos de polio en Nueva York

En julio pasado, autoridades de salud en Nueva York comenzaron a buscar indicios del virus de polio en aguas residuales luego de que en julio se identificara un caso del virus, el primero en Estados Unidos en casi una década.

Para evitar la propagación de la enfermedad, se instó a todos los neoyorquinos que no estén vacunados a hacerlo inmediatamente. La reaparición de la enfermedad sonó las alarmas y trajo a la memoria la epidemia de hace unas décadas atrás. La OMS instaron a las naciones a comprometerse con una nueva estrategia de cinco años para erradicar esta dolencia paralizante.

Fuente: VOA Ciencia y Salud. Disponible en https://bit.ly/3jS2YsU

La OMS continúa vigilando las variantes del SARS-CoV-2 con preocupación por el aumento de casos en China

28 dic. Todos los virus cambian con el paso del tiempo, y también lo hace el SARS-CoV-2, el virus causante de la COVID-19. La mayoría de los cambios tienen escaso o nulo efecto sobre las propiedades del virus, sin embargo, algunos cambios pueden influir sobre algunas de ellas, como por ejemplo su facilidad de propagación, la gravedad de la enfermedad asociada o la eficacia de las vacunas, los medicamentos para el tratamiento u otras medidas de salud pública.

A pesar de tener una vigilancia controlada, la Organización Mundial de la Salud (OMS) alertó a mediados del mes de diciembre del importante incremento de casos de COVID-19 que se está produciendo en China, una situación que hace peligrar el deseado final de la emergencia pandémica en todo el mundo. El país asiático vive una nueva ola de la pandemia y los hospitales de las grandes ciudades vuelven a estar saturados. Además, los expertos creen que en este caso se puede tratar de una variante peligrosa por primera vez en más de un año.

Variantes vigiladas

Hasta la fecha, son cinco las variantes del coronavirus que la OMS ha calificado como preocupantes: Alfa (B.1.1.7, detectada originalmente en Reino Unido), Beta (B.1.351, detectada originalmente en Sudáfrica), P.1 (detectada originalmente en Brasil), Delta (B.1.617.2, detectada originalmente en India) y Ómicron. Debido a la posibilidad de mayor transmisión y generación de enfermedades más graves, la OMS vigila más estrechamente estas variantes, aunque existen otras sobre las que la Organización y la comunidad científica internacional realizan vigilancia, como BA.4, BA.5, BA.2.12.1 y BA.2.75.

El pasado 5 de abril de 2022, la propia Organización mostró su preocupación ante las recombinaciones del virus. Actualmente se vigilan tres: XD, XF y XE, siendo ésta última la que genera mayor preocupación, ya que es el resultado de la combinación de dos subvariantes de Ómicron: BA.1, y BA.2.

Variante Ómicron

Habida cuenta de la transmisión generalizada de la variante preocupante ómicron por todo el planeta y el consiguiente aumento en la diversidad vírica, la OMS ha añadido a su sistema de seguimiento de las variantes una nueva categoría, denominada “linajes de variantes preocupantes bajo vigilancia” (VOC-LUM), con el fin de señalar a las autoridades de salud pública de todo el mundo los linajes de variantes preocupantes que pueden requerir atención y vigilancia prioritarias.

El objetivo principal de esta categoría es investigar si estos pueden suponer una amenaza adicional para la salud pública mundial en comparación con otros virus circulantes. Si se demuestra que alguno de estas subvariantes tienen características distintas en comparación con la variante preocupante original de la que procede, el Grupo Consultivo Técnico sobre la Evolución del Virus SARS-CoV-2 se reunirá y podría recomendar a la OMS que le atribuyera una denominación distinta.

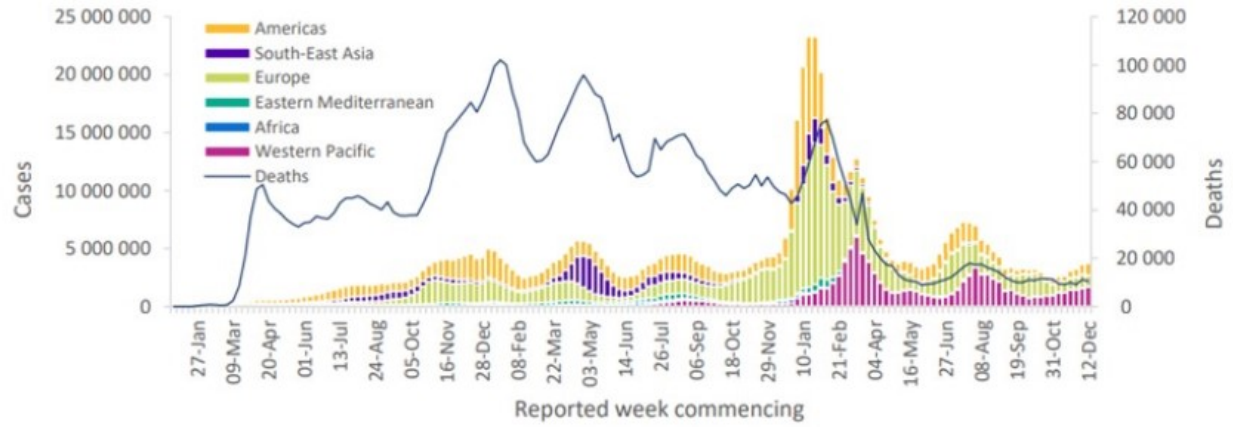
En un comunicado, la OMS explicó, tras la aparición de las recombinaciones, que se debe reducir la transmisión mediante medidas de control establecidas y de eficacia demostrada, así como “previniendo la introducción en poblaciones animales como parte importante de la estrategia mundial para reducir la aparición de mutaciones que tienen consecuencias negativas para la salud pública”.

Actualización de la OMS

En la última actualización epidemiológica del COVID-19, publicada por la OMS en la semana del 22 de diciembre, se extrae que, a nivel mundial, el número de nuevos casos semanales notificados durante la semana del 12 al 18 de diciembre de 2022 fue similar (+3 por ciento) al de la semana anterior, con más de 3,7 millones de nuevos casos notificados.

El número de nuevas muertes semanales fue un 6 por ciento menor que en la semana anterior, con más de 10.400 nuevas muertes. En los últimos 28 días, se recogieron más de 13,7 millones de casos y más de 40.000 nuevas muertes en todo el mundo: un aumento del 36 por ciento en casos notificados y una disminución de muertes del 2 por ciento en comparación con los 28 días anteriores. Hasta el 18 de diciembre de 2022, se han notificado más de 649 millones de casos confirmados y más de 6,6 millones de muertes en todo el mundo.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 18 December 2022**



Gráfica con la situación epidémica (Organización Mundial de la Salud).

A nivel regional, el número de nuevos casos semanales notificados disminuyó en cuatro de las seis regiones de la OMS: Asia Sudoriental (-36 por ciento), África (-29 por ciento), Mediterráneo Oriental (-26 por ciento) y Europa (-16 por ciento); mientras que el número de casos aumentó en dos regiones: Pacífico Occidental (+8 por ciento) y América (+18 por ciento).

El número de muertes semanales notificadas disminuyó o se mantuvo estable en: África (-95 por ciento), Mediterráneo Oriental (-39 por ciento), Europa (-22 por ciento), Asia Sudoriental (-20 por ciento) y América (+3 por ciento); mientras que aumentó en el Pacífico Occidental (+7 por ciento).

Japón, el país con más casos notificados

A nivel de país, el mayor número de nuevos casos semanales se notificó en Japón (1.046.650 casos nuevos; +23 por ciento), la República de Corea (459.811 casos nuevos; +9 por ciento), Estados Unidos (445.424 casos nuevos; -3 por ciento), Francia (341.136 casos nuevos; -20 por ciento) y Brasil (337.810 casos nuevos; +74 por ciento).

En Europa, se notificaron 952.000 casos nuevos, una disminución del 16 por ciento en comparación con la semana anterior. El número de nuevas muertes semanales en la región europea disminuyó en un 22 por ciento como en comparación con la semana anterior, con 2853 nuevas muertes notificadas, siendo Francia, Italia y Rusia los países que más muertes notificaron: 686, 519 y 389 muertes, respectivamente.

Fuente: GACETA MÉDICA. Disponible en https://bit.ly/3WM8z2v

COVID-19: la vacuna argentina recibe apoyo económico y buscará ser aprobada en 2023

29 dic. La "ARVAC Cecilia Grierson" completó la fase I de los ensayos clínicos y la Agencia I+D+i le otorgará 1.100 millones de pesos para realizar las fases II y III.

La ARVAC Cecilia Grierson recibirá un subsidio de 1.100 millones de pesos por parte de la Agencia Nacional de Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación (Agencia I+D+i) parar llevar adelante los ensayos clínicos de las fases II y III de la vacuna desarrollada en conjunto por el CONICET, la Universidad Nacional de San Martín (UNSAM) y el Laboratorio Pablo Cassará. El apoyo económico obtuvo la aprobación del Ministerio de Ciencia, Tecnología e Innovación, del Ministerio de Economía y del propio presidente Alberto Fernández. Se espera que los estudios se realicen durante el primer trimestre de 2023 para que la Administración Nacional de Medicamentos, Alimentos y Tecnología Médica (ANMAT) pueda autorizar la vacuna durante el año próximo.

Fernando Peirano, presidente de la Agencia I+D+i, señaló: "Cuando las políticas públicas están presentes podemos desplegar todo nuestro potencial latente. Este es un gobierno que elige creer en el potencial de nuestras investigadoras e investigadores, que elige confiar en la capacidad argentina para desarrollar tecnologías innovadoras, que elige apoyar a la ciencia como camino hacia un desarrollo inclusivo y federal".

Para los nuevos ensayos clínicos correspondientes a las fases II y III se desarrolló una nueva versión de la vacuna que incluye el antígeno en su variante Ómicron. De esta manera, permitirá evaluar una versión bivalente de la ARVAC que protegerá contra las sub-variantes BA.4 y BA.5.

Además, el estudio clínico se realizará en más de diez centros de investigación de todo el país. Esto aumentará la velocidad de implementación para obtener los resultados con mayor rapidez.

Fase I

En octubre se presentaron los resultados parciales de la fase I, etapa donde se evalúa la seguridad de la vacuna en una cantidad acotada de pacientes. El estudio se realizó con 80 personas sanas previamente vacunadas contra la Covid-19 y demostró ser segura y muy eficaz. Una dosis de refuerzo de ARVAC incrementa hasta 30 veces los anticuerpos neutralizantes contra las variantes del virus Ómicron, Gamma y Wuhan.

La fórmula ARVAC

Se basa en la tecnología de proteína recombinante, una fórmula segura y conocida que se utiliza desde hace décadas para fabricar la vacuna contra Hepatitis B que se da a niños recién nacidos, o contra HPV que se aplica a adolescentes. Está compuesta por un antígeno recombinante purificado (la región de la proteína spike que une al receptor ACE 2 llamado RBD versión gamma) con un adyuvante clásico como el gel de albúmina.

Esta vacuna se puede almacenar y transportar refrigerada (2-8 °C) y está diseñada para que en cuatro meses pueda actualizarse su principio activo para hacer frente a nuevas variantes del virus que escapen a la respuesta inmunológica de la población.

Fuente: EL DESTAPE. Disponible en https://bit.ly/3IkAYbN

Novavax anuncia ensayo para vacuna combinada de COVID-19 e influenza

30 dic. Novavax, una empresa de biotecnología dedicada a desarrollar y comercializar vacunas de última generación para enfermedades infecciosas graves, ha anunciado hoy el inicio de la Fase 2 para su vacuna combinada contra la COVID-19 e Influenza (*COVID-19-Influenza Combination*, CIC por sus siglas en inglés).

El ensayo de confirmación de dosis evaluará la seguridad y eficacia (inmunogenicidad) de diferentes formulaciones de la vacuna combinada contra COVID-19 e Influenza (CIC) candidatas a vacuna contra la influenza en adultos de 50 a 80 años.

"Nos alienta el inicio de este ensayo dados los resultados positivos compartidos a principios de este año de nuestro ensayo de fase 1/2, el primero de su tipo en evaluar una vacuna combinada contra la COVID-19 y la influenza", dijo Stanley C. Erck , Presidente y director ejecutivo de Novavax en un comunicado de prensa.

"Creemos que, al igual que la influenza, la COVID-19 también será estacional y que hay espacio en el mercado para nuevas alternativas que brinden una mejor protección contra el impacto de la influenza, particularmente en los adultos mayores, y para explorar el potencial de combinar esto con protección contra la COVID-19".

De acuerdo con el comunicado oficial de Novavax, el ensayo, aleatorizado y ciego a los participantes, evaluará una combinación de la vacuna COVID-19 basada en la proteína recombinante NVX-CoV2373, candidato a vacuna antigripal tetravalente y el adyuvante patentado Matrix-M basado en saponina.

Los objetivos primarios y secundarios del estudio son evaluar la seguridad, la tolerabilidad además de las respuestas inmunitarias a diversas formulaciones de las vacunas candidatas CIC y contra la gripe. El ensayo de confirmación de dosis de fase 2 se llevará a cabo en dos partes y se espera inscribir a un total de aproximadamente 2.300 participantes en varios centros de Australia y Nueva Zelanda.

Los resultados iniciales del ensayo se esperan para mediados de 2023. Estos datos servirán de base para los ensayos de fase 3 de las vacunas candidatas contra la gripe sola y combinada con COVID-19.

Fuente: Saludiario. Disponible en https://bit.ly/3IkeqrC

Cuba logró en 2022 control efectivo de la COVID-19

31 dic. Desde la segunda quincena de agosto nadie fallece en Cuba a consecuencia del virus SARS-CoV-2, causante de la Covid-19, un dato probatorio de que se logró en 2022 un efectivo control sobre la enfermedad.

La cifra de decesos se mantuvo hasta el 29 de diciembre en ocho mil 530 desde que fue declarada en marzo de 2020 la pandemia en el país.

Aunque los reportes diarios del Ministerio de Salud Pública (MINSAP) en diciembre evidencian un ligero aumento de casos, siempre menor con respecto a otros países, la cartera adoptó medidas para evitar males mayores teniendo en cuenta las lecciones que obligó a aprender el pico de la pandemia.

El promedio de contagiados por día, de noviembre a diciembre, fue de 3,7 a 19,1, precisó el MINSAP, que instruyó el uso del nasobuco para el ingreso a centros comerciales, ferias de venta, transporte público y espectáculos en cines, teatros y a todos los que se realicen en espacios cerrados.

También recomendó acudir, de manera inmediata, a los servicios de salud ante la aparición de síntomas respiratorios, así como adoptar las medidas de distanciamiento y protección en el hogar cuando algún miembro de la familia los presente.

Lavarse permanentemente las manos, no asistir a espacios sociales si se tienen síntomas como los provocados por el virus; extremar las medidas de vigilancia en los hogares de ancianos, casas de abuelos, escuelas y otras instituciones que tengan alta concentración de personas, así como el uso en grupos de riesgo de medicamentos como el Nasalferon, son otros pasos por seguir.

El MINSAP también indicó la aplicación de nuevas dosis de refuerzo en los esquemas de vacunación.

Los mayores niveles de transmisión, durante diciembre, se presentaron en las provincias de La Habana, Matanzas, Guantánamo y Holguín, y en esos territorios están concentrados el 62,4 por ciento de los casos diagnosticados en todo el país.

En el presente año fallecieron 207 pacientes para una letalidad de 0,14 por ciento.

Otro dato que sustenta la tesis del control de la dolencia, es que durante varias semanas pudo constatarse una mínima o nula presencia de pacientes asistidos en terapia intensiva.

Según los modelos matemáticos para la realización de pronósticos, el escenario en cuanto a la Covid-19 es favorable, pues todas las provincias mantienen una tendencia al control.

Las autoridades de Salud informaron que hasta el 26 de diciembre el 90,3 por ciento de la población, cuenta con el esquema completo de vacunación contra la COVID-19.

El archipiélago acumula así 42 millones 678 mil 834 dosis administradas de las vacunas cubanas Soberana 02, Soberana Plus y Abdala y, además, ocho millones 672 mil 700 personas recibieron la dosis de refuerzo.

Los inmunógenos de Cuba son seguros y sin efectos adversos graves, según los ensayos clínicos exitosos y la vacunación a distintos segmentos de la población.

La estrategia se concreta de manera escalonada, dirigida a lograr mayor protección ante nuevas variantes del coronavirus SARS-CoV-2.

Según la Oficina Nacional de Estadística e Información de Cuba, al cierre de marzo del año en curso, la población era de 11 millones 105 mil 814 personas.

Por su parte, el Centro de Ingeniería Genética y Biotecnología de Cuba (CIGB) ratificó que la vacuna antiCovid-19 Abdala demostró su seguridad y eficacia en la lucha contra la pandemia, es bien tolerada y con una baja tasa de eventos adversos leves: por debajo de 0.07 por cada 100 mil personas.

Abdala es el primer inmunógeno antiCovid-19 de Latinoamérica y el Caribe y cuenta desde julio de 2021 con la autorización de empleo de emergencia de la entidad regulatoria nacional, tras demostrar una eficacia de un 92,28 por ciento en la prevención de la enfermedad sintomática y una efectividad del 90 por ciento en pacientes graves afectados por el coronavirus SARS-CoV-2.

Asimismo, mostró un aumento del 99,15 por ciento de anticuerpos en voluntarios de tres a 11 años y del 98,28 por ciento en los de 12 a 18.

El CIGB, creador de la vacuna, confirmó que el aumento de los títulos de anticuerpos fue de cuatro veces o más a partir de la primera dosis del fármaco en esos grupos poblacionales.

La investigadora principal de esos estudios, Sonia Resik, destacó que más del 80 por ciento de los eventos adversos reportados en menores fueron leves y el resto de los indicadores eran comparables con los datos obtenidos en adultos, hecho que ratificó su efectividad.

Por otra parte, la vacuna Abdala, con el paso del tiempo, mantiene su seguridad, efectividad y la respuesta inmune ante la Covid-19, lo que ratifica su idoneidad para dosis de refuerzo.

Su respuesta inmune fue superior en personas ya vacunadas con tres inyecciones de ese fármaco y en otras con Sinopharm (China) y Sputnik (Rusia).

para combatir la pandemia de la Covid-19, Cuba cuenta también con los inmunógenos Soberana 02 y Soberana Plus, del Instituto Finlay de Vacunas, y dos candidatos vacunales (Soberana 01 y Mambisa) en fase de ensayos clínicos con resultados importantes, según fuentes oficiales.

Países como Venezuela, Nicaragua, México, Irán y Vietnam administran las vacunas cubanas en su población.

Fuente: Prensa Latina. Disponible en https://bit.ly/3X2iIlj

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20221217:20221231 as the publication date 68 records*

1.WO/2022/262051INTERNET OF THINGS-BASED ANTI-COUNTERFEITING VACCINE BRACKET FOR INTELLIGENT WHOLE-PROCESS TEMPERATURE AND ULTRAVIOLET MONITORING
WO - 22.12.2022
Clasificación Internacional B65D 25/10 Nº de solicitud PCT/CN2021/107055 Solicitante SHANGHAI ONLYU TECHNOLOGY CO., LTD Inventor/a SHI, Wei
An Internet of things-based anti-counterfeiting vaccine bracket for intelligent whole-process temperature and ultraviolet monitoring. A left housing (1) is provided with several vaccine bottle (7.3) loading positions, and the back of each vaccine bottle (7.3) loading position is provided with a vaccine bottle fixing slot mounting through hole (7.1); a vaccine bottle fixing snap (7) matches vaccine bottle fixing slot mounting holes (7.1) on the left housing (1); the right housing (2) is provided with an outer shell and circuit board mounting positioning columns (19); a circuit board (24) is provided between the left housing (1) and the right housing (2), and the circuit board (24) is provided with several position inductive switches (10) to correspond to the vaccine bottle (7.3) loading positions. The attributes of a temperature sensing sensor of the bracket can be compiled according to transportation and storage temperature characteristics and inclusiveness of a loaded vaccine; a vaccine temperature data record provided by the bracket itself can prove that although the temperature of the vaccine exceeds transportation and storage temperature, beyond range and duration do not exceed the national regulations, and the vaccine can still be used, thereby reducing the loss of vaccine caused by a failure of an external device.

2.20220409723NOVEL VACCINE ADJUVANT COMPOSITION INCLUDING BAVACHIN
US - 29.12.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17778368 Solicitante KOREA INSTITUTE OF ORIENTAL MEDICINE Inventor/a Young Hee JIN
Provided are a vaccine adjuvant composition including, as an active ingredient, bavachin capable of improving antibody titer and enhancing cellular immunity and humoral immunity when administered together with an antigen, a vaccine preparation including the bavachin and an antigen, a method of promoting an immune response, the method including the step of administering the vaccine adjuvant composition to a subject together with a vaccine composition or before and after administration of the vaccine composition, and a vaccine adjuvant composition for promoting an immune response, the vaccine adjuvant composition including the bavachin. Since the vaccine adjuvant composition of the present invention includes bavachin isolated from an extract of *Psoralea corylifolia*, of which safety has been

secured, it may exhibit safety and may enhance both the humoral and cellular immune responses as well as the titer of antibodies generated by antigens.

3.WO/2022/263451PEPTIDES DERIVED FROM THE SPIKE PROTEIN OF SARS-COV-2 AND USES THEREOF FOR DIAGNOSIS AND VACCINE PURPOSES
WO - 22.12.2022
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/EP2022/066184 Solicitante INSERM (INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE) Inventor/a DESPRES, Philippe
Emerging highly pathogenic SARS-CoV-2 has caused the recent worldwide pandemic named COVID-19. Considerable efforts have been made for the development of effective vaccine strategies against COVID-19. Giving that the spike S protein plays a crucial role in eliciting the immune response during COVID-19 disease, the S protein has been the predominant candidate for the design of efficient vaccine candidates against SARS-CoV-2. The purpose of the inventors was to evaluate the antigenic reactivity of different synthetic peptides representing potential B-cell epitopes located in the S protein in relation to a BNT162b2 recipient serum. They identified the residues S616-644 and S1138-1169 as two potential B-cell epitopes in the S protein. Whereas BNT162b2 recipient serum as well as COVID19 donor serum were capable of reacting with a synthetic peptide representing the residues S1138-1169, a synthetic peptide representing the residues S616-644 showed immunoreactivity only with a BNT162b2 recipient serum. In conclusion, the inventors showed that immunization with encapsulated mRNA vaccine BNT162b2 expressing a stabilized prefusion SARS-CoV-2 protein results in production of antibodies directed against the two B-cell epitopes that compose the residues S616-644 and S1138-1169. The synthetic peptides representing the residues S616-644 and S1138-1169 have ability to react as antibody epitopes in relation to a BNT162b2 recipient serum and thus can be used for diagnostic and vaccine purposes.

4.WO/2022/268722VACCINE COMPOSITION COMPRISING ENCODED ADJUVANT
WO - 29.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2022/066733 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.

5.20220401538THERAPEUTIC MRNA VACCINE FOR MALIGNANCIES
US - 22.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17835071 Solicitante ONCOCINE LLC Inventor/a Patrick IVERSEN

Described herein is a method for cancer immunotherapy by administering to a subject an mRNA vaccine designed to express the carbonyl terminal segment of human chorionic gonadotropin (hCG). Also described an improved adjuvant by co-administration of an antisense IL-10 molecule to shift the vaccine immune response to enhanced T-cell responses to hCG. Other embodiments relate to devices and methods for improved delivery of the mRNA vaccine and adjuvant. The intended use involves repeated administration of the vaccine components to subjects over an interval of several months in a repeated boosting strategy.

6.20220401548SINDBIS VIRUS DNA-BASED VACCINE
US - 22.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17843425 Solicitante National Yang Ming Chiao Tung University Inventor/a Chia-Lin HSU
Provided is a vaccine composition including a recombinant DNA vaccine against a pathogen. The recombinant DNA vaccine includes an expression cassette operably linked to a promoter, and the expression cassette encodes a non-structural protein of a Sindbis virus and an antigenic protein of the pathogen. Also provided is a method of producing a protective immune response against a pathogen in a subject in need thereof by administering the vaccine composition to the subject.

7.WO/2022/266094MECHANISMS AND PREDICTORS OF ADJUVANTICITY AND ANTIBODY DURABILITY
WO - 22.12.2022
Clasificación Internacional A61K 49/00 Nº de solicitud PCT/US2022/033428 Solicitante THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY Inventor/a PULENDRAN, Bali
Methods are provided herein for vaccine development, characterization and validation. Using the response signatures disclosed herein, methods are provided for optimization, selection and benchmarking of vaccines, including adjuvants for vaccines. The methods include a prediction of response durability, e.g. the longevity of an antibody response, for a candidate vaccine or vaccine adjuvant; and assessment of similarity to a benchmark reference vaccine.

8.0002786222MULTICOMPONENT VACCINE FOR IMMUNOPROPHYLAXIS AND IMMUNOTHERAPY OF DISEASES CAUSED BY OPPORTUNISTIC PATHOGENS
RU - 19.12.2022
Clasificación Internacional A61K 38/00 Nº de solicitud 2022106171 Solicitante Inventor/a Курбатова Екатерина Алексеевна (RU)
FIELD: medical immunology. SUBSTANCE: invention relates to the field of medical immunology, to the study of the molecular-cellular mechanism of action of an immunobiological drug for the prevention and treatment of chronic inflammatory diseases of bacterial and viral etiology. The use of a multicomponent vaccine consisting of water-soluble antigens isolated from strains of Klebsiella pneumoniae, Proteus vulgaris, Escherichia coli and Staphylococcus aureus is proposed. The vaccine contains pattern-associated molecular structures of microorganisms, which are ligands of Toll-like receptors to cause in experimental animals, when administered enterally, an increase in the content of cells expressing TLR 4 from 1.5 to 14.0%; TLR 9 2.2 to 15.5% followed by production of IL-1β 15.0 to 18.0 pg/ml, IL-6 120 to 140 pg/ml, IL-12 10.0 to 12 .0 pg/ml; when administered subcutaneously - an increase in the content of TLR 2 from 3.0 to 11.0%; TLR 4 from 1.2 to 11.6%; TLR 9 4.0 to 13.2% followed by production of IL-1β 65 to 68 pg/ml, IL-6 190 to 220 pg/ml, IL-12 35.0 to 40.0 pg/ml; IFNγ from 34.0 to 38.0 pg/ml, and stimulating the formation of specific antibodies OP450 when diluted serum 1:3200 to the antigen of Escherichia coli 2.2-2.4 c.u.; to the Klebsiella antigen 1.5-1.9 c.u.; to the proteus antigen 1.8-2.1 c.u.; to the antigen of staphylococcus 1.5-1.8 c.u. EFFECT: as a result of activation of innate and adaptive immunity effectors,

the multicomponent vaccine protects experimental animals from bacterial and viral infections and explains the therapeutic and prophylactic effect of its application. 1 cl, 9 tbl, 2 ex

9.20220409708SMALL LIPID NANOPARTICLES, AND CANCER VACCINE INCLUDING SAME
US - 29.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17773658 Solicitante KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY Inventor/a Sang Yong JON
The present invention relates to small lipid nanoparticles, a small lipid nanoparticle (SLNP)-based nanovaccine platform including same, and a combination treatment regimen with an immune checkpoint inhibitor. Lipid nanoparticies according to the present invention can easily deliver antigens and anionic drugs into cells, and exhibit strong anti-tumor effects when loaded with tumor-associated antigens. Particularly, a cancer vaccine kit according to the present invention including lipid nanoparticles according to the present invention as a first vaccine composition and lipid nanoparticles and an immune checkpoint inhibitor as a second vaccine composition can be used to effectively suppress tumor regrowth and recurrence triggered by the occurrence of immunosuppression against a cancer nanovaccine.

10.4103722SCHNELLE IMPFPLATTFORM
EP - 21.12.2022
Clasificación Internacional C12N 15/85 Nº de solicitud 21753822 Solicitante CYTONUS THERAPEUTICS INC Inventor/a MOOMIAIE REMO
Provided are methods of making and delivering vaccine compositions using an enucleated cell-based platform. Methods of clearing pathogenic infections in a subject using the enucleated cell-based platform is also provided. Such enucleated cell-based platform reduces the vaccine development timeline as compared with conventional biological vaccines, and improves vaccine efficacy.

11.WO/2022/263600METHOD OF TAGGING FISH AND OTHER ANIMALS
WO - 22.12.2022
Clasificación Internacional C12Q 1/6858 Nº de solicitud PCT/EP2022/066495 Solicitante SALMOTRACE AS Inventor/a HAUGSE, Dag
The present invention relates to a method of tagging a non-human animal, particularly fish, said method comprising administering to said animal a tag nucleic acid molecule, wherein the tag nucleic acid molecule: (i) comprises an ID sequence which is unique to the tag, which is non-coding and/or cannot be transcribed, and which may be distinguished from the ID sequences of other tag molecules, and (ii) is detectable in or on said animal, or in a body tissue or fluid sample from said animal. The tag may be used to identify the animal, for example in the context of tracking and tracing the animal. The tag may be administered to the animal in conjunction with a vaccine component, which may be provided as part of the tag nucleic acid molecule, or separately. Also provided herein are methods of tagging and vaccinating non-human animals, and combination products comprising a vaccine composition and a tag nucleic acid molecule, as well as apparatus for administering the tag nucleic acid molecule together with a vaccine.

12.WO/2022/268916PAN-CORONAVIRUS PEPTIDE VACCINE
WO - 29.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/067082 Solicitante OSE IMMUNOTHERAPEUTICS Inventor/a GIRAULT, Isabelle
The present invention relates to a vaccine composition suitable for preventing or treating an infection by a coronavirus, said vaccine being adapted to provide a protection against several betacoronaviruses and optionally alphacoronaviruses.

13.20220401543VACCINE COMPOSITION AGAINST STREPTOCOCCUS SUIS INFECTION
US - 22.12.2022

Clasificación Internacional A61K 39/09 Nº de solicitud 17815221 Solicitante CEVA SANTE ANIMALE S.A. Inventor/a Jana SEELE
Described is a vaccine composition comprising an effective amount of at least one polypeptide selected from the group of IdeSsuis, rIdeSsuis, an analogue or a fragment thereof, or a polynucleotide encoding the same. This vaccine composition is used in the prophylactic, metaphylactic or therapeutic treatment of a *Streptococcus suis* infections in pigs or humans.

14.0002786213METHOD FOR DIFFERENTIATING THE GENOME OF THE NISHI VACCINE STRAIN FROM FIELD ISOLATES OF SHEEP POX VIRUS BY REAL-TIME POLYMERASE CHAIN REACTION WITH HIGH-RESOLUTION PEAK ANALYSIS
RU - 19.12.2022
Clasificación Internacional A61K 39/395 Nº de solicitud 2022122746 Solicitante Inventor/a Спрыгин Александр Владимирович (RU)
FIELD: biotechnology. SUBSTANCE: invention relates to biotechnology, to molecular diagnostic tools, namely to differentiation of the genome of the NISHI vaccine strain from field isolates of sheep pox virus by real-time polymerase chain reaction with high-resolution peak analysis. The developed method is characterized by an analytical specificity of 100%. In the 95% confidence interval, the diagnostic sensitivity for this method is 97.49-100.00%, the diagnostic specificity is 97.20-100.00%. EFFECT: invention provides the ability to differentiate the genome of the NISHI vaccine strain from field isolates of sheep pox virus in a short period of time (no more than 3 hours) by real-time polymerase chain reaction with high-resolution peak analysis. 3 cl, 4 dwg, 7 tbl, 5 ex

15.WO/2022/266314A SYSTEM AND METHOD FOR MONITORING THE EFFECT OF A HERPESVIRUS-BASED VACCINE IN AN ANIMAL POPULATION
WO - 22.12.2022
Clasificación Internacional C12Q 1/70 Nº de solicitud PCT/US2022/033779 Solicitante INTERVET INC. Inventor/a WANG, Yun-Ting
The presently disclosed subject matter aims to a system and method directed to monitor the effect of a herpesvirus-based vaccine in an animal population. The system and method include a processing circuitry configured to: obtain one or more tissue samples of one or more respective animals of the animal population; sequence each of the tissue samples; calculate a score associated with the animal population based on the sequence of the tissue samples; compare the score to a benchmark determined from a dataset containing data associated with the effect of the herpesvirus-based vaccine in a plurality of animal populations; and, execute an action in response to the comparison to the benchmark.

16.WO/2022/270953SALMONELLA TYPHIMURIUM STRAIN HAVING YJEK GENE DELETED THEREFROM AND SALMONELLA VACCINE COMPOSITION COMPRISING SAME
WO - 29.12.2022
Clasificación Internacional C12N 15/74 Nº de solicitud PCT/KR2022/008979 Solicitante INNOVAC CO. Inventor/a HAHN, Tae Wook
The present invention relates to a Salmonella typhimurium strain having YjeK gene deleted therefrom and to uses thereof. More specifically, the present invention relates to: a novel Salmonella typhimurium strain; and a vaccine composition, an immunogenic composition, and a feed composition comprising same. It was confirmed that the Salmonella typhimurium strain having YjeK gene deleted therefrom according to the present invention can effectively prevent Salmonella infection, thereby remarkably increasing a survival rate of an individual. This means that when the Salmonella typhimurium strain having YjeK gene deleted therefrom of the present invention is used as a vaccine, diseases related to Salmonella infection can be effectively prevented such that the present invention can be used in various ways in the field of livestock disease control.

17.WO/2022/269003MVA-BASED VACCINE EXPRESSING A PREFUSION-STABILIZED SARS-CoV-2 S PROTEIN
WO - 29.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/067271 Solicitante CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS 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.

18.WO/2022/269343MULTIVALENT VACCINE FOR PROTECTION AGAINST MULTIPLE VIRUS INFECTION
WO - 29.12.2022
Clasificación Internacional A61K 39/145 Nº de solicitud PCT/IB2022/000325 Solicitante RUENHUEI BIOPHARMACEUTICALS INC. Inventor/a CHEN, Juine-Ruey
The present invention provides a multivalent vaccine for protection against at least one of the various strains of influenza as well as at least one of the various strains of coronavirus, including but not limited to severe acute respiratory syndrome coronavirus 2 (SARS CoV 2). In an embodiment, the multivalent vaccine of the present invention comprises a therapeutically effective amount of recombinant chimeric protein comprising a receptor-interacting domain derived from any variant of the coronavirus and a stem region derived from conservative region of hemagglutinin (HA) of any variant of influenza virus.

19.WO/2022/272275COMBINATIONS OF VACCINES AND NEUTRALIZING ANTIBODIES FOR TREATING HUMAN IMMUNODEFICIENCY VIRUS INFECTION IN SUBJECTS UNDERGOING ANTIRETROVIRAL TREATMENT
WO - 29.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/073101 Solicitante JANSSEN VACCINES & PREVENTION B.V. Inventor/a BAROUCH, Dan, H.
Methods for inducing an immune response against Human Immunodeficiency Virus (HIV) in HIV-infected subjects undergoing antiretroviral therapy (ART) are described. The methods involve initial administration of an adenovirus vector vaccine and subsequent administration of a poxvirus vector vaccine, followed by administration of anti-HIV broadly neutralizing antibodies (bNAb).

20.4103226INTRANASALE MRNA-IMPFSTOFFE
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21705192 Solicitante ETHERNA IMMUNOTHERAPIES NV Inventor/a TIEST WIM
The present invention in general to intranasal mRNA vaccines, more in particular comprising one or more immunostimulatory molecules, one or more pathogenic antigens and a specifically designed delivery system. Specifically said immunostimulatory molecules and pathogenic antigens are provided for in the form of mRNA molecules encoding such molecules and antigen; more in particular mRNA molecules encoding for CD40L, caTLR4 and/or CD70 in combination with one or more mRNA molecules encoding a bacterial, viral or fungal antigen. Specifically said, the delivery is a mixture of chemical compounds that allow protection and deposition of the vaccine and targeting to the antigen presenting cells in the nose. In particular, present invention is well suited for development of a rapid response vaccine in an outbreak setting.

21.WO/2022/270624ANTIBODY-INDUCING POLYPEPTIDE AND VACCINE
WO - 29.12.2022
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/JP2022/025330 Solicitante WATANABE Yoshihiro Inventor/a WATANABE Yoshihiro
Provided are: an antibody-inducing polypeptide that is useful for preventing or treating SARS-CoV-2 infections in a subject; and a vaccine including the antibody-inducing polypeptide. This polypeptide has antibody-inducing ability and is selected from a group of polypeptides described in (a)-(f): (a) polypeptides having 7 or more consecutive amino acid residues located in a region at position 336-361, position 406-432, or position 446-480 in SEQ ID NO. 1; (b) polypeptides having an amino acid sequence that has a sequence identity of 80% or more with respect to the amino acid sequence of any one of the polypeptides described in (a); (c) polypeptides each including a polypeptide described in (a) or (b) as a partial sequence but not including a region other than said partial sequence in SEQ ID NO. 1 ; (d) polypeptides having 10 or more consecutive amino acid residues located in a region at position 1144-1161 or position 1174-1202 of SEQ ID NO. 1; (e) polypeptides having an amino acid sequence that has a sequence identity of 80% or more with respect to the amino acid sequence of any one of the polypeptides described in (d); and (f) polypeptides each including a polypeptide described in (d) or (e) as a partial sequence but not including a region other than said partial sequence in SEQ ID NO. 1.

22.20220401555NUCLEIC ACIDS COMPRISING FORMULA (NuGlXmGnNv)a AND DERIVATIVES THEREOF AS IMMUNOSTIMULATING AGENT/ADJUVANT
US - 22.12.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17809680 Solicitante CureVac AG Inventor/a Thomas KRAMPS
The present invention relates to nucleic acids of the general formula (I): $(N_uG_lX_mG_nN_v)_a$ and derivatives thereof as an immunostimulating agent/adjuvant and to compositions containing same, optionally comprising an additional adjuvant. The present invention furthermore relates to a pharmaceutical composition or to a vaccine, each containing nucleic acids of formula (I) above and/or derivatives thereof as an immunostimulating agent, and optionally at least one additional pharmaceutically active component, e.g. an antigenic agent. The present invention relates likewise to the use of the pharmaceutical composition or of the vaccine for the treatment of cancer diseases, infectious diseases, allergies and autoimmune diseases etc. Likewise, the present invention includes the use of nucleic acids of the general formula (I): $(N_uG_lX_mG_nN_v)_a$ and/or derivatives thereof for the preparation of a pharmaceutical composition for the treatment of such diseases.

23.20220402977SELF-ASSEMBLING VIRAL SPIKE-EABR NANOPARTICLES
US - 22.12.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17835751 Solicitante California Institute of Technology Inventor/a Magnus AG. Hoffmann
Disclosed herein include methods, compositions, and kits suitable for use in vaccination. There are provided, in some embodiments, nucleic acid compositions (e.g., mRNA vaccine, DNA vaccine) comprising a polynucleotide encoding a fusion protein. The fusion protein can comprise an antigenic polypeptide (AP) and an endosomal sorting complex required for transport (ESCRT)-recruiting domain (ERD). A plurality of fusion proteins can be capable of self-assembling into an enveloped nanoparticle (ENP) secreted from a cell in which the fusion proteins are expressed. There are provided, in some embodiments, populations of ENPs.

24.20220401549NOVEL PRIME-BOOST INFLUENZA VACCINE
US - 22.12.2022

Clasificación Internacional A61K 39/145 Nº de solicitud 17787560 Solicitante VIVALDI BIOSCIENCES INC. Inventor/a Thomas MUSTER
The invention relates generally to the field of influenza vaccination, specifically to a two-component vaccine comprising influenza virus strains with native hemagglutinin (HA) and lacking the functional NS gene (delNSI influenza), for use in the vaccination of a subject, wherein a priming composition, comprising one, two or three delNSI influenza virus strains selected from group 1 influenza A virus, group 2 influenza A virus, or group 3, consisting of influenza B virus, is formulated for prime-administration prior to a boosting composition, comprising one, two or three delNSI influenza virus strains of the same group as in the priming composition but differing antigenically in the HA head, formulated for boost-administration. Further, a kit comprising said two-components and its use for preventing influenza virus infection is provided.

25.20220401554USE OF MEMBRANE INHIBITORS TO ENHANCE VACCINE DEVELOPMENT AGAINST ENVELOPED VIRUSES
US - 22.12.2022
Clasificación Internacional A61K 39/29 Nº de solicitud 17774632 Solicitante CORNELL UNIVERSITY Inventor/a Hector AGUILAR-CARRENO
The present application relates to method of vaccinating a subject against infection by an enveloped virus. The method includes providing a compound of the Formula (I) as described herein, and contacting the compound of Formula (I) with an isolated enveloped virus, having a membrane, to inactivate the membrane of the isolated enveloped virus. The subject is then treated with the enveloped virus having an inactivated membrane to vaccinate the subject against the enveloped virus. Further disclosed is an ex vivo vaccine composition including the compound of Formula (I) and an enveloped virus.

26.WO/2022/261953SAFETY VACCINE INJECTION SYRINGE
WO - 22.12.2022
Clasificación Internacional A61M 5/32 Nº de solicitud PCT/CN2021/100974 Solicitante WANG, Chi-Yang Inventor/a WANG, Chi-Yang
A safety vaccine injection syringe, comprising an operating member (1) and an outer sleeve member (2), wherein the operating member (1) is of a cylindrical structure, with one end of the operating member (1) being provided with two elastic pressing components (13), and an end face of the other end of the operating member (1) being provided with an accommodation recess (111); the outer sleeve member (2) is sleeved over an outer edge of the operating member (1); and the outer sleeve member (2) is provided with two compression portions (23) overlapped on the pressing components (13), and is further provided, on the surface that faces the inside of the outer sleeve member (2), with an elastic positioning portion (24) for clamping a protrusion block (241).

27.4105228SARS-COV-2-ANTIGENPOLYPEPTID, REKOMBINANTES ADENO-ASSOZIIERTES VIRUS DAVON UND ANWENDUNG BEI DER HERSTELLUNG EINES IMPFSTOFFS
EP - 21.12.2022
Clasificación Internacional C07K 14/165 Nº de solicitud 20891416 Solicitante HENGDA BIOMEDICAL TECH CO LTD Inventor/a ZHOU ZEXIN
Disclosed are a SARS-COV-2 antigen polypeptide, its recombinant adeno-associated virus (rAAV), and its use in preparing a vaccine. A sequence of the antigen polypeptide is shown in SEQ ID NO.1 and SEQ ID NO.2. A method for preparing the recombinant adeno-associated virus comprises co-incubating pHelper, pRep2Cap5, and an expression vector, transfecting a cell in the presence of polyethyleneimine as a transfection reagent; culturing the cell, then collecting the cell by centrifugation, performing lysis and purification to obtain a purified liquid comprising the recombinant adeno-associated virus. The rAAV is delivered and expressed in vivo to produce a fusion antigen polypeptide, induces the production of serum

neutralizing antibodies, which have a neutralizing titer to the novel SARS-COV-2 coronavirus and are expressed continuously; the rAAV composition can be used to immunize humans against the novel coronavirus pneumonia COVID-19.

28.4103228NUKLEINSÄUREIMPFSTOFF GEGEN DAS SARS-COV-2-CORONAVIRUS
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21709890 Solicitante PASTEUR INSTITUT Inventor/a SIMON-LORIERE ETIENNE
The invention relates to an immunogenic or vaccine composition against the 2019 novel coronavirus (SARS-CoV-2), comprising a nucleic acid construct encoding a SARS-CoV-2 coronavirus Spike (S) protein antigen or a fragment thereof comprising the receptor-binding domain, wherein the nucleic acid construct sequence is codon-optimized for expression in human.

29.20220401550NUCLEIC ACID VACCINE AGAINST THE SARS-CoV-2 CORONAVIRUS
US - 22.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17819187 Solicitante INSTITIUT PASTEUR Inventor/a Etienne SIMON-LORIERE
The invention relates to an immunogenic or vaccine composition against the 2019 novel coronavirus (SARS-CoV-2), comprising a nucleic acid construct encoding a SARS-CoV-2 coronavirus Spike (S) protein antigen or a fragment thereof comprising the receptor-binding domain, wherein the nucleic acid construct sequence is codon-optimized for expression in human.

30.4103225IMPFSTOFF UND VERFAHREN ZUM DETEKTIEREN UND VORBEUGEN VON FILARIASIS
EP - 21.12.2022
Clasificación Internacional A61K 39/002 Nº de solicitud 21710733 Solicitante UNIV ILLINOIS Inventor/a KALYANASUNDARAM RAMASWAMY
The present invention is a multivalent immunogenic composition for immunizing an animal against filariasis. In some embodiments, the antigens of the multivalent immunogenic composition are protein-based, DNA-based, or a combination thereof. This invention also provides a method and kit for detecting a filarial nematode and determining vaccine efficacy.

31.11529400Personalized immunotherapy against several neuronal and brain tumors
US - 20.12.2022
Clasificación Internacional C07K 14/47 Nº de solicitud 17852206 Solicitante Immatics Biotechnologies GmbH Inventor/a Sabrina Kuttruff-Coqui
The present invention relates to peptides, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated cytotoxic T cell (CTL) peptide epitopes, alone or in combination with other tumor-associated peptides that serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses. The present invention relates to peptide sequences and their variants derived from HLA class I and class II molecules of human tumor cells that can be used in vaccine compositions for eliciting anti-tumor immune responses.

32.WO/2022/262142RECOMBINANT SARS-COV-2 RBD TRIPOLYMER PROTEIN VACCINE CAPABLE OF GENERATING BROAD-SPECTRUM CROSS-NEUTRALIZATION ACTIVITY, PREPARATION METHOD THEREFOR, AND APPLICATION THEREOF
WO - 22.12.2022
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2021/120447 Solicitante NATIONAL VACCINE AND SERUM INSTITUTE(NVSI) Inventor/a LI, Qiming
Provided is a recombinant RBD trimer protein capable of simultaneously generating cross neutralization activity aiming at multiple SARS-CoV-2 epidemic strains. The trimer protein is composed of subunits of

three novel coronavirus S protein RBD regions, and the amino acid sequences of the three SARS-CoV-2 RBD regions are the same or at least one is different. When the amino acid sequences of the three SARS-CoV-2 RBD regions are the same, the amino acid sequences are the amino acid sequences shown as SEQ ID No.2 or SEQ ID No.3, or sequences having 95% or more of homology with the amino acid sequences shown as SEQ ID No.2 or SEQ ID No.3.

33.20220409540NUCLEIC ACID LIPID PARTICLE VACCINE ENCAPSULATING HPV MRNA
US - 29.12.2022
Clasificación Internacional A61K 9/16 Nº de solicitud 17776743 Solicitante DAIICHI SANKYO COMPANY, LIMITED Inventor/a Takako NIWA
The present invention provides a vaccine for preventing and/or treating infections with human papillomavirus. The present invention relates to a lipid particle encapsulating a nucleic acid molecule capable of expressing the E6 and E7 antigens of human papillomavirus, wherein the lipid comprises a cationic lipid represented by general formula (Ia) or a pharmaceutically acceptable salt thereof:
wherein R^1 and R^2 each independently represent a C_1-C_3 alkyl group;
L^1 represents a C_{17}-C_{19} alkenyl group which may have one or a plurality of C_2-C_4 alkanoyloxy groups;
L^2 represents a C_{10}-C_{19} alkyl group which may have one or a plurality of C_2-C_4 alkanoyloxy groups or a C_{10}-C_{19} alkenyl group which may have one or a plurality of C_2-C_4 alkanoyloxy groups; and
p is 3 or 4.

34.20220409717CHIKUNGUNYA VIRUS-LIKE PARTICLE VACCINE AND METHODS OF USING THE SAME
US - 29.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17771782 Solicitante Emergent Travel Health Inc. Inventor/a Jeffery L. ALEXANDER
The present disclosure is directed to improved virus-like particle (VLP) compositions and vaccines for use in inducing an immune response and/or protective immunity against a Chikungunya virus (CHIKV) infection in a subject, e.g., by inducing a neutralizing antibody response against CHIKV in a subject within 7 days after administration of a single dose of the composition or vaccine.

35.WO/2022/263647PEPTIDE-BASED ASSAY TO DIFFERENTIATE ANIMALS INFECTED WITH CSFV FROM VACCINATED ANIMALS
WO - 22.12.2022
Clasificación Internacional C07K 7/02 Nº de solicitud PCT/EP2022/066588 Solicitante INSTITUT DE RECERCA I TECNOLOGIA AGROALIMENTÀRIES (IRTA) Inventor/a GANGES ESPINOSA, Llilianne
The present patent application discloses a dendrimeric peptide construct and method to differentiate animals infected with the Classical Swine Fever Virus (CSFV) from animals vaccinated with the CSFV FlagT4G vaccine. The method disclosed herein comprises conducting two immunoassays, preferably ELISAs, to differentiate infected from vaccinated animals (DIVA); one immunoassay to detect humoral response against the dendrimeric peptide of the invention and a second immunoassay to detect humoral response against the E2 glycoprotein of the CSFV. Accordingly, the presently disclosed method allows the differentiation of three groups of individuals: animals vaccinated with FlagT4G vaccine, animals infected with CSFV and animals that are neither infected nor vaccinated.

36.20220409722FENTANYL HAPTEN, FENTANYL HAPTEN-CONJUGATES, AND METHODS FOR MAKING AND USING
US - 29.12.2022
Clasificación Internacional A61K 39/385 Nº de solicitud 17774906 Solicitante REGENTS OF THE UNIVERSITY OF MINNESOTA Inventor/a Marco Pravetoni

This disclosure describes a fentanyl hapten, a fentanyl hapten-carrier conjugate, methods of making the fentanyl hapten and the fentanyl hapten-carrier conjugate, and methods of using the fentanyl hapten and the fentanyl hapten-carrier conjugate. The fentanyl hapten-carrier conjugate may be used, for example, as a prophylactic vaccine to counteract toxicity from exposure to fentanyl and its analogues. In some embodiments, the fentanyl hapten-carrier conjugate or a composition including the fentanyl hapten-carrier conjugate may be used in an anti-opioid vaccine.

37.20220401533TREATMENT AND PROTECTION AGAINST ASPERGILLUS INFECTION AND ASPERGILLOSIS DISEASE
US - 22.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17776938 Solicitante University of Georgia Research Foundation, Inc. Inventor/a Emily Anne RAYENS
The invention generally provides methods of treating or preventing aspergillosis disease and/or its symptoms associated with infection by the *Aspergillus* pathogenic fungus. The methods involve administering an *Aspergillus* Kexin peptide, or a composition comprising an *Aspergillus* peptide, to a mammalian subject in need thereof, such as a subject afflicted with *aspergillus*, or a subject susceptible to or at risk of infection by *Aspergillus* and ensuing aspergillosis disease. In some aspects, the *Aspergillus* Kexin peptide is an *A. fumigatus* Kexin peptide. In some aspects, the mammalian subject is a human patient. In some aspects, the patient is immunosuppressed or immunocompromised. The *Aspergillus* Kexin peptide as immunogen or vaccine generates a potent and robust immune response, e.g., antibody response, in the immunized subject. The methods afford therapeutic and protective treatment against aspergillosis and its symptoms, as well as a reduction in the severity of aspergillosis in the treated subjects.

38.4103227HPV-IMPFSTOFF
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21709566 Solicitante MERCK SHARP & DOHME LLC Inventor/a GINDY MARIAN E
The present disclosure provides, among other things, a pharmaceutical composition that includes a lipid nanoparticle adjuvant and an anti-human papillomavirus (HPV) comprising HPV virus-like particles (VLPs) of at least one type of human papillomavirus (HPV) selected from the group consisting of HPV types: 6, 11, 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 55, 56, 58, 59, 66, 68, 73, and 82.

39.4103587CORONAVIRUS-IMPFSTOFF
EP - 21.12.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 21704809 Solicitante IMMUNOR AS Inventor/a SUSRUD ANDRES SCHJØNHAUG
The present invention relates to the field of virus immunotherapy. In particular the present invention relates to novel peptides and methods for treatment, induction of immunity, prophylaxis and amelioration of a disease caused by virus infections with Corona virus, in particular Wuhan seafood market pneumonia virus isolate Wuhan-Hu-1.

40.4104854MULTIVALENTE IMPFSTOFFE GEGEN TOLLWUTVIRUS UND CORONAVIREN
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 22171378 Solicitante THE US SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES Inventor/a JOHNSON REED F
The present disclosure provides methods and compositions for inducing an immune response that confers dual protection against infections by either or both of a rabies virus and a coronavirus, and/or which can be used therapeutically for an existing infection with rabies virus and/or a coronavirus to treat at least one symptom thereof and/or to neutralize or clear the infecting agents. In particular, the present

disclosure provides a recombinant rabies virus vector comprising a nucleotide sequence encoding at least one coronavirus immunogenic glycoprotein fragment, as well as pharmaceutical compositions comprising the vaccine vectors.

41.WO/2022/267856WAYNE293 LVPRO CELLS ADAPTED TO SERUM-FREE MEDIUM ENVIRONMENT AND USE THEREOF
WO - 29.12.2022
Clasificación Internacional C12N 5/073 Nº de solicitud PCT/CN2022/096765 Solicitante QUACELL BIOTECHNOLOGY, CO. LTD. Inventor/a YU, Xiaoyu
Provided are human embryonic kidney WAYNE293 LVPRO cells and a use thereof. The cells can be used as host cells in protein expression and growth, viral vector expression and production, or vaccine production, or as host cells in preparation of a drug in the field of cell or gene therapy. The human embryonic kidney WAYNE293 cells are preserved in China General Microbiological Culture Collection Center (CGMCC) on 24 May 2021 with the accession number being CGMCC No.22348.

42.4103730ENZYMATISCHES VERFAHREN ZUR HERSTELLUNG VON CMP-NEU5AC
EP - 21.12.2022
Clasificación Internacional C12P 19/26 Nº de solicitud 21715666 Solicitante MAX PLANCK GESELLSCHAFT Inventor/a REXER THOMAS F T
The present invention relates to a method for producing cytidine 5'-monophospho-N-acetyl-neuraminic acid (CMP-Neu5Ac, 1) from low-cost substrates N-acetyl-D-glucosamine (GlcNAc), pyruvate, cytidine and polyphosphate in a single reaction mixture with a set of optionally immobilized or optionally co-immobilized enzymes comprising N-acylglucoamine 2-epimerase (AGE), an N-acetylneuraminate lyase (NAL), an N-acylneuraminate cytidylyltransferase (CSS), a uridine kinase (UDK), a uridine monophosphate kinase and a polyphosphate kinase 3 (PPK3). Further, said process may be adapted to produce Neu5Acylated i.e. sialylated biomolecules and biomolecules including a saccharide, a peptide, a protein, a glycopeptide, a glycoprotein, a glycolipid, a glycan, an antibody, and a glycoconjugate, in particular, an antibody drug conjugate, and a carbohydrate conjugate vaccine, or a flavonoid.

43.20220411484METHODS FOR TREATING VIRAL INFECTIONS
US - 29.12.2022
Clasificación Internacional C07K 16/10 Nº de solicitud 17863149 Solicitante The Regents of The University of California Inventor/a Dennis J. Hartigan-O'Connor
Provided herein are methods for preventing or treating a human immunodeficiency virus (HIV) infection or a simian immunodeficiency virus (SIV) infection in a subject. The methods include administering to the subject (a) a reservoir-depleting agent that binds to a host protein on a reservoir cell, and (b) an antiviral vaccine.

44.20220401539Immunotherapy Targeting Tumor Neoantigenic Peptides
US - 22.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17770304 Solicitante Institut Curie Inventor/a Olivier Delattre
The present disclosure relates to a tumor specific neoantigenic peptide, wherein said peptide (i) is encoded by a part of an (ORF) sequence from an unannotated transcript which transcription is positively regulated by an aberrant fusion protein, and (ii) is expressed at a higher level or frequency in a sample from said tumor compared to normal tissue sample. The present disclosure also relates to vaccine or immunogenic composition, antibodies and immune cells derived thereof and their use in therapy of cancer.

45.4103234T-ZELL-EPITOP-CLUSTER UND VERWANDTE ZUSAMMENSETZUNGEN ZUR VORBEUGUNG, DIAGNOSE UND BEHANDLUNG VON COVID-19

EP - 21.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 21754632 Solicitante EPIVAX INC Inventor/a DE GROOT ANNE
The present disclosure relates to novel epitope-based compositions, including vaccines, against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and diseases caused by SARS-CoV-2, including the highly contagious coronavirus disease 2019. The disclosure relates to immunogenic polypeptides (including concatemeric polypeptides, hybrid Ii-key constructs, and chimeric or fusion polypeptides as disclosed herein) and the uses thereof, particularly in vaccine compositions. The disclosure also relates to nucleic acids, vectors, and cells which express the polypeptides and the uses thereof. The polypeptides of the invention more specifically comprise an agretope predicted to be a ligand of HLA class I and/or HLA class II MHC molecules, as well as an epitope that is predicted to be recognized by T-cells in the context of MHC class I and/or class II molecules. The compositions are particularly suited to produce vaccines, particularly for vaccinating against SARS-CoV-2 infection and related diseases caused by SARS-CoV-2, including COVID-19.

46.20220401551HUMAN CYTOMEGALOVIRUS VACCINE
US - 22.12.2022
Clasificación Internacional A61K 39/245 Nº de solicitud 17840478 Solicitante ModernaTX, Inc. Inventor/a Jack F. Kramarczyk
Aspects of the disclosure relate to methods for producing an antigen-specific immune response to human cytomegalovirus (hCMV) in a subject by administering mRNA vaccines.

47.4103231IMPFSTOFFE UND IHRE VERWENDUNGEN ZUR INDUKTION EINER IMMUNANTWORT GEGEN SARS-COV2
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21754084 Solicitante GEOVAX INC Inventor/a HAUSER MARY JO
Provided herein are recombinant modified vaccinia Ankara (rMVA) viral vectors comprising heterologous nucleic acid inserts encoding one or more SARS-CoV2 proteins, peptides, or fragments thereof, operably linked to a promoter compatible with poxvirus expression systems that, upon expression, are capable of inducing protective immunity. The compositions can be used in a priming vaccination strategy or in a prime/boost vaccination strategy to provide immunity to SARS-CoV2 and variants thereof.

48.20220409709LABYRINTHIN-BASED PEPTIDES FOR CANCER IMMUNOTHERAPIES AND USES THEREOF
US - 29.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17309648 Solicitante LABYRX IMMUNOLOGIC THERAPEUTICS (USA) LIMITED Inventor/a James A. RADOSEVICH
Antigenic compositions comprising one or more labyrinthin-derived peptides are described herein. In some embodiment, each peptide of the antigenic composition comprises a T-cell epitope and/or a B-cell epitope. In other aspects, the present disclosure provides, e.g., vaccine compositions comprising tin antigenic composition disclosed herein, including kits, medicines, and compositions (such as pharmaceutical compositions and unit dosages) thereof. Also provided are methods of using the compositions disclosed herein, such as methods of treatment thereof and methods of producing antibodies, and antibody compositions thereof, against the one or more labyrinthin-derived peptides or a portion thereof.

49.20220401540PHARMACEUTICAL COMPOSITION
US - 22.12.2022

Clasificación Internacional A61K 39/00 Nº de solicitud 17780396 Solicitante CYTLIMIC INC. Inventor/a Shun DOI
The present invention provides a novel technology useful for a cancer vaccine therapy, that is, a pharmaceutical composition wherein a Toll-like receptor agonist, LAG-3 protein, a variant thereof or a derivative thereof, at least one immunogenic agent, and an immune checkpoint inhibitor are administered in combination.

50.20220409720VARICELLA ZOSTER VIRUS (VZV) VACCINE
US - 29.12.2022
Clasificación Internacional A61K 39/25 Nº de solicitud 17245973 Solicitante ModernaTX, Inc. Inventor/a Giuseppe Ciaramella
Aspects of the disclosure relate to nucleic acid vaccines. The vaccines include at least one RNA polynucleotides having a open reading reading frame encoding at least varicella zoster virus (VZV) antigen. Methods for preparing and using such vaccines are also described.

51.WO/2022/262793PORTABLE COMBINED INHALATION DEVICE SUITABLE FOR VIALS
WO - 22.12.2022
Clasificación Internacional A61M 15/00 Nº de solicitud PCT/CN2022/099085 Solicitante RNAIMMUNE VACCINE (GUANGZHOU) CO., LTD. Inventor/a LU, Chun
The present invention relates to a portable combined inhalation device suitable for vials, comprising an atomizing device and a connecting device that is detachably connected to the atomizing device; the connecting device comprises a support in which an accommodating groove that can accommodate a vial is formed, and a puncture device that is provided on the support and that can pierce a rubber stopper of the vial; and the puncture device comprises a liquid channel and a gas channel; if the vial, the connecting device and the atomizing device are connected to one another, one end of the liquid channel communicates with the vial, and the other end communicates with the atomizing device; and one end of the gas channel communicates with the vial, and the other end communicates with air. The present invention may, under the action of atmospheric pressure, directly introduce medicinal liquid in a vial into an atomizing device for atomization, without the need to first transfer the drug in the vial to a dedicated atomization bottle and then connect the dedicated atomization bottle to the atomizing device, thus use is more convenient and safer and the possibility of the medicinal liquid being contaminated is greatly reduced; in addition, the device has a simple structure.

52.20220402978POLYPEPTIDES MIMICKING EPITOPE OF BROADLY NEUTRALIZING ANTIBODY VRC01 AS ANTIGENS FOR A VACCINE PREVENTING HIV-1 INFECTION
US - 22.12.2022
Clasificación Internacional C07K 14/16 Nº de solicitud 17642131 Solicitante UNIVERZITA PALACKEHO V OLOMOUCI Inventor/a Petr MALY
A polypeptide mimicking epitope of glycoprotein gp120 of HIV-1 virus that is recognized by a paratope of broadly neutralizing antibody VRC01 and has the length up to 100 amino acid residues and contains an amino acid sequence:
(SEQ ID NO. 1): X^1YKNX^2INX^3AX^4X^5VX^6X^7VKRX^8IDX^9ILAX^{10}LP

-
  - X^1 is selected from amino acids A, N, R;
  - X^2 is selected from amino acids A, R, D;
  - X^3 is selected from amino acids R, V, P;
  - X^4 is selected from amino acids V, L, S;
  - X^5 is selected from amino acids T, G, R;

- X^6 is selected from amino acids G, T;
- X^7 is selected from amino acids L, A;
- X^8 is selected from amino acids V, I;
- X^9 is selected from amino acids G, A, R;
- X^{10} is selected from amino acids R, A, G;

with a directly attached alpha-helical structure at the N-terminus or C-terminus is disclosed.

53.4105232IMMUNZELLEN, DIE EINEN VON AUSSEN EINGEBRACHTEN ZELLSIGNALREGULATORISCHEN FAKTOR ÜBEREXPRIMIEREN, UND VERWENDUNGEN DAVON
EP - 21.12.2022
Clasificación Internacional C07K 16/28 Nº de solicitud 21753514 Solicitante BEIJING YONGTAI RUIKE BIOTECHNOLOGY COMPANY LTD Inventor/a KIM HOEON
The present invention relates to an immune cell that are engineered to overexpress cell signaling pathway modulator(s) and a use thereof. As a specific example, an immune cell expressing a fusion protein comprising a chimeric antigen receptor and a cell signaling pathway modulator(s) performs an immune response by selecting a target cancer cell by a chimeric antigen receptor expressed on a cell membrane. In this case, the cell signaling pathway modulator is overexpressed in the cytoplasm, thereby being capable of regulating the activity of an immune cell. Therefore, the fusion protein comprising a chimeric antigen receptor and cell signaling pathway modulator(s), and the immune cell engineered to overexpress the cell signaling pathway modulator(s) of the present invention can be usefully used in the treatment of cancer.

54.20220402793100 % renewably -powered desalination /water purification station
US - 22.12.2022
Clasificación Internacional C02F 9/00 Nº de solicitud 17352318 Solicitante Jianchao Shu Inventor/a Jianchao Shu
The invention relates to 100% renewably-powered desalination/water purification stations for universal applications, the station is disruptive, scalable, amphibious and deportable to seawater, brackish or spill oil sites for simple wave-powered and autonomous operations, the station has a mooring assembly with pumping-purification-delivery subsystems powered by wave and solar energies, the pumping subsystems has the simplest, most efficient wave push/pull pump mechanisms powered by amplified wave centrifugal forces , the mechanical purifications has turbine filters, reverse-osmosis filters, forward-osmosis filters and relief valves to backwash buildups without releasing brine, release water through collecting spill oil, the solar thermal purifications are provided with distilling processes under vaccine conditions, the delivery subsystems with wave turbines and solar panels for generating electricity, propellering and transferring the stations for delivering fresh waters to destinations under GPS guide with the lowest LCOW.

55.WO/2022/271199METHOD FOR PROPHYLAXIS AND ATTENUATION OF COVID-19 AND OTHER INFLAMMATORY MICROBIAL ACUTE RESPIRATORY DISEASE SYNDROMES THROUGH MODULATION OF INNATE AND ADAPTIVE IMMUNITY WITH POLY- ICLC
WO - 29.12.2022
Clasificación Internacional A61K 31/716 Nº de solicitud PCT/US2022/000012 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.

56.20220409718RECOMBINANT HERPESVIRUS OF TURKEY VECTORS EXPRESSING ANTIGENS OF AVIAN PATHOGENS AND USES THEREOF
US - 29.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17823566 Solicitante Zoetis Services LLC Inventor/a Sing RONG
The invention relates to recombinant viral vectors for the insertion and expression of foreign genes for use in safe immunizations to protect against a variety of pathogens. The invention also relates to multivalent compositions or vaccine comprising one or more recombinant viral vectors for protection against a variety of pathogens. The present invention relates to methods of making an using said recombinant viral vectors.

57.WO/2022/269248VIRUS ATTENUATION
WO - 29.12.2022
Clasificación Internacional A61K 39/17 Nº de solicitud PCT/GB2022/051579 Solicitante UNIVERSITY 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.

58.WO/2022/272263NOVEL MRNA VACCINE FOR AUTOIMMUNITY
WO - 29.12.2022
Clasificación Internacional A61P 37/02 Nº de solicitud PCT/US2022/073087 Solicitante THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK 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.

59.20220411540METHOD OF PURIFYING POLYSACCHARIDES
US - 29.12.2022
Clasificación Internacional C08B 37/00 Nº de solicitud 17756282 Solicitante LONZA LTD Inventor/a Andreas ZURBRIGGEN
The present disclosure provides a method of purifying polysaccharides from a cell lysate, comprising partially purifying the cell lysate comprising an impurity and a polysaccharide to obtain a clarified cmde lysate; mixing the clarified crude lysate with a neutralization solution comprising a salt to form a neutralized lysate; mixing the neutralized lysate with a precipitation solution comprising cetyltrimethylammonium bromide to form a first supernatant and a first precipitate; and separating the first precipitate from the first supernatant, wherein the polysaccharide is located in the first supernatant. The present disclosure further provides a method of making a polysaccharide vaccine. Also provided are vaccines, delivery systems, compositions and polysaccharides made by the methods described herein.

60.WO/2022/271041SISTEMA ELECTRÓNICO DE VACUNACIÓN ESPECÍFICA
WO - 29.12.2022

Clasificación Internacional A61L 9/20 Nº de solicitud PCT/PE2022/000003 Solicitante LOAYZA VÉLEZ, Renzo Pio Javier Inventor/a LOAYZA VÉLEZ, Renzo Pio Javier
El presente invento se refiere al Sistema Electrónico de Vacunación Específica, por vez primera en el mundo se está utilizando la luz ultravioleta para crear formas de vacunación muy específicas y constantes. Este sistema trabaja iluminando el aire que ingresa o sale a través de un dispositivo que controla el ingreso/salida de aire de una determinada persona con lo que se impide el desarrollo de enfermedades y a su vez se potencia el sistema inmunológico de manera específica mediante la creación de anticuerpos específicos para la gran cantidad de variantes que pudieran haber y que pudieran formarse en el tiempo. Anteriormente al presente desarrollo solo se usaba la luz ultravioleta para potenciar mecanismos de barrera biológica, es decir no se usaba el agente biológico esterilizado para inducir una respuesta inmune, es decir vacuna.

61.WO/2022/264109MULTIVALENT INFLUENZA VACCINES
WO - 22.12.2022
Clasificación Internacional A61K 9/51 Nº de solicitud PCT/IB2022/055655 Solicitante SANOFI Inventor/a CHIVUKULA, Sudha
Provided are octavalent influenza vaccine compositions comprising eight mRNA, each mRNA comprising an open reading frame encoding a different influenza antigen. Also provided are lipid nanoparticles (LNPs) for delivering said mRNA.

62.20220402975NEWCASTLE DISEASE VIRUS-BASED VECTORED VACCINE
US - 22.12.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17592333 Solicitante University of Maryland, College Park Inventor/a George Belov
Provided are compositions and methods for vaccinating against picornaviruses. The compositions include modified Newcastle Disease viruses (NDVs) that are sufficient to produce virus-like particles (VLPs) in a host recipient. The modified NDVs contain a single stranded negative sense RNA polynucleotide having nucleotide sequences configured in a 3'-5' direction encoding sequentially NDV nucleocapsid protein (NP), phosphoprotein (P), matrix protein (M), fusion protein (F), hemagglutinin-neuraminidase (HN) and RNA-dependent RNA polymerase (L) protein. A first nucleotide sequence encoding a picornavirus capsid polyprotein precursor is positioned between the between P and M nucleotide sequences. A second nucleotide sequence encoding a picornavirus protease that is capable of processing the capsid polyprotein precursor is positioned between the HN and L nucleotide sequences. Purified, infectious non-pathogenic NDV particles are included, as are methods for using such particles for vaccination against any infectious picornavirus. Kits and articles of manufacture containing and/or for making the NDV particles are also provided.

63.4103233T-ZELL-EPITOPE UND ZUGEHÖRIGE ZUSAMMENSETZUNGEN ZUR VORBEUGUNG, DIAGNOSE UND BEHANDLUNG VON COVID-19
EP - 21.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 21754439 Solicitante EPIVAX INC Inventor/a DE GROOT ANNE
The present disclosure generally relates to novel epitope-based compositions, including vaccines, against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and diseases caused by SARS-CoV-2, including the highly contagious coronavirus disease 2019 (which has been termed and may be referred to herein as "COVID-19", "2019-nCoV", or the "2019 novel coronavirus". The disclosure relates to immunogenic polypeptides and the uses thereof, particularly in vaccine compositions. The disclosure also relates to nucleic acids, vectors, and cells which express the polypeptides and the uses thereof. The polypeptides more specifically comprise an agretope predicted to be a ligand of HLA class I and/or HLA

class II MHC molecules, as well as an epitope that is predicted to be recognized by T-cells in the context of MHC class I and/or class II molecules. The compositions are particularly suited to produce vaccines, particularly for vaccinating against SARS-CoV-2 infection and related diseases caused by SARS-CoV-2, including COVID-19.

64.4103229SARS-COV-2-IMPFSTOFF
EP - 21.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21710716 Solicitante US HEALTH Inventor/a GRAHAM BARNEY
SARS-CoV-2 S ectodomain trimers stabilized in a prefusion conformation, nucleic acid molecules and vectors encoding these proteins, and methods of their use and production are disclosed. In several embodiments, the SARS-CoV-2 S ectodomain trimers and/or nucleic acid molecules can be used to generate an immune response to SARS-CoV-2 S in a subject, for example, an immune response that inhibits SARS-CoV-2 infection in the subject.

65.20220404359DEVICE FOR EVALUATING NEUROVIRULENCE OF MUMPS VIRUS
US - 22.12.2022
Clasificación Internacional G01N 33/569 Nº de solicitud 17755664 Solicitante SHANGHAI KING-CELL BIOTECHNOLOGY CO. LTD. Inventor/a Dayong TIAN
A device for evaluating the neurovirulence of a mumps virus, comprising: (I) a virus inoculation module, which is used for performing virus inoculation of a mumps virus to be evaluated on the lateral ventricle of a rat; (II) a processing module, which is used for performing vibration slicing on the fixed rat brain; (III) an imaging module, which is used for scanning and imaging the obtained rat brain slices; and (IV) an analysis module, which is used in the obtained imaging for calculating a neurovirulence index by using a formula I: the neurovirulence index=S1/S0×100 (formula I) according to the cross-sectional area S1 of a cavity formed by hydrocephalus in the longitudinal section of the rat brain and the total cross-sectional area S0 of the rat brain. Multiple results show that the results are stable, repeatability is high, and a wild strain may be distinguished from a vaccine strain. In addition, relative to a current monkey body neurovirulence model, animal cost and difficulty of operation are greatly reduced.

66.20220411475HYBRID VIRUS-LIKE PARTICLES AND USE THEREOF AS A THERAPEUTIC HEPATITIS B VACCINE
US - 29.12.2022
Clasificación Internacional C07K 14/02 Nº de solicitud 17777589 Solicitante VLP Biotech, Inc. Inventor/a David R. MILICH
The present disclosure relates to hybrid hepadnavirus core antigens including one or more epitopes of a human hepatitis B vims (HBV) antigen. More specifically, the present disclosure relates to hybrid hepadnavirus core antigens in the form of fusion proteins containing a fragment of the PreS1 region of the HBV surface antigen inserted in a woodchuck hepadnavirus core antigen. The present disclosure further relates to hybrid hepadnavirus core antigens in the form of fusions proteins containing a truncated HBV core antigen and woodchuck hepadnavirus core antigen. Also provided are nucleic acids encoding the hybrid core antigens, and the use of the hybrid core antigens and nucleic acids for treating HBV-infected individuals.

67.20220411760NOVEL VERO CELL LINE THAT CAN BE SUSPENSION-CULTURED IN SERUM-FREE MEDIUM, PREPARATION METHOD THEREFOR, AND METHOD FOR PREPARING VIRUSES FOR VACCINES BY USING NOVEL CELL LINE
US - 29.12.2022
Clasificación Internacional C12N 5/071 Nº de solicitud 17780093 Solicitante SK BIOSCIENCE CO., LTD. Inventor/a Jun-seok KWAK

The present disclosure relates to sVERO 7C2, which is a Vero cell line derived from Vero cells (African Green Monkey Kidney Cell Line) distributed from the WHO and capable of suspension culture without serum components. Further, the present disclosure relates to a culture method for growing the Vero cells and a method for producing a vaccine virus using the Vero cells.

68.4105225PEPTIDBASIERTER TEST ZUR DIFFERENZIERUNG VON MIT CSFV INFIZIERTEN TIEREN VON GEIMPFTEN TIEREN
EP - 21.12.2022
Clasificación Internacional C07K 7/02 Nº de solicitud 21382539 Solicitante INST DE RECERCA I TECNOLOGIA AGROALIMENTARIES Inventor/a GANGES ESPINOSA LLILIANNE
The present patent application discloses a dendrimeric peptide construct and method to differentiate animals infected with the Classical Swine Fever Virus (CSFV) from animals vaccinated with the CSFV FlagT4G vaccine.The method disclosed herein comprises conducting two immunoassays, preferably ELISAs, to differentiate infected from vaccinated animals (DIVA); one immunoassay to detect humoral response against the dendrimeric peptide of the invention and a second immunoassay to detect humoral response against the E2 glycoprotein of the CSFV. Accordingly, the presently disclosed method allows the differentiation of three groups of individuals: animals vaccinated with FlagT4G vaccine, animals infected with CSFV and animals that are neither infected nor vaccinated.

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