VacCiencia

FINLAY EDICIONES

Boletín Científico

No. 16 (13-22 julio / 2022)

EN ESTE NÚMERO

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.

- Resumen de la información publicada por la OMS sobre vacunas en desarrollo contra la COVID-19 a nivel mundial.
- Noticias más recientes en la Web sobre vacunas.
- Artículos científicos más recientes de Medline sobre vacunas.
- Patentes más recientes en Patentscope sobre vacunas.
- Patentes más recientes en USPTO sobre vacunas.

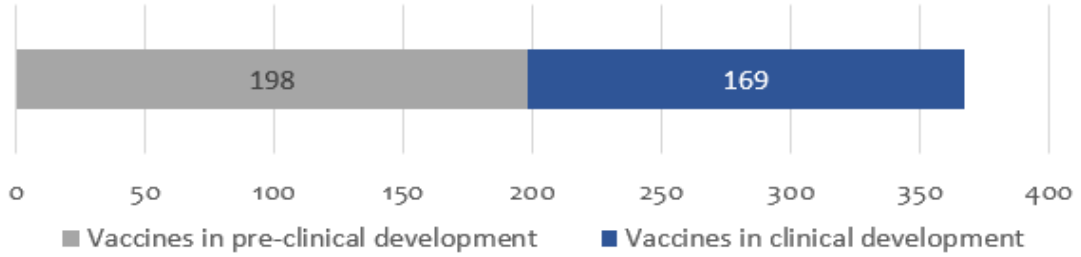
IFV INSTITUTO FINLAY DE VACUNAS SiViFinlay VaCyT

Resumen de la información publicada por la OMS sobre los candidatos vacunales contra la COVID-19 en desarrollo a nivel mundial

Última actualización por la OMS: 22 de julio de 2022.

Fuente de información utilizada: World Health Organization | R&DBlueprint Powering research to prevent epidemics

169 candidatos vacunales en evaluación clínica y 198 en evaluación preclínica



Candidatos vacunales en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	54	32%
VVnr	Viral Vector (non-replicating)	21	13%
DNA	DNA	16	10%
IV	Inactivated Virus	22	13%
RNA	RNA	40	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	6	4%
VVr + APC	VVr + Antigen Presenting Cell	2	1%
LAV	Live Attenuated Virus	2	1%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
BacAg-SpV	Bacterial antigen-spore expression vector	1	1%
		169	

Candidatos vacunales mucosales en evaluación clínica

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Vía de administración	Fase
University of Oxford/Reino Unido	Vector viral no replicativo	Intranasal	1
CanSino Biological Inc./Beijing Institute of Biotechnology/China	Vector viral no replicativo	Inhalación	4
Vaxart/Estados Unidos	Vector viral no replicativo	Oral	2
Univ. Hong Kong, Xiamen Univ./Beiging Wantai Biol. Pharm./China	Vector viral replicativo	Intranasal	3
Symvivo/Canadá	ADN	Oral	1
ImmunityBio, Inc./Estados Unidos	Vector viral no replicativo	Oral o SL	1/2
Codagenix/Serum Institute of India	Virus vivo atenuado	Intranasal	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	Intranasal	1/2
Razi Vaccine and Serum Research Institute/India	Subunidad proteica	IM e IN	3
Bharat Biotech International Limited/India	Vector viral no replicativo	Intranasal	3
Meissa Vaccines, Inc./Estados Unidos	Virus vivo atenuado	Intranasal	1
Laboratorio Avi-Mex/México	Virus inactivado	IM o IN	2/3
USSF + VaxForm/Estados Unidos	Subunidad proteica	Oral	1
CyanVac LLC/Estados Unidos	Vector viral no replicativo	Intranasal	1
DreamTec Research Limited/Hong Kong	BacAg-SpV	Oral	NA
Sean Liu, Icahn School of Medicine at Mount Sinai	Vector viral replicativo	IN/IM	2/3
Hannover Medical School/Alemania	Vector viral no replicativo	Inhalación	1
ACM Biolabs/Singapur	Subunidad proteica	IN/IM	1

Candidatos vacunales más avanzados a nivel global

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Fase
Sinovac/China	Virus Inactivado	4
Sinopharm/Wuhan Institute of Biological Products/China	Virus Inactivado	4
Sinopharm/Beijing Institute of Biological Products/China	Virus Inactivado	4
University of Oxford/AstraZeneca/Reino Unido	Vector viral no replicativo	4
CanSino Biological Inc./Beijing Institute Biotechnology/China	Vector viral no replicativo	4
CanSino Biological Inc./Beijing Institute Biotechnology/China	Vector viral no replicativo (IH)	4
Gamaleya Research Institute/Rusia	Vector viral no replicativo	3
Janssen Pharmaceutical Companies/Estados Unidos	Vector viral no replicativo	4
Novavax/Estados Unidos	Subunidad proteica	3
Moderna/NIAID/Estados Unidos	ARN	4
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN	4
Anhui Zhifei Longcom Biopharmac./Inst. Microbiol, Chin Acad Sci/China	Subunidad proteica	3
CureVac AG/Alemania	ARN	3
Institute of Medical Biology/Chinese Academy of Medical Sciences	Virus inactivado	3
Research Institute for Biological Safety Problems, Kazakhstan	Virus inactivado	3
Inovio Pharmac. + Intern. Vacc Inst. + Advaccine Biopharm Co., Ltd	ADN	3
Zydus Cadila Healthcare Ltd./India	ADN	3
Bharat Biotech International Limited/India	Virus Inactivado	3
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica	3
Shenzhen Kangtai Biological Products Co., Ltd./China	Virus Inactivado	3
Clover Biopharmaceuticals Inc./GSK/Dynavax/China/Reino Unido/EE.UU	Subunidad proteica	3
Vaxine Pty Ltd. + CinnaGen Co./Australia, Irán	Subunidad proteica	3
Medigen Vaccine Biol./Dynavax/NIAID/Taiwán/EE.UU	Subunidad proteica	4
Instituto Finlay de Vacunas/Cuba	Subunidad proteica	3
Federal Budget Res Inst State Res Cent Virol Biotechnol "Vector"/Rusia	Subunidad proteica	3
West China Hospital + Sichuan University/China	Subunidad proteica	3
Vaxxinity/EE.UU	Subunidad proteica	3
Univ. Hong Kong, Xiamen Univ. & Beijing Wantai Biological Pharm./China	Vector viral replicativo	3
Acad Milit Sci (AMS) Walvax Biotechnol, Suzhou Abogen Biosci/China	ARN	3
Medicago Inc./Canadá	Particula similar a virus	3
Codagenix/Serum Institute of India	Virus vivo atenuado	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	3
Valneva, National Institute for Health Research, Reino Unido	Virus inactivado	3
Biological E. Limited/India	Subunidad proteica	3
Nanogen Pharmaceutical Biotechnology/Vietnam	Subunidad proteica	3
Shionogi/Japón	Subunidad proteica	3
Erciyes University/Turquia	Virus inactivado	3
SK Bioscience Co., Ltd./CEPI/Corea del Sur/Noruega	Subunidad proteica	3
Razi Vaccine and Serum Research Institute/Irán, India	Subunidad proteica	3
Bharat Biotech International Limited/India	Vector viral no replicativo (IN)	3
Jiangsu Rec-Biotechnology/China	Subunidad proteica	3
Radboud University/Holanda	Particula similar a virus	3
Livzon Pharmaceutical/China	Subunidad proteica	3
KM Biologics Co., Ltd./Japón	Virus inactivado	2
Bagheiat-allah University of Medical Sciences/AmitisGen/Irán	Subunidad proteica	3
Laboratorios Hipra, S.A.	Subunidad proteica	3
Arcturus Therapeutics, Inc./Estados Unidos	ARN	3
Sinocelltech Ltd./China	Subunidad proteica	3
Chumakov Federal Scientific Center for Research/Rusia	Virus Inactivado	3
PT Biofarma/Indonesia	Subunidad proteica	3
AIM Vaccine and LiveRNA Therapeutics/China	ARN	3
CanSino Biologics Inc./China	ARN	3
Moderna TX/Estados Unidos	ARN	3
China National Biotec Group Company Limited	Virus inactivado	3

Noticias en la Web

El secreto del alto contagio de las variantes BA.4 y BA.5 está en su espiga

13 jul. Las autoridades sanitarias de toda Europa vuelven a ponerse en alerta ante la llegada de las nuevas variantes de Ómicron BA.4 y BA.5. Entre las principales características de estos dos sublinajes destacan que son más contagiosas y aumentan la posiblidad de reinfectarse, pero no provocan una mayor gravedad de la enfermedad. Como consecuencia de esto, surge una de las principales incógnitas:

El número promedio que un caso inicial infecta en una población sin inmunidad de estas dos variantes es de 18.

¿Qué tan transmisibles son BA.4 y BA.5? Según un estudio llevado a cabo en Sudáfrica, las variantes BA.4 y BA.5 registran un número básico de reproducción (Ro) de 18, similar al del sarampión, hasta ahora la enfermedad viral más infecciosa. De hecho, la investigación muestra cómo el alto contagio de estas variantes se centran en su espiga.

Este Ro representa el número promedio de personas que un caso inicial infecta en una población sin inmunidad (por vacunas o infección previa). Según la investigación, publicada en la plataforma preprint MedRxiv, los Ro de las distintas mutaciones del SARS-CoV-2 son los siguientes: la cepa original de Wuhan presenta un Ro de 3,3; Delta lo tiene de 5,1: Ómicron BA.1 de 9,5; y BA.2 tiene un Ro alrededor de 13,3. La investigación, que detalla la evolución y transmisibilidad del coronavirus, muestra "las ventajas de crecimiento para BA.4 y BA.5 de 0,08 y de 0,12 por día respectivamente, sobre la BA.2". Asimismo, los autores principales del estudio señalan que "las proteínas de espiga de estas dos nuevas variantes son idénticas y comparables a las de BA.2, excepto por la adición de 69-70, L452R, F486V y el aminoácido de tipo salvaje en Q493".

A este respecto, los investigadores añaden que "la delección 69-70 en la espiga permite identificar los sublinajes BA.4 y BA.5 mediante el marcador indirecto de fallo de la diana del gen S. Por ello, BA.4 y BA.5 han sustituido rápidamente a BA.2, alcanzando más del 50 por ciento de los casos secuenciados a partir de la primera semana de abril de 2022".

Ventaja de crecimiento de Ómicron BA.4 y BA.5

Los investigadores también subrayan que, en cuanto a la ventaja de crecimiento de Ómicron BA.4 y BA.5, siendo esta última la que predomina actualmente en España, esta "podría estar medida por un aumento de su transmisibilidad intrínseca en relación con otras variantes, un aumento en relación con otras variantes en su capacidad de infectar, y ser transmitida por individuos previamente infectados y vacunados o ambas cosas".

Según el estudio, "el tiempo estimado hasta el ancestro común más reciente tanto para BA.4 como para BA.5 (mediados de noviembre de 2021) se opone a la primera opción, ya que sugiere que ambos linajes

habrían circulado durante todo el periodo dominado por el BA.1 y luego el BA.2 sin mostrar una ventaja de transmisión. La observación de que tanto la variante BA.4 como BA.5 (y muchos linajes dentro de de ellos) han comenzado recientemente a crecer en frecuencia sugiere que la ventaja de crecimiento es reciente y uniforme a través de estos linajes".

Además, "se estima que casi toda la población sudafricana, donde se ha llevado a cabo la investigación, tiene cierto grado de inmunidad al SARS-CoV-2, gracias a una compleja mezcla de vacunación y infecciones previas con el tipo salvaje, Beta, Delta y Ómicron (particularmente BA.1)". Así pues, los investigadores aseguran que "dado que la ventaja de transmisión se hace evidente aproximadamente cuatro meses después del de la onda Ómicron, es posible que la inmunidad decreciente (en particular la adquirida por la infección con BA.1) sea un factor importante. Esto también sugeriría que los efectos de de estos diferentes linajes de Ómicron pueden diferir, según el lugar, dependiendo del paisaje inmunológico y, en particular, de los patrones de exposición a BA.1 y BA.2".

Fuente: Redacción Médica. Disponible en https://bit.ly/3oEV8lS

Confirman en Irán la efectividad del esquema de vacunación de tres dosis con Soberana-02 + Soberana Plus

13 jul. Los resultados del esquema de vacunación de tres dosis con Soberana-02 + Soberana Plus, desarrollado en el Instituto Pasteur de Irán, demostraron gran efectividad, pues las vacunas tienen un 95,5 % de prevención de la hospitalización en casos severos, lo cual dota de un prestigio importante a la vacuna en esa nación, explicó Vicente Vérez Bencomo, director General del Instituto Finlay de Vacunas.

Se demuestra, una vez más, la efectividad y seguridad de las vacunas cubanas contra la COVID-19. Foto: José Manuel Correa

Los estudios clínicos se realizaron en ocho provincias de este país a un universo de 24 000 participantes a quienes se les aplicó Soberana 02 en un régimen de dos dosis, y una dosis de refuerzo (régimen de tres dosis) con Soberana Plus.

Durante el ensayo, la variante Delta, en julio (71,9 %) y agosto (95,4 %), fue ampliamente predominante.

Desde junio de 2021 la vacuna cubana Soberana 02 recibió el autorizo de uso de emergencia en la República Islámica de Irán, nación que también se convirtió en la primera en producir una de las vacunas cubanas contra la COVID-19 en la fábrica denominada PastoCorona, resultado de la transferencia de tecnología de Soberana 02, del Instituto Finlay de Vacunas (IFV), al Instituto Pasteur.

Soberana 02, primera vacuna conjugada contra la COVID-19 a nivel mundial, se conoce en Irán como PastuCovac.

Fuente: Granma. Disponible en https://bit.ly/3PYI9YE

La FDA autoriza el uso de emergencia de la vacuna contra el covid-19 de Novavax

13 jul. La Administración de Alimentos y Medicamentos (FDA, por sus siglas en inglés) de Estados Unidos autorizó el uso de emergencia de la vacuna contra el covid-19 de Novavax en adultos. Es la cuarta vacuna contra el coronavirus disponible en Estados Unidos y utiliza un tipo de tecnología de vacuna diferente a las inyecciones que ya están disponibles.

La vacuna de Novavax estará disponible como serie primaria de dos dosis para personas mayores de 18 años. El Comité Asesor de Vacunas y Productos Biológicos Relacionados (VRBPAC, por sus siglas en inglés) de la FDA votó a favor de la autorización de la vacuna el 7 de junio y dijo que los beneficios de la vacuna superan los riesgos para los adultos.

La vacuna de Novavax está basada en proteínas, y dichas vacunas usan fragmentos de proteínas inofensivas del virus para enseñarle al sistema inmunitario cómo detectar el virus y combatirlo. La vacuna se creó a partir de una secuencia genética de la primera variante del coronavirus.

Los ensayos de última etapa encontraron que la eficacia de la vacuna contra la enfermedad leve, moderada y grave es del 90,4%, según la compañía. No hay evidencia suficiente para evaluar el impacto de la vacuna en la transmisión del virus.

Novavax también anunció a principios de julio que su vacuna muestra una respuesta inmune "amplia" a las variantes que circulan actualmente, incluidas las subvariantes BA.4 y BA.5 de ómicron.

“Los expertos médicos y científicos de la FDA han determinado que la vacuna cumple con los altos estándares de seguridad y eficacia de la FDA para la autorización de uso de emergencia”, dijo en un comunicado de prensa el Dr. Peter Marks, director del Centro de Evaluación e Investigación Biológica de la FDA.

Las vacunas no se pueden administrar hasta que los asesores de vacunas independientes de los Centros para el Control y la Prevención de Enfermedades (CDC, por sus siglas en inglés) evalúen si recomendar la vacuna y el director de los CDC haya aprobado la recomendación. El Comité Asesor sobre Prácticas de Vacunación de los CDC está programado para reunirse el 19 de julio. El lunes, la administración Biden anunció que había asegurado 3,2 millones de dosis de la vacuna Novavax.

Fuente: CNN en español. Disponible en https://cnn.it/3Jeo0dQ

La OMS se pronuncia sobre dos fármacos que no serían efectivos para tratar la COVID-19

13 jul. La Organización Mundial de la Salud (OMS) desaconsejó el uso de dos fármacos contra el coronavirus por falta de evidencias. Se trata del antidepresivo fluvoxamina y la colchicina, utilizada para prevenir ataques de gota, recetado para pacientes con COVID-19 leve o moderado.

La entidad expresó que su determinación se basa en que no hay evidencia suficiente para garantizar que los medicamentos produzcan resultados favorables para paliar los síntomas del virus, pero ambos medicamentos conllevan daños potenciales y colaterales.

Así, el Grupo de Desarrollo de Directrices de la OMS (GDG), un panel de expertos internacionales, publicó un informe en la revista científica *The British Medical Journal* este jueves para frenar la distribución de los fármacos en casos leves o moderados. Se hizo esta especificación, ya que para pacientes en situaciones graves o críticas no hay datos certeros.

"La fluvoxamina y la colchicina son medicamentos económicos de uso común que han recibido un interés considerable como posibles tratamientos contra la COVID-19 durante la pandemia", expresó la OMS en un comunicado difundido a la prensa.

En esa línea, el texto explica: "Las recomendaciones de hoy en contra de su uso reflejan la incertidumbre actual sobre cómo los medicamentos producen un efecto en el cuerpo y la evidencia de poco o ningún efecto sobre la supervivencia y otras medidas importantes, como el riesgo de ingreso hospitalario y la necesidad de ventilación mecánica".

Esta determinación de la máxima entidad sanitaria del mundo se investigó con apoyo metodológico de Magic Evidence Ecosystem Foundation, se basó en datos de tres Ensayos Controlados Aleatorios (ECA) con más de 2 000 pacientes para la fluvoxamina, mientras que en el caso de la colchicina argumentó su consejo con datos de siete ECA realizados con 16 484 pacientes.

Además, los especialistas aclararon que ninguno de los estudios incluyó a niños, por lo que la aplicabilidad de estas recomendaciones a los niños es incierta, aunque se recomendó apegarse a las mismas recomendaciones, ya que no hay motivos por los cuales debería hacer un efecto radicalmente diferente.

Estudios anteriores de medicamentos contra la COVID-19 desaconsejados por la OMS

Anteriormente, la OMS realizó una serie de investigaciones para descifrar si determinados medicamentos eran o no favorables para el tratamiento del virus que causó tanta incertidumbre en el mundo sanitario desde 2020.

Por ejemplo, luego de realizar un estudio que concluyó que el remdesivir no sería tan efectivo para el tratamiento, lanzó una “recomendación condicional” sobre ese fármaco y el molnupiravir para pacientes de alto riesgo que contraigan COVID-19 leve o moderado.

En contracara, sí ratificó una fuerte recomendación para el uso de nirmatrelvir y ritonavir. Mientras que en casos graves lo hizo con el uso de corticosteroides, bloqueadores de los receptores de IL-6 o baricitinib, y desaconsejó el uso de plasma convaleciente, ivermectina e hidroxicloroquina en todos los pacientes, independientemente de la gravedad de la enfermedad.

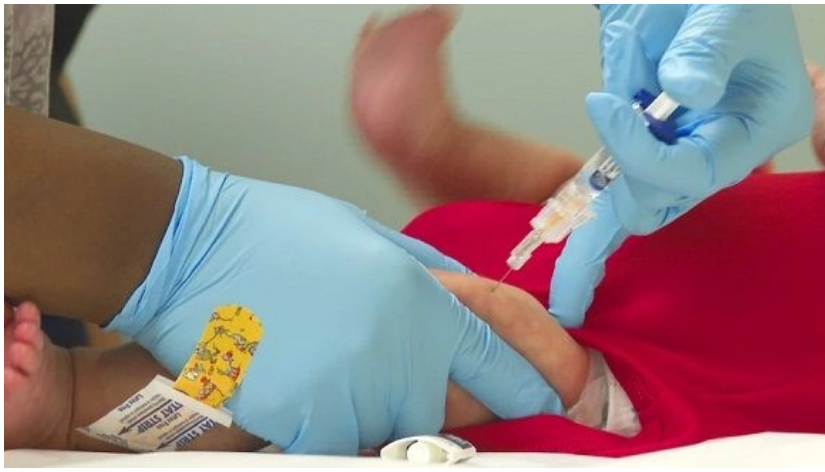
Fuente: Cubadebate. Disponible en https://bit.ly/3zDXRII

ONU informa que 25 millones de niños no recibieron vacunas de rutina en 2021

15 jul. Alrededor de 25 millones de niños en todo el mundo no han recibido vacunas de rutina contra enfermedades comunes como la difteria, en buena medida debido a que la pandemia de COVID-19 afectó los servicios regulares de salud o desató desinformación sobre las vacunas, informó Naciones Unidas.

En un informe publicado el viernes, la Organización Mundial de la Salud y el Fondo de las Naciones Unidas para la Infancia (Unicef, por sus siglas en inglés) señalan que el año pasado unos 25 millones de niños no

recibieron vacunas contra la difteria, el tétanos y la tosferina, un indicador de la cobertura de vacunación infantil, extendiendo una tendencia descendente que comenzó en 2019.



"Esta es una alerta roja para la salud infantil", dijo Catherine Russell, directora ejecutiva del Unicef.

"Somos testigos del mayor descenso sostenido en inmunización infantil en una generación", declaró, y añadió que las consecuencias se medirían en el número de vidas perdidas.

Los datos revelaron que la gran mayoría de los niños que no recibieron las vacunas viven en países en vías de desarrollo, en especial Etiopía, India, Indonesia, Nigeria y Filipinas. Aunque la cobertura de vacunación cayó en todas las regiones del mundo, los peores efectos se registraron en el este de Asia y la región del Pacífico.

Los expertos dijeron que este "retroceso histórico" en la cobertura de vacunación fue particularmente perturbador al ocurrir en un momento en que las tasas de desnutrición severa van en aumento. Por lo general, los niños desnutridos tienen sistemas inmunitarios más débiles y las infecciones como el sarampión les pueden resultar fatales.

"La convergencia de una crisis de hambruna con una creciente brecha de inmunización amenaza con crear las condiciones para una crisis de supervivencia infantil", indicó la ONU.

Los científicos señalaron que las bajas tasas de vacunación ya han resultado en brotes evitables de enfermedades como sarampión y poliomielitis.

En marzo de 2020, la OMS y organizaciones aliadas pidieron a los países suspender sus labores de erradicación de la polio en medio de la aceleración de la pandemia de COVID-19. Desde entonces, se han registrado decenas de epidemias de polio en más de 30 naciones.

"Esto es particularmente trágico después de que se logró un enorme progreso en las dos décadas previas a la llegada de la pandemia de COVID-19 para mejorar las tasas de vacunación infantil a nivel mundial", dijo Helen Bedford, profesora de salud infantil en el University College de Londres y que no formó parte del reporte de la ONU.

Agregó que la noticia es impactante, pero no sorprendente, e hizo notar que los servicios de inmunización suelen ser "una de las primeras víctimas" de los grandes desastres sociales o económicos.

El doctor David Elliman, pediatra del Hospital Infantil Great Ormond Street de Gran Bretaña, dijo que es crucial revertir la tendencia declinante de vacunación infantil.

"Los efectos de lo que sucede en una parte del mundo pueden repercutir en todo el planeta", dijo en un comunicado, resaltando la rápida propagación de la COVID-19 y, más recientemente, de la viruela símica. "Ya sea que actuemos por ética o por 'interés propio progresista', debemos poner a los niños en la cima de nuestra lista de prioridades".

Fuente: Cubadebate. Disponible en https://bit.ly/3Q5vDpc

Cape Verde interested in Cuba's biotech products

Jul 16. A delegation from Cape Verde that visited Cuba's Center for Genetic Engineering and Biotechnology (CIGB) showed interest in the products produced at the center, it was announced on Saturday.

According to the information posted on social networks by the scientific institution, the visiting delegation, made up of Minister of Education Amadeu Cruz, Deputy Minister of Public Health Evandro Monteiro, and Ambassador to Cuba Edna Barreto, were briefed about the CIGB's main projects.

According to the source, the Cape Verdean officials were informed on the peculiarities of the Mambisa vaccine candidate and the Abdala vaccine, with which most of the adult population in Cuba is protected against the SARS-CoV-2.

Monteiro was also interested in the leading product Heberprot-P, a drug to treat patients suffering from diabetic foot ulcers in advanced stages and at high risk of amputation.

He explained that in his country there is a high incidence of diabetes, and commented on the benefits of having a drug with such effects.

Fuente: Prensa Latina en inglés. Disponible en https://bit.ly/3PNM61G

Merck Announced Positive Study Results Evaluating V116 Pneumococcal Vaccine

Jul 16. Merck announced the presentation of positive results from the phase 1/2 study, V116-001, evaluating the immunogenicity, safety, and tolerability of V116, an investigational 21-valent pneumococcal conjugate vaccine (PCV), in pneumococcal vaccine-naïve adults aged 18 to 49 years in phase 1 and aged 50 years or older in phase 2.

"Our encouraging data at [the International Symposium on Pneumococci and Pneumococcal Diseases (ISPPD-12)] reflect the potential of V116 and Merck's tailored approach to developing pneumococcal vaccines to meet the specific needs of different populations," Eliav Barr, MD, senior vice president, head of global clinical development, and chief medical officer at Merck Research Laboratories, said in a statement.

"Consistent with our portfolio strategy, V116 is designed to specifically target serotypes that are responsible for 85% of all invasive pneumococcal disease in individuals aged 65 and over in the United States as of 2019. Importantly, the 8 serotypes in V116 that are not included in any currently licensed pneumococcal vaccine account for over 30% of this disease burden alone," Barr said.

In both populations, the vaccine met the primary immunogenicity objectives and was well-tolerated with an overall safety profile comparable to the Pneumovax 23 (Merck), a pneumococcal vaccine polyvalent, across all age groups.

In the phase 2 study, V116 demonstrated non-inferior immune responses to the Pneumovax 23 for all shared serotypes and superior immune responses for the serotypes included in V116 but not included in Pneumovax 23.

Investigators measured the responses 30 days post-vaccination by serotype-specific opsonophagocytic activity (OPA) geonomics mean titers (GMTs), a measure of functional body activity.

In the phase 1 part of the study, individuals aged 18 to 49 years were randomized 1:1:1: to receive either a single dose of V116-1, a 2-µg dose/each pneumococcal polysaccharide (PnPs), V116-2, a 4-µg dose/each PnPs, or Pneumovax 23.

Investigators found that the immune response at day 30 in V116-1 and V116-2 arms were generally comparable to Pneumovax 23 for the serotypes common to both vaccines. Additionally, the immune response was higher than Pneumovax 23 for the serotypes unique to V116.

At day 30, the OPA GMTs were higher in the V116-2 arm compared with the V116-1 arm for all serotypes except 9N.

The immunogenicity and safety data support the continued development of V116.

In phase 2, adults aged 50 years or older were randomized 1:1, stratified by age groups: aged 50 to 64 years, aged 65 to 74 years, and aged 76 years or older, to received either a single dose of V116 or Pneumovax 23. Pneumococcal serotype specific OPA and immunoglobulin G were measured prior to and 30 days postvaccination. V116 met noninferiority criteria compared with Pneumovax 23 for all shared serotypes and met superior criteria for the unique serotypes based on the assessment of the lower bound of the GMT ratio.

The safety was evaluated based on the proportion of participants with adverse events following vaccination.

Data from V116-001 and other data from Merck's pneumococcal vaccines portfolio were featured at ISPPD-12, which took place from June 19, 2022, through June 23, 2022. The full study results will be published in a scientific journal.

This year, the FDA granted V116 breakthrough designation for the prevention of invasive pneumococcal disease and pneumococcal pneumonia caused by Streptococcus pneumoniae serotypes in adults, including: 3; 6A/C; 7F; 8; 9N; 10A; 11A; 12F; 15A; 15B/C; 16F; 17F; 19A; 20; 22F; 23A; 23B; 24F; 31; 33F; and 35B.

This includes 8 serotypes not included in any licensed pneumococcal vaccine.

Fuente: Pharmacy Times. Disponible en https://bit.ly/3oJUdjK

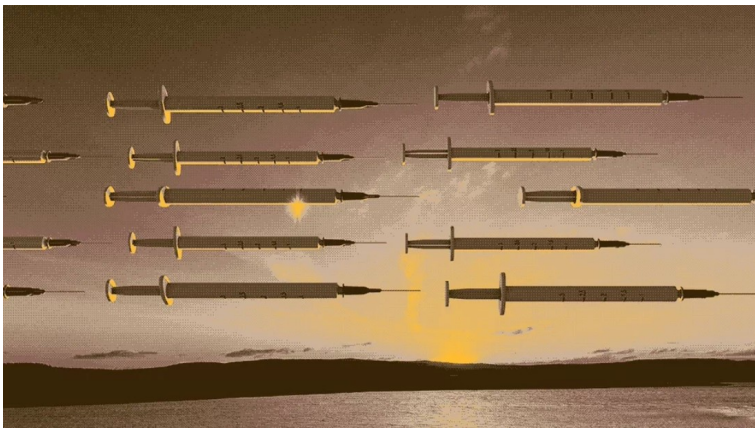
New COVID Vaccines Will Be Ready This Fall. America Won't Be.

Jul 17. Not so long ago, America's next COVID fall looked almost tidy. Sure, cases might rise as the weather chills and dries, and people flock indoors. But Pfizer and Moderna were already cooking up America's very first retooled COVID vaccines, better matched to Omicron and its offshoots, and a new inoculation campaign was brewing. Instead of needing to dose up three, four, even five times within short order, perhaps Americans could get just one COVID shot each year, matched roughly to the season's circulating strains. Fall 2022 seemed "the first opportunity to routinize COVID vaccines," says Nirav Shah, the director of the Maine Center for Disease Control and Prevention, and simultaneously recharge the country's waning enthusiasm for shots.

Now that fall is [checks notes] officially 10 weeks away, that once-sunny forecast is looking cloudier. The Biden administration could soon offer second booster shots to all adults—an amuse-bouche, apparently, for fall's Omicron-focused vaccines, which may not debut until October at the earliest, by which time BA.5 may be long gone, and potentially too late to forestall a cold-weather surge. In April, the FDA's leaders seemed ready to rally around a fall reboot; in a statement last month, Peter Marks, the director of the agency's Center for Biologics Evaluation and Research, struck a more dispirited tone. The coming autumn would be just a "transitional period," he said. Which checks out, given the nation's current timetable. "I see this fall shaping up to be more incremental," says Jason Schwartz, a vaccine-policy expert at Yale, "rather than that fresh start of let's begin again."

This, perhaps, is not where experts thought we'd be a year and a half ago, when the vaccines were fresh and in absurdly high demand. Since then, the tale of the U.S.'s COVID immunity has taken on a tragicomic twist: First we needed a vaccine; then we needed more people to take it. Now the problem is both.

Yes, fall's vaccine recipe seems set. But much more needs to happen before the nation can be served a full immunization entrée. "It's July, and we just heard that the FDA would like to see a bivalent vaccine," with the spike of BA.4 and BA.5 mixed with that of the OG SARS-CoV-2, Schwartz told me. When, exactly, will the updated shots be ready? How effective will they be? How many doses will be available? We just started prepping for this new inoculation course, and are somehow already behind.



Then, once shots are nigh, what will be the plan? Who will be allowed to get one, and how many people actually will? Right now, America's appetite for more shots is low, which could herald yet another round of lackluster uptake.

There's little time to address these issues. Fall "is, like, tomorrow," says Jacinda Abdul-Mutakabbir, an infectious -disease pharmacist at Loma Linda University, in California. Autumn, the season of viral illnesses and packed hospitals, already puts infectious-disease experts on edge. "We dread fall and winter season here," says Yvonne Maldonado, a pediatric-infectious-disease specialist at Stanford University. The system has little slack for more logistical mayhem. The world's third COVID autumn, far from a stable picture of viral control, is starting to resemble a barely better sequel to the uncoordinated messes of 2020 and 2021. The coming rollout may be one of America's most difficult yet—because instead of dealing with this country's vaccination problems, we're playing our failures on loop.

In an ideal version of this fall, revamped COVID vaccines might have been doled out alongside flu shots, starting as early as August or September, to prelude a probable end-of-year surge. But that notion may have always been doomed. At an FDA advisory meeting in early April, Marks told experts that the fall vaccine's composition should be decided no later than June. The agency didn't announce the new ingredients until the final day of last month. And it chose to include BA.4 and BA.5, the reigning Omicron subvariant—rather than the long-gone BA.1, which Pfizer and Moderna had been working with. That decision may further delay the shots' premiere, punting the delivery of some doses into November, December, or even later, depending on how the coming months go. If the goal is preventing a spate of seasonal sickness, that's "cutting it quite close," says Wilbur Chen, an infectious-disease physician and vaccine expert at the University of Maryland.

Whenever the shots do appear, they could once again be hard to keep in stock. Coronavirus funds are still (still!) stalled in congressional purgatory, and may never make it out. Although the Biden administration has agreed to purchase more than 100 million doses of Pfizer's revamped Omicron vaccine for the months ahead, federal officials remain worried that, as Ashish Jha, the nation's top COVID-response coordinator, has said, "we're not going to have enough vaccines for every adult who wants one" this fall.

Meanwhile, state and local leaders are awaiting marching orders on how much vaccine they'll be getting, and who will be eligible for boosters—intel they may not receive until after the updated shots are authorized. With a year and a half of experience under their belts, health workers know how to roll out COVID shots, says Chrissie Juliano, the executive director of the Big Cities Health Coalition. But distribution could still get tangled if "we're back to a situation of scarcity," she told me. The government may allocate shots based on states' populations. Or it could opt to dole out more doses to the regions with the highest vaccination rates, wasting fewer shots, perhaps, but widening gaps in protection.

More than two years into the pandemic, with the health-care system under constant strain and staff exhausted or frequently out sick, local communities across the nation may not have enough capacity to deploy fall shots en masse. In particular, pharmacies, a vaccination mainstay, will need to handle a simultaneous surge in demand for flu and COVID shots amid "a serious nationwide staffing shortage," Michael Hogue, the dean of Loma Linda University's pharmacy school, told me. A lack of funding only compounds these problems, by making it harder, for instance, to get doses to people who aren't insured. For that reason alone, "some of the contractors we've used in the past have not been able to keep up the same services," including vaccination drive-throughs, Phil Huang, the director of Dallas County Health and Human Services, told me. In Douglas County, Nebraska, pop-up vaccination sites are closing because not enough nurses can staff them. How do you get people vaccinated, Lindsay Huse, the county's health director, asked me, "when nobody wants to work for what you're paying, or they're just burned out?"

Even if more resources free up, greater shot availability may not translate to greater protection: Less than half of eligible vaccinated Americans, and less than a third of all Americans, have received a first booster dose, a pattern of attrition that experts don't expect to massively improve. And just how much of an immunity boost the updated shot will offer is still unclear. When the FDA recommended including BA.4/5's spike, it had limited data on the proposed recipe, collected in mice by Pfizer's scientists. And Pfizer and Moderna won't have time to generate rock-solid efficacy data in humans before the shots are authorized, then roll out in the fall. "So when we get these vaccines cranking off the assembly line, the case public-health officials may be able to make will be tempered," Schwartz told me. That these doses will offer big improvements on their predecessors is a decent bet. But believing that will, for the public, require a small leap of faith—at a time when Americans' trust in public health is already low.

America has had its share of COVID-vaccination victories. Hundreds of millions of people have gotten at least one dose. Distribution and administration have been streamlined. Communities have come together to bring shots to people in all sorts of venues. The local experts I spoke with felt confident that they'd rise to the challenge of this autumn, too. But if the shots themselves are not in demand, an infusion of supply-side resources alone won't be enough.

With two years of data on COVID vaccines' safety and efficacy, the case for dosing up has only strengthened, scientifically. But the public's interest and trust in the shots has fallen off as recommendations have shifted, often chaotically, and the number of necessary shots has ballooned. Even Americans who lined

up for their first doses are now over the idea of rolling up their sleeves again. Abdul-Mutakabbir hears often: "I got the two doses; that's what you told me I needed to do. I'm not doing anything else." In Camden County, New Jersey, a team led by Paschal Nwako, the region's health officer, has "knocked on doors, given out freebies and gift cards, visited people in all areas: grocery stores, shops, restaurants, schools, churches, shows," he told me. "We have exhausted all the playbooks." Still, people have refused.

The shifting culture around COVID in the U.S. has undoubtedly played a role. "We don't have the same sense of desperation that we did in December of 2020," Maldonado, of Stanford, told me. Americans are eager to put the pandemic behind them. And boosters are a tough sell in a nation that has dispensed with nearly all other COVID-prevention measures, and where political leaders are triumphantly declaring victory. "We start talking about COVID, and people's eyes glaze over," says Nathan Chomilo, a pediatrician and health-equity advocate in Minnesota. "The messaging will have to be fundamentally different, even, than last year's conversation about boosters."

When the vaccines were fresh, the popular narratives were tantalizing: The shots could permanently stop transmission in its tracks. But that was probably never going to pan out, says Luciana Borio, the FDA's former acting chief scientist. "Everybody that worked in the vaccine space," she told me, knew that the safeguards against infection "were not going to last. Their voices did not get listened to." Instead, the more appealing story took root, setting "expectations that could not be sustained." Disappointment ensued, fracturing public faith; mis- and disinformation seeped into the cracks. And no one, including the nation's leaders, was able to offer a compelling enough counternarrative to put the matter to rest.

An upgraded shot could be enticing to some pandemic-weary folks. "I know a lot of people, including my family members, who say, 'If it's the same vaccine, why would I have to get it?'" Nwako told me. "They want something different." Chomilo suggested that it may also be wise to stop counting how many shots people have gotten: "I hope no one 15 years from now is saying, I'm on my 15th booster." But nothing about these new vaccines promises to unify Americans around the why of COVID vaccines. At April's advisory meeting, Marks said the FDA knew that the U.S.'s current vaccination strategy couldn't go on forever. "We simply can't be boosting people as frequently as we are," he said. And yet, the nation's leaders now seem keen on okaying another round of original-recipe shots for adults under 50—without emphasizing other tactics to lower transmission rates.

Getting COVID shots, too, can be a chore. With so many brands, doses, schedules, and eligibility requirements in the matrix, it's "the most complex vaccine we have," says Erik Hernandez, the system director of clinical-pharmacy services at the University of Pittsburgh Medical Center. The fall will introduce even more snarls: Boosters are switching to an Omicron blend, but, contrary to what the FDA had initially planned, primary-series shots will be sticking with the original recipe. "That has massive operational implications," Maine CDC's Shah said, and could "increase the risk of errors." Nor have federal officials offered clarity on how long people getting shots now will have to wait before they're eligible for yet another this autumn. And Loma Linda University's Hogue thinks that it's very unlikely that children, especially the youngest ones, will be greenlit for bespoke Omicron doses this fall—another caveat to juggle. Some experts also worry that different states will once again select different rules on who can sign up for shots first. "You almost have to have a computer algorithm" to figure out what shots you need, Chen, of the University of Maryland, told me. Recommending an updated dose for everyone at once could be less confusing, but if shots are truly scarce, broad eligibility could simply put the privileged at the front of the queue.

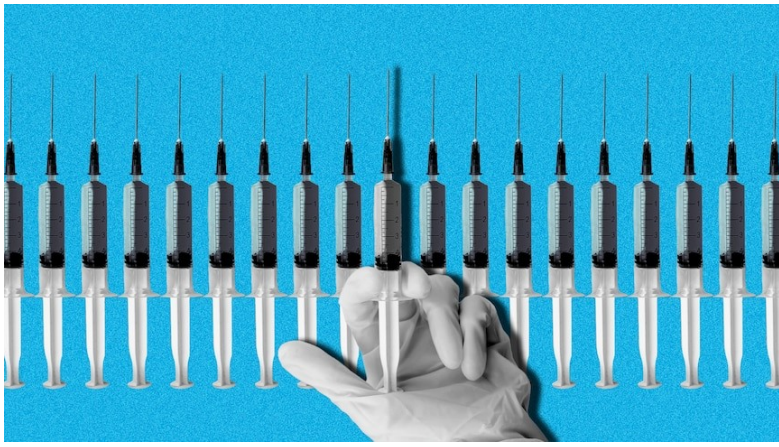
Less funding already means less community outreach, and less support for the people most vulnerable to COVID's worst. The country could easily default back to many of the failures of equity it's rehearsed before. Abdul-Mutakabbir, who's the lead clinician and pharmacist for the COVID-19 Equitable Mobile Vaccination Clinics, serving Black and Latino communities in San Bernardino County, says she's "very nervous" that large swaths of the country will once again "end up in this place where people of minority groups are going to be those that suffer, and people of lower socioeconomic status are going to be those that suffer."

An infusion of dollars would allow the government to purchase more vaccines; it would furnish states with the funds to hire more workers, expand their community clinics, and reach people who might otherwise never get their shots. But the underlying issue remains: The U.S. does not have a strong, coordinated vaccination plan. Experts still can't agree on how many shots people need, how often we'll need to update them, even what the purpose of a COVID vaccination should be: stopping just severe disease and death? Blocking as much infection as possible? "We don't really have a grand unified theory of what we're doing when we vaccinate," Shah told me, at least not one that's been properly messaged—a deficit that will keep hamstringing the country's immunization efforts.

Without a clear plan, this fall, contra Marks's prediction, may actually be a definitive one for COVID vaccines—just not in the way that the nation's leaders once hoped. A bad precedent, too, could be set, and make Americans' trust in these shots, and the people who offer them, even tougher to recoup.

Fuente: The Atlantic. Disponible en https://bit.ly/3oFO9cg

Australia has ordered millions more COVID vaccines than it needs. What are the options to deal with them?



Jul 17. Health officials and experts are assessing what to do with the tens of millions of COVID-19 vaccines Australia has purchased but does not need, with concerns some may simply go to waste.

Of the roughly 255 million vaccine doses the federal government has purchased, less than a quarter — roughly 60 million — have been administered around the country.

A further roughly 40 million doses have been donated around the Indo-Pacific region.

Some vaccine supplies, particularly Novavax, have hardly been touched.

Even with the increased uptake of fourth doses, Australia will be left with an enormous number of vaccines purchased but not required, particularly as variant-specific vaccines are procured and rolled out.

Health Minister Mark Butler has ordered a review of Australia's vaccine agreements, to be led by former Health Department secretary Jane Halton, which will look at what to do with excess vaccine supplies.

"If it does turn out that we have a surplus, then I'd want to have a range of options in front of us as to what to do with any surplus vaccines we were contractually required to take," he told a press conference announcing the review.

The federal government bought a range of vaccine options to provide cover should one or more fail to work, and built into that plan was the likelihood that if most worked, there would be plenty of doses left over.

Some experts argue while the early months of the pandemic were undoubtedly filled with uncertainty, it is clear Australia and other rich nations ordered far too many vaccines.

They argue the over-ordering of vaccines starved poorer countries of early access to doses, and those countries are still very slowly catching up.

And with a glut of vaccines across the globe, they now might not have anywhere to go.

A lot of Novavax, and not many available arms

One of Australia's largest vaccine deals was with Novavax, securing 51 million doses of the protein-based vaccine.

But Australian Immunisation Register figures show that supply has barely been touched.

Vaccine brand	Doses bought	Doses used (to nearest thousand)	Usage rate (per cent)
AstraZeneca	53,800,000	13,807,000	25.66
Pfizer	126,000,000	41,699,000	33.1
Moderna	25,000,000	4,612,000	18.45
Novavax	51,000,000	162,000	0.32

Note: Australia has donated more than 40 million doses within the Indo-Pacific, either from its own stockpile or procured through UNICEF.

As of late June, just 161,000 of the 51 million doses had been administered.

That is 0.3 per cent.

It is largely because by the time Novavax was approved for use and available to be rolled out, more than 95 per cent of Australians aged 16 and over were fully vaccinated.

And while the shot is now approved for use as a booster, it is not recommended, with the nation's immunisation expert panel preferring that mRNA vaccines like Pfizer and Moderna be rolled out instead.

It means the government could be left hunting for a home for more than 50 million Novavax doses.

Did Australia buy too many vaccines?

Australia was hardly alone in looking to lock in a range of different vaccine deals during 2020, and ordering more than enough to cover the population a few times over.

It was always made clear that there had to be contingencies in place in case certain vaccines did not work out.

But Deborah Gleeson, from La Trobe University, argued even after accounting for the uncertainty of 2020, it was clear the government ordered too many.

"Australia really participated in a bigger trend that we've seen worldwide of wealthy countries buying up far more doses of COVID-19 vaccines than they needed early on in the pandemic," she said.

"And this is a practice that unfortunately has continued."

Others are more generous about the government's approach.

Australian Global Health Alliance chair Brendan Crabb said in the early months of the pandemic the government needed a range of vaccines.

"I'm easy on the government, in this respect," he said.

"In the emergency of a pandemic, it makes sense to have given ourselves a lot of options.

"But we do need to review that very closely and decide how we can do better next time, because there's nothing more tragic than to literally throw out life-saving vials of vaccine."

Many tens of millions of vaccines ordered are yet to be delivered, and there are suggestions the government could look to review contracts with an eye to securing newer boosters, rather than standard vaccine doses.

The cost of the vaccine rush

Both agree rich countries broadly failed poorer countries early in the pandemic, and the consequences are clear to see.

According to Oxford University's Our World in Data project, just 16 per cent of people living in low-income countries are fully vaccinated.

Professor Crabb said while wealthy countries talked about vaccinating the globe, and made some significant efforts, the results speak for themselves.

"That's a failure on behalf of all of the rich countries," he said.

"It's not like Australia didn't do a lot. We did do a lot.

"But collectively, we didn't do enough."

While international vaccination efforts were hampered early by vaccine shortages, the situation has changed fast.

Across the globe, countries with more vaccines than they need are looking to give them away.

The United States has pledged to donate 1.1 billion vaccine doses by the end of the year, and it is already more than halfway there.

Most are being administered through the COVAX initiative, a global collaborative program to acquire and

provide vaccines equitably worldwide.

Those involved in the global vaccination effort say problems like strained health systems in developing countries and vaccine hesitancy are bigger problems than supply.

Dr Gleeson said when vaccines were sent abroad, they needed to be a long way from their expiry date, they should be a mix of brands, and they should come with support to administer them.

"We really need to think about the distribution of vaccines around the world in a much more systematic way, rather than just exporting excess doses to countries that will have difficulty using them at short notice," she said.

Fears nations will repeat mistakes with new vaccines

The Australian government has already begun talks with companies like Pfizer and Moderna about acquiring variant-modified boosters to roll out in future.

But there are already fears among some public health officials that wealthy countries will take the same approach to buying variant boosters as they did to the original COVID-19 vaccines.

Dr Gleeson said rich countries again seemed positioned to "hoard" vaccines, which would lead to the same outcomes seen the first time around.

"As we see more second and third-generation vaccines becoming available that perhaps are better at preventing transmission of COVID-19, we'll see the same sorts of bottlenecks in production and the same sorts of inequitable sharing happening with those vaccines unless wealthy countries are prepared to really think about what they've been doing and start doing things differently," she said.

Professor Crabb said the best way to avoid that situation was to use the COVAX mechanism, which was designed from the outset to provide equitable access, rather than leaving rich countries to bid against each other.

"The best way to procure and deliver those [doses] to the wider world is to do that together, as a partnership," he said.

"Pooling our resources and doing things in partnership with others is the best way to efficiently procure and deliver vaccines to the wider world.

Fuente: ABC News. Disponible en https://ab.co/3zFikGS

Ghana declara un brote de la enfermedad de Marburgo, un virus zoonótico de la misma familia que el Ébola

18 jul. Ghana ha declarado un brote de la enfermedad de Marburgo, un virus zoonótico de la misma familia que el Ébola, después de que se hayan confirmado dos casos sospechosos.

El Instituto Pasteur de Dakar (Senegal), que colabora con la Organización Mundial de la Salud, recibió muestras de los dos pacientes

y corroboró los resultados otro laboratorio de Ghana. Los pacientes, dos varones de 26 y 51 años sin parentesco, presentaron diarrea, fiebre, náuseas y vómitos, y murieron al poco de ingresar en el hospital.

Se han identificado más de 90 contactos, entre ellos trabajadores sanitarios y miembros de la comunidad, que están siendo vigilados.

"Las autoridades sanitarias han respondido rápidamente, adelantándose a la preparación de un posible brote. Esto es bueno porque, sin una acción inmediata y decisiva, Marburgo puede escaparse fácilmente de las manos", dijo la doctora Matshidiso Moeti, directora regional de la OMS para África.

La agencia de la ONU ha desplegado expertos y ha entregado equipos de protección personal, para reforzar la vigilancia, hacer pruebas, rastrear contactos y alertar a las comunidades. Además, en los próximos días se desplegará otro equipo que se encargará de la coordinación, la evaluación de riesgos y las medidas de prevención de la infección.

Marburgo es una fiebre hemorrágica vírica altamente infecciosa de la misma familia que el virus del Ébola. Es sólo la segunda vez que se detecta esta enfermedad zoonótica en África Occidental. La OMS se ha puesto en contacto con los países vecinos de alto riesgo y están en alerta.

Fuente: Cubadebate. Disponible en https://bit.ly/3PIIy0A

Quimi-Vio, la vacuna cubana contra el neumococo, es reconocido por la OMS

19 jul. QuimiVio, la vacuna cubana multivalente contra el neumococo, figura en el primer informe de la Organización Mundial de la Salud (OMS) sobre inmunógenos en desarrollo para prevenir infecciones causadas por bacterias resistentes a antimicrobianos, destacó en su cuenta oficial en Twitter el Instituto Finlay de Vacunas (IFV).

La vacuna protege contra siete de los serotipos más infecciosos de la bacteria de neumococo. (Endrys Correa Vaillant)

El documento fue publicado junto a un llamamiento urgente de la OMS para mejorar el uso de las vacunas existentes, desarrollar nuevas y acelerar las que se encuentran en las últimas fases de desarrollo pues la resistencia a los antimicrobianos (RAM) "un gran problema de salud pública que va en aumento".

En diversas fases de desarrollo clínico, la OMS identificó 61 vacunas candidatas, de ellas varias en las últimas fases de desarrollo. De esta manera, el producto cubano se inserta en el listado, junto a otras elaboraciones en ensayos clínicos diseñadas para combatir el neumococo. Entre los países que las producen sobresalen Estados Unidos, Reino Unido, Suiza, Austria, China y Brasil.

La vacuna cubana Quimi-Vio protege contra siete de los serotipos más infecciosos y de alta prevalencia mundial de la bacteria de neumococo, patógeno causante de la mayor parte de las neumonías y las meningitis bacterianas en los niños, además de infecciones del torrente sanguíneo, otitis media, sinusitis y bronquitis.

El doctor Rinaldo Puga Gómez, especialista de primer y segundo grados en Pediatría, e investigador clínico principal del proyecto desde 2012, precisó a principios de este año a Granma que en los ensayos el inyectable demostró seguridad, al generar eventos adversos esperados de carácter leve a nivel local.

Dentro de los estudios efectuados, resalta uno de intervención en la ciudad de Cienfuegos, entre 2017 y 2018, que abarcó al 91,3 % de los niños de uno a cinco años con posibilidad de ser vacunados.

En un ensayo clínico Fase II-III efectuado con 282 niños de 12 a 23 meses, el candidato vacunal cubano antineumococo, tuvo similar perfil de seguridad al reportado con la vacuna internacional Prevenar 13.

De acuerdo con declaraciones de Daniel García, director del Laboratorio de Síntesis Química y Biomolecular de la Facultad de Química de la Universidad de La Habana, a Prensa Latina, actualmente se retoma la producción de Quimi-Vio y próximamente comenzará su evaluación clínica generalizada.

En Twitter, el científico italiano Fabrizio Chiodo, asistente de investigación en el Consejo Nacional de Investigaciones Italianas (CNR) y colaborador del IFV, señaló que la propuesta cubana está “lista para los últimos pasos clínicos”.

Agregó, en referencia al desnivel global existente en el acceso a medicamentos que pueden salvar la vida, como este, que “No todos los países pueden pagar ~80$/dosis por un esquema de tres dosis”.

Las infecciones bacterianas resistentes están asociadas a casi 4,95 millones de muertes al año, de las que 1,27 millones se atribuyen directamente a la resistencia a los antimicrobianos, una de las diez principales amenazas de salud pública a las que se enfrenta la humanidad.

“El desarrollo de vacunas es costoso y supone un reto científico, a menudo con altas tasas de fracaso; por otro lado, para las vacunas candidatas que cumplen el proceso con éxito, los complejos requisitos regulatorios y de fabricación requieren más tiempo. Tenemos que aprovechar las lecciones extraídas del desarrollo de las vacunas anti-COVID-19 y acelerar la búsqueda de vacunas para hacer frente a la RAM,” dijo la Dra. Kate O'Brien, Directora del Departamento de Inmunización, Vacunas y Productos Biológicos de la OMS.

Fuente: CubaAhora. Disponible en https://bit.ly/3bau3Ux

No Cuban child died of COVID-19 after vaccination campaign

Jul 20. Before the vaccination campaign in children started, 18 infants between the ages of two and 18 years old had unfortunately lost their lives to COVID-19. No child died of this terrible disease in Cuba after the vaccination campaign in this population group began. This is the most relevant result of the Cuban vaccine Soberana, an immunogen of the Finlay Vaccine Institute.

Precisely, the Pedro Kourí Institute of Tropical Medicine presented the closing of the evaluation of the effectiveness and impact of the pediatric vaccination against COVID-19 in the country during the Tuesday meeting with the President of the Republic.

According to IPK doctor, María Eugenia Toledo Romaní, Soberana's main researcher, it was determined after a rigorous study that the effectiveness of the vaccine in the prevention of the symptomatic disease COVID-19 in children from two to five years old was 90.1 % during the Omicron wave in Cuba.

Meanwhile, the effectiveness of vaccination with Soberana in the prevention of severe COVID-19 disease in children aged two to 18 years was 95.8%.

This mean that there were more than 63,600 less casesto the Pasteur Institute of Iran, a scientific process equally successful in those distant lands., said the IPK specialist. This also means that more than 63,000 children and young people were prevented from transmitting the disease, which undoubtedly contributed to the control of the coronavirus epidemic in the country, said Vicente Vérez Bencomo, director of the IFV.

On this highly sensitive issue for the Cuban family, the President of the Republic considered the campaign was also decisive for the restart of the school year and, therefore, to resume normality in the lives of children. The vaccination has made possible the normal course and lack of complications in schools, said the Head of State.

In this meeting with the experts form the Ministry of Health (MINSAP), Vérez Bencomo detailed to the country's leadership the technological transfer of the production of Soberana vaccine to the Pasteur Institute of Iran, a scientific process equally successful in those distant lands.

Fuente: Granma en inglés. Disponible en https://bit.ly/3zHKFMD

Un nueva forma de vacuna intranasal crea anticuerpos para el VIH y la covid

20 jul. La mayoría de vacunas se administran en el músculo, aunque el VIH o el SARS-CoV-2 infectan a través de las mucosas, a las que se dirige una nueva técnica que ha logrado fuertes respuestas de anticuerpos contra esos virus en pruebas con ratones y primates no humanos.

Un estudio liderado por investigadores estadounidenses y que publica hoy Science Translational Medicine presenta un nueva plataforma de vacunación intranasal con la que se pueden administrar proteínas inmunizantes a través de la superficie de las mucosas.

Aunque las vacunas intranasales pueden provocar respuestas de anticuerpos más fuertes y protectoras que las inyectadas, hasta ahora la investigación se ha visto limitada por la escasa captación de la vacuna a través de los revestimientos de la mucosa.

Sin embargo, la nueva tecnología proporciona un “enfoque prometedor” para administrar vacunas a través de la nariz y otras superficies de la mucosa en lugar de las inyecciones tradicionales, señala la revista científica.

El equipo investigador, encabezado por Brittany Hartwell, del Instituto Tecnológico de Massachusetts (MIT), ha creado una estrategia que permite a las proteínas inmunoestimulantes viajar a través de las superficies de las mucosas.

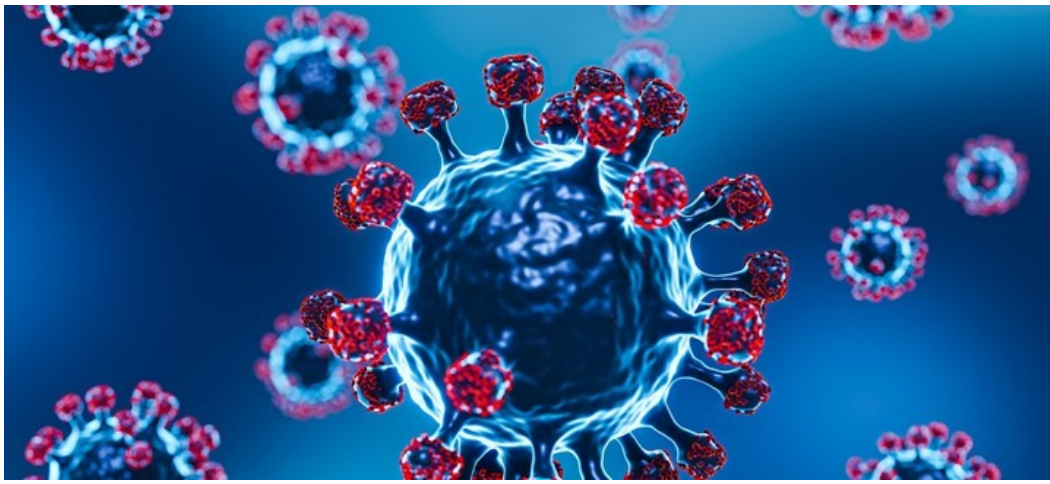
Para ello usaron proteínas amph, que consisten en proteínas virales conjugadas con un extremo soluble en agua gracias al cual se une a la albúmina.

La albúmina es una proteína de la sangre que atraviesa la mucosa al interactuar con el receptor neonatal para el FC, que la transporta bidireccionalmente a través del epitelio de la mucosa, lo que la hace adecuada como mediadora de la administración de vacunas.

La amph se puede formular con la proteína Env gp120, que está en el envoltorio externo del VIH, o con la proteína del dominio de unión al receptor (RBD) del SARS-Cov2, que es la que se une a las células humanas.

Fuente: SWI swissinfo. Disponible en https://bit.ly/3bbqM7q

Estudian la variabilidad genética del SARS-CoV-2 en España durante los dos primeros años de la pandemia



22 jul. Un nuevo trabajo liderado por África Holguín, investigadora del CIBERESP en el Instituto de Investigación IRYCIS revela cómo ha evolucionado el virus SARS-CoV-2, causante del COVID-19, en España durante los dos primeros años de la pandemia (febrero de 2020-enero 2022).

Durante el periodo de estudio, seis linajes principales se extendieron con éxito en España entre 2020 y 2022: A.2, B.1, B.1.177, B.1.1.7 (Alpha), B.1.617.2 (Delta) y B.1.1.529 (Omicron) con distinta presencia en las diferentes Comunidades Autónomas. La Dra. Holguín, junto a sus colaboradores la Dra Paloma Troyano -Hernáez y el experto en bioinformática Roberto Reinosa, han llevado a cabo el estudio más completo hasta la fecha sobre la variabilidad genética de las 26 proteínas del SARS-CoV-2, realizado con más de 70.000 secuencias de pacientes procedentes de todas las Comunidades Autónomas de España. Los resultados permiten comprender mejor la evolución viral y la identificación de regiones esenciales para el virus que pueden ser elegidas como potenciales dianas diagnósticas terapéuticas y vacunales.

El análisis se llevó a cabo con un programa informático (EpiMolBio) diseñado en el propio laboratorio, el Laboratorio de Epidemiología Molecular del VIH del Instituto Ramón y Cajal para la Investigación Sanitaria (IRYCIS) y Servicio de Microbiología del Hospital Universitario Ramón y Cajal de Madrid. Este programa es capaz de analizar mutaciones en más de 100.000 secuencias de cualquier patógeno o proteína de interés, y ha sido ya empleado para el análisis de secuencias de SARS-CoV-2 de la pandemia global

En las más de 70.000 secuencias de SARS-CoV-2 disponibles, la frecuencia global de mutación fue de 1,24x10-5, con una elevada conservación media (>99%), siendo las proteínas no estructurales las más conservadas. Algunos de los cambios detectados estaban relacionados con evasión del sistema inmune, mientras otros se asociaban a un aumento de infectividad viral. Solo se detectó una secuencia con una deleción en uno de los residuos de la proteasa viral principal que participan en la unión al inhibidor de la proteasa Paxlovid, recientemente recomendado por la OMS para el tratamiento de pacientes con enfermedad leve o moderada y en riesgo de hospitalización.

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Fuente: Centro de Investigación Biomédica en Red ciber isciii. Disponible en https://bit.ly/3OJ5FqD

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Estrategia de búqueda: *Vaccine in the title or abstract AND 20220712:20220722 as the publication date 36 records*

1.WO/2022/155653VACCINATION AND ADAPTIVE IMMUNE SUPPORT PROTOCOL, FORMULATION AND METHOD OF USE
WO - 21.07.2022
Clasificación Internacional A23L 1/304 Nº de solicitud PCT/US2022/070164 Solicitante MORGAN, Sarah, N. Inventor/a MORGAN, Sarah, N.
The present invention relates generally to a combination formulation and protocol (1) supplement for nutritional support during vaccination and adaptive immune response with (2) a specific regimen and duration of supplement administration and (3) precisely timed vaccination delivery, together, for the maximization of vaccine effectiveness. Specifically, the nutritional supplement that is the present invention is directed toward supporting either the unique dietary requirements of those receiving a vaccination or a vaccine required nutrient supplantation wherein a specified supplement administration is coupled to a specifically timed vaccine delivery to achieve an optimum micronutrient state for an individual who is receiving, processing and utilizing a vaccine whereby a patient's immune system is fortified to optimally facilitate vaccine uptake and utilization. It is another goal of this invention to minimize resulting undesired untoward effects that may be associated with vaccination or may occur at any time after the receipt of a vaccine.

2.WO/2022/152204STABLE PREPARATION OF HUMAN PAPILLOMAVIRUS VIRUS-LIKE PARTICLE VACCINE
WO - 21.07.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/CN2022/071782 Solicitante SINOCELLTECH LIMITED Inventor/a LIU, Yan
Provided is a stable preparation of a human papillomavirus virus-like particle vaccine. The stable preparation is composed of a human papillomavirus virus-like particle, a buffer solution, an osmotic pressure regulator, a surfactant and an aluminum adjuvant, wherein the components of the vaccine comprise HPV virus-like particles assembled by L1 proteins of HPV types 6, 11, 16, 18, 31, 33, 45, 52 and 58, and one or more HPV virus-like particles assembled by L1 proteins of other pathogenic HPV types. The preparation can enhance the stability of the vaccine and prolong the validity period of the vaccine in an aqueous preparation.

3.WO/2022/154149VACCINE COMPOSITION USING EXTRACELLULAR VESICLE
WO - 21.07.2022

Clasificación Internacional A61K 39/385 Nº de solicitud PCT/KR2021/000715 Solicitante EXCELLENCE CO., LTD. Inventor/a KWON, Ki Hwan

The present invention relates to a vaccine composition using activated extracellular vesicles and, more specifically, to a prophylactic or therapeutic vaccine composition comprising extracellular vesicles and an antigen loaded into the extracellular vesicles. In the present invention, extracellular vesicles derived from activated immune cells having an antigen protein loaded thereinto were identified to have the excellent effect of producing an antigen-specific neutralizing antibody and inducing a T cell response as a result of the immunization of mice by injection therewith. When being stored at room temperature or in a refrigeration condition after lyophilization, the extracellular vesicles were experimentally confirmed to have excellent stability and antibody production effects. From the data, the vaccine composition according to the present invention is expected to serve as a platform provided with excellent antigen-specific immune response induction and stability and applicable to various diseases, finding advantageous utilization in the field of developing vaccines for preventing or treating various target diseases including infectious diseases and cancers.

4.4026559SAISONALER INFLUENZA-IMPFSTOFF ZUR INDUKTION VIRUSSPEZIFISCHER ANTIKÖRPER IN DIE NASENHÖHLE

EP - 13.07.2022

Clasificación Internacional A61K 39/145 Nº de solicitud 20860453 Solicitante DENKA COMPANY LTD Inventor/a MITSUMATA RYOTARO

Provided is a seasonal influenza vaccine having a higher efficacy than a split vaccine. A seasonal influenza vaccine which induces virus-specific antibodies in the nasal mucosa, comprises inactivated whole influenza virus particles as an active ingredient, and is to be administered intradermally at dose per administration of 15 μg HA or more per strain as antigen.

5.4025245IMPFSTOFF ZUR BEHANDLUNG VON KREBS UND VERFAHREN ZUR HERSTELLUNG DURCH STRESSUMPROGRAMMIERUNG

EP - 13.07.2022

Clasificación Internacional A61K 39/00 Nº de solicitud 20775760 Solicitante VCELL THERAPEUTICS INC Inventor/a VACANTI CHARLES A

A method has been developed to enhance the efficacy of cancer vaccines by activating the immune system against a greater variety of antigens expressed in the tumor cells. In this modification, the vaccine is created against not only the more mature cancer cells, but also cancer stem cells (CSCs), that act as tumor propagating cells, and can also be made against as the more mature progeny of the CSCs that are normally present within the malignant tumors in numbers which are too low to effectively manufacture a vaccine against their antigens, but which are responsible for recurrence of the malignant tumor. These include pluripotent and stem cells induced from cells in a tumor biopsy by exposure to stress inducing agents that cause the cells to almost die, thereby causing cells to de-differentiate. The method greatly increases the variety of the tumor antigens at which the vaccine is targeted.

6.4026558ZUSAMMENGESETZTES PROTEINMONOMER MIT NICHT-STRUKTURELLEM VIRUSPROTEIN DARAUF, AGGREGAT DES ZUSAMMENGESETZTEN PROTEINMONOMERS UND KOMBINATIONSIMPFSTOFF MIT AGGREGAT ALS WIRKSTOFF

EP - 13.07.2022

Clasificación Internacional A61K 39/12 Nº de solicitud 20856780 Solicitante TOKYO INST TECH Inventor/a UENO TAKAFUMI

The present invention addresses the problem of establishing a means for providing a component vaccine that can elicit immunity to a non-structural protein. The present inventors found that this problem can be solved by providing a component vaccine that comprises, as an active ingredient, an aggregate comprising

a trimer and/or a hexamer of a molecular needle on which a non-structural protein of a pathogenic virus is supported.

7.WO/2022/149609CONJUGATED PROTEIN MONOMER CARRYING PEPTIDE DERIVED FROM PATHOGENIC MICROORGANISM COMPATIBLE WITH MHC MOLECULE, AGGREGATE OF SAID MONOMERS, COMPONENT VACCINE CONTAINING SAID AGGREGATE AS ACTIVE INGREDIENT, AND METHOD FOR ACQUIRING INFORMATION ON SECRETION OF PHYSIOLOGICALLY ACTIVE SUBSTANCE AFTER IMMUNIZATION
WO - 14.07.2022
Clasificación Internacional C12N 15/33 Nº de solicitud PCT/JP2022/000327 Solicitante TOKYO INSTITUTE OF TECHNOLOGY Inventor/a UENO Takafumi
The present invention addresses the problem of establishing a means for providing a component vaccine that can achieve both of the induction of cellular immunity mainly associated with MHC class I and the induction of humoral immunity associated with MHC class II selectively or intensively. The present inventors have found that the problem can be solved by providing a component vaccine which contains, as an active ingredient, aggregates each comprising a trimer and/or a hexamer of a molecular needle carrying a peptide capable of binding to MHC class I and/or a peptide capable of binding to MHC class II. The present inventors have also discovered an information acquisition method, in which the change in secretion of a physiologically active substance, e.g., cytokine, in an animal of interest after the infection with a target microorganism is detected to evaluate an attribute of MHC class, e.g., a peptide of interest or the like.

8.WO/2022/150839IMMUNE MODULATION BY MESENCHYMAL STEM CELLS
WO - 14.07.2022
Clasificación Internacional A61K 35/28 Nº de solicitud PCT/US2022/070093 Solicitante VITRO BIOPHARMA, INC. Inventor/a ZAMORA, Jack
A method is disclosed of treating a patient having viral pneumonia secondary to COVID-19 using IV infusion of mesenchymal stem cells in patients receiving COVID-19 vaccination. The vaccine may be Pfizer, Moderna, Johnson & Johnson or Astra Zenica COVID-19 vaccine, for example and the patient may be treated with an mRNA-based vaccine followed by IV-infusion of 100 million MSCs. MSCs can be derived from patients who have been exposed to the COVID-19 virus. Moreover, the MSCs may be derived from the umbilical cord of a donor.

9.20220218817IMMUNE MODULATION BY MESENCHYMAL STEM CELLS
US - 14.07.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17647401 Solicitante Vitro Biopharma, Inc. Inventor/a Jack Zamora
A method is disclosed of treating a patient having viral pneumonia secondary to COVID-19 using IV infusion of mesenchymal stem cells in patients receiving COVID-19 vaccination. The vaccine may be Pfizer, Moderna, Johnson & Johnson or Astra Zenica COVID-19 vaccine, for example and the patient may be treated with an mRNA-based vaccine followed by IV-infusion of 100 million MSCs. MSCs can be derived from patients who have been exposed to the COVID-19 virus. Moreover, the MSCs may be derived from the umbilical cord of a donor.

10.WO/2022/150899CHIMERIC PROTEIN, KIT, METHOD OF DIAGNOSIS OF LEISHMANIASIS, USE OF A CHIMERIC PROTEIN, VACCINE COMPOSITION AGAINST VISCERAL LEISHMANIASIS AND USE OF A VACCINE COMPOSITION
WO - 21.07.2022
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/BR2022/050013 Solicitante FUNDAÇÃO OSWALDO CRUZ Inventor/a FERNANDES, Ana, Paula, Salles, Moura

The present invention relates to the field of diagnostic medicine, vaccinology and biotechnology. More specifically, the present invention relates to a chimeric protein for use in diagnosing visceral leishmaniasis in humans and dogs, including individuals coinfected with the human immunodeficiency virus (HIV) and a vaccine containing said chimeric protein for prophylactic or therapeutic use.

11.20220218814A VACCINE COMPRISING A NANOPARTICLE ENCAPSULATING EPITOPES AND ADJUVANT FOR NEUTRALIZING VIRUS INFECTION
US - 14.07.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17609822 Solicitante ACADEMIA SINICA Inventor/a Che-Ming Jack HU
We utilized a biocompatible hollow polymeric nanoparticle that coencapsulates T cell epitope peptides and oligodeoxynucleotide (ODN) CpG, and designed immunization strategies to evaluate its protectivity against influenza viruses in mice. This nanoparticle-based peptide vaccine adjuvanted with CpG stimulated robust antigen-specific CD4 and CD5 T cell immunity, but only caused minimal adverse effects compared with crude mixture of peptides and CpG. We used two peptides derived from the nucleocapsid protein (NP), MHC class I-restricted NP366-374 and MHC class II-restricted NP311-325. This novel nanoparticle vaccine with two epitope peptides plus CpG induced robust and fully protective T cell immunity against influenza viruses. We demonstrates the utility of this novel hollow nanoparticle with co-encapsulation of only a pair of CD4+ and CD8+ T cell-stimulating influenza viral peptides and CpG in establishing near-sterilizing protective resident T cell immunity against heterosubtypic IAV infections, a critical step towards the development of universal influenza T cell vaccines.

12.20220218809IDO ACTIVITY AS A MARKER OF TUMOR IMMUNE ESCAPE AND IDO INHIBITORS AS A MEANS OF ENHANCING T CELLS RESPONSE TO ANTIGEN SPECIFIC VACCINE
US - 14.07.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17291159 Solicitante Wisconsin Alumni Research Foundation Inventor/a Douglas G. McNeel
The present invention provides compositions and methods of treating prostate cancer using a combination of a DNA vaccine, PD-1 inhibitor and an IDO inhibitor. Further, methods of measuring IDO activity as a way to identify a subpopulation of subjects with prostate cancer that may benefits from the treatment methods described herein are provided.

13.WO/2022/155649HERPES SIMPLEX VIRUS TYPE 1 DERIVED INFLUENZA VACCINE
WO - 21.07.2022
Clasificación Internacional A61K 35/763 Nº de solicitud PCT/US2022/070157 Solicitante BOARD OF SUPERVISORS OF LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE Inventor/a RIDER, Paul Jay Fannin
Provided are embodiments of a recombinant nucleic acid comprising a nucleotide sequence encoding a live-attenuated chimeric Herpes Simplex Virus Type-1 (HSV-1) VC2 virus and a nucleotide sequence encoding a heterologous polypeptide operably linked to a promoter, wherein the heterologous polypeptide can replace the glycoprotein C (gC) openreading frame (ORF) in VC2, and wherein the nucleotide sequence encoding the heterologous polypeptide can encode the influenza virus hemagglutinin A or a fragment thereof. The constructs may be incorporated in a vaccine effective in generating antibodies against influenza hemagglutinin.

14.4025246IMMUNOGENE ZUSAMMENSETZUNGEN GEGEN DARMERKRANKUNGEN UND VERFAHREN ZU IHRER HERSTELLUNG
EP - 13.07.2022
Clasificación Internacional A61K 39/112 Nº de solicitud 20781107 Solicitante SERUM INSTITUTE OF INDIA PVT LTD Inventor/a DHERE RAJEEV MHALASAKANT

The present disclosure relates to novel immunogenic monovalent and multivalent polysaccharide-protein conjugate vaccine compositions comprising a polysaccharide selected from *Salmonella* serovar strains *S. typhi; S. paratyphi A*; *S. typhimurium and S. enteritidis* and alternative improved methods of polysaccharide fermentation, polysaccharide purification, polysaccharide-protein conjugation and stable formulation. The present disclosure further relates to methods for inducing an immune response in subjects against *Salmonella typhi* and non-typhi related diseases and/or for reducing or preventing *Salmonella typhi* and non-typhi related diseases in subjects using the compositions disclosed herein. The vaccine elicits bactericidal antibodies and is useful for prevention of gastroenteritis, enteric and typhoid fever.

15.20220218711COMBINATION OF A TLR7 MODULATING COMPOUND AND AN HIV VACCINE
US - 14.07.2022
Clasificación Internacional A61K 31/519 Nº de solicitud 17610040 Solicitante Gilead Sciences, Inc. Inventor/a Romas Geleziunas
The present disclosure describes methods, compositions, and kits related to the combination of a TLR7 modulating compound and an HIV vaccine. The combination can be used in a method of treating or preventing an HIV infection in a human.

16.4026568LYOPHILISIERUNG VON RNA
EP - 13.07.2022
Clasificación Internacional A61K 48/00 Nº de solicitud 21212918 Solicitante CUREVAC REAL ESTATE GMBH Inventor/a KETTERER THOMAS
The present invention is directed to the field of RNA formulation, in particular to lyophilization of RNA. The invention provides a method for lyophilization of RNA. The present invention further concerns a lyophilized composition obtainable by the inventive method, a pharmaceutical composition, a vaccine and a kit or kit of parts. Moreover, the present invention provides a novel use of a lyoprotectant for lyophilizing RNA, the use of the inventive method in the manufacture of a medicament as well as the first and second medical use of the composition obtainable by the inventive method, the pharmaceutical composition, the vaccine or the kit or kit of parts according to the invention.

17.WO/2022/152771COMPOSITION COMPRISING ENGINEERED PLANT-DERIVED EXTRACELLULAR VESICLES AND USE THEREOF AS A VACCINE
WO - 21.07.2022
Clasificación Internacional A61K 9/51 Nº de solicitud PCT/EP2022/050590 Solicitante EVOBIOTECH S.R.L. Inventor/a CAMUSSI, Giovanni
The present invention provides a composition comprising non-immunomodulating, engineered, plant-derived extracellular vesicles (EVs) for use as a vaccine, said vesicles being loaded with an exogenous nucleic acid molecule encoding a protein antigen. There is further provided a method for the preparation of said composition, which makes use of one or more polycationic substances and one or more sugar molecules.

18.WO/2022/152818MEASLES-HIV OR MEASLES-HTLV VACCINE
WO - 21.07.2022
Clasificación Internacional A61P 31/12 Nº de solicitud PCT/EP2022/050693 Solicitante VIROXIS Inventor/a HEIDMANN, Thierry
The invention relates to recombinant measles virus expressing Immunodeficiency virus (IV) or HTLV polypeptides, and concerns in particular immunogenic immunodeficiency virus particles expressed by a measles virus and/or virus like particles (VLPs) that contain proteins of at least one immunodeficiency virus or Human T-lymphotropic virus. These particles may be recombinant infectious particles able to replicate in a host after an administration. The invention provides means, in particular nucleic acid constructs, vectors, cells and rescue systems to produce these recombinant infectious particles. The invention also

relates to the use of these recombinant infectious particles, in particular under the form of a composition, more particularly in a vaccine formulation, for the treatment or prevention of an infection by HIV or HTLV.

19.20220218815CORONAVIRUS VACCINE
US - 14.07.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17526912 Solicitante CureVac AG Inventor/a Susanne RAUCH
The present invention is directed to a nucleic acid suitable for use in treatment or prophylaxis of an infection with a coronavirus, preferably with a Coronavirus SARS-CoV-2, or a disorder related to such an infection, preferably COVID-19. The present invention is also directed to compositions, polypeptides, and vaccines. The compositions and vaccines preferably comprise at least one of said nucleic acid sequences, preferably nucleic acid sequences in association a lipid nanoparticle (LNP). The invention is also directed to first and second medical uses of the nucleic acid, the composition, the polypeptide, the combination, the vaccine, and the kit, and to methods of treating or preventing a coronavirus infection, preferably a Coronavirus infection.

20.2022204585Vaccine constructs and uses thereof against staphylococcus infections
AU - 14.07.2022
Clasificación Internacional Nº de solicitud 2022204585 Solicitante Socpra Sciences et Genies S.E.C. Inventor/a Brouillette, Éric

21.WO/2022/148374FULLY HUMAN BROAD-SPECTRUM NEUTRALIZING ANTIBODY 76E1 AGAINST CORONAVIRUS, AND USE THEREOF
WO - 14.07.2022
Clasificación Internacional C07K 16/10 Nº de solicitud PCT/CN2022/070309 Solicitante CENTER FOR EXCELLENCE IN MOLECULAR CELL SCIENCE, CHINESE ACADEMY OF SCIENCES Inventor/a SUN, Bing
Disclosed are a fully human broad-spectrum neutralizing antibody against coronavirus, and the use thereof. Specifically disclosed are a fully human monoclonal antibody against an S2 region of a coronavirus S protein, a nucleic acid sequence encoding the antibody, and a preparation method therefor. The antibody can effectively bind to and neutralize a variety of coronaviruses in a broad spectrum manner, and can be used for preventing and treating diseases related to coronavirus infection, such as SARS-CoV-2. Further disclosed is the potential use thereof in vaccine design.

22.20220221455ANTIGEN BINDING PROTEINS AND ASSAYS
US - 14.07.2022
Clasificación Internacional G01N 33/569 Nº de solicitud 17604008 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a Nathalie NORAIS
The present invention relates to the field of antigen binding proteins and the use of such antigen binding proteins in an assay. More particularly, it relates to antigen binding proteins which bind to an epitope of Protein E and antigen binding proteins which bind to an epitope of PilA. The present invention also relates to assays (particularly in vitro assays) for assessing binding to Protein E and/or PilA and the potency of vaccines containing Protein E and/or PilA. In particular the invention relates to in vitro relative potency assays used in the release of a vaccine to the public.

23.WO/2022/149549SARS-COV-2 PROTEIN-DERIVED PEPTIDE AND VACCINE CONTAINING SAME
WO - 14.07.2022
Clasificación Internacional C12N 15/50 Nº de solicitud PCT/JP2021/048846 Solicitante ONCOTHERAPY SCIENCE, INC. Inventor/a KIYOTANI, Kazuma
The present invention provides a SARS-CoV-2 protein-derived epitope peptide capable of inducing cytotoxic T cells. The present invention also provides: a polynucleotide coding for the peptide; an antigen-

presenting cell presenting the peptide; a cytotoxic T cell (CTL) targeting the peptide; and a method for inducing the antigen-presenting cell or the CTL. The present invention further provides a composition or a pharmaceutical composition containing the foregoing as an active ingredient. Furthermore, the present invention provides a method for treating and/or preventing the coronavirus infectious disease, and/or a method for suppressing worsening of the disease, using the peptide, the polynucleotide, the antigen-presenting cell, the cytotoxic T cell, or the pharmaceutical composition according to the present invention. Also provided is a method for inducing an immune response to a coronavirus infection. Also provided is a method for checking the history of a coronavirus infection by detecting a TCR sequence in a target.

24.WO/2022/150719ANTIGENIC COMPOSITION(S) AND METHOD(S) AGAINST PORPHYROMONAS GINGIVALIS FOR THE PREVENTION AND/OR TREATMENT OF INFECTION AND/OR DISEASES
WO - 14.07.2022
Clasificación Internacional A61K 8/64 Nº de solicitud PCT/US2022/011853 Solicitante KEYSTONE BIO, INC. Inventor/a NARA, Peter L.
Vaccines for Porphyromonas gingivalis are described. Also provided are methods of treating or preventing a disorder or disease by administering the vaccine.

25.WO/2022/154576EXOSOMES COMPRISING CORONAVIRUS-DERIVED ANTIGEN PROTEIN OR GENE ENCODING SAME PROTEIN, AND USE OF SAME
WO - 21.07.2022
Clasificación Internacional A61K 39/385 Nº de solicitud PCT/KR2022/000736 Solicitante EXCELLENCE CO., LTD. Inventor/a KWON, Ki Hwan
The present invention relates to exosomes comprising a coronavirus-derived antigen protein or a gene encoding the protein, and to a use of the exosomes. In the present invention, using activated immune cells loaded with an antigen protein or mRNA, a mouse was administered with exosomes derived therefrom and immunized, and as a result, excellent effects of generating antigen-specific neutralizing antibodies and inducing T cell responses were identified, and when stored in room-temperature and refrigeration conditions after freeze-drying, excellent stability and an antigen generating effect were confirmed through experiments. From here, the exosomes according to the present invention, or a vaccine composition comprising same, may serve as a platform applicable to various diseases that has stability and an excellent effect of inducing antigen-specific immune responses, and as such, can be expected to be advantageously utilized in the development of prophylactic or therapeutic vaccines for various diseases including infectious diseases, and in particular, coronavirus infections.

26.WO/2022/150648OVARIAN CANCER VACCINE
WO - 14.07.2022
Clasificación Internacional A61P 35/00 Nº de solicitud PCT/US2022/011706 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a STEINMETZ, Nicole, F.
Provided are compositions, methods and uses relating to an adjuvant which comprises, or consists essentially of, or consists of a cowpea mosaic virus (CPMV) particle and its combination with one or more antigens or cells, such as an irradiated cancer cell comprising the one or more antigens.

27.20220218818SMALLPOX VACCINE AND STEM CELLS FOR TREATMENT OF DISEASE
US - 14.07.2022
Clasificación Internacional A61K 39/275 Nº de solicitud 17615661 Solicitante IMMUNOLUX INTERNATIONAL CORP. Inventor/a Aladar SZALAY
Described herein are methods and compositions for treating an inflammatory disease or infectious disease in a subject in need thereof by administering to the subject a poxvirus and a stem cell, wherein the disease is not a cancer. The disease may be, for example, a chronic inflammatory disease (e.g., an autoimmune disease).

28.20220218789Nogapendekin Alfa-Inbakicept For Immune Stimulant Therapies And Treatment Of Viral Infections
US - 14.07.2022
Clasificación Internacional A61K 38/17 Nº de solicitud 17594940 Solicitante Nant Holdings IP, LLC Inventor/a John LEE
Pharmaceutical compositions comprising an IL-15 agonist or derivative thereof, such as nogapendekin alfa-inbakicept (NAI), are provided herein for enhancing immunity and for inhibiting viral infections. The IL-15 agonist or derivative thereof may be used to increase proliferative capacity and/or cytotoxicity of various immune competent cells, and especially NK and cytotoxic T cells in healthy individuals. The IL-15 agonist or derivative thereof may be used alone or in combination with one or more other therapeutic agents, such as in conjunction with a vaccine.

29.4025244AUF TUMOR-NEOANTIGENE PEPTIDE ABZIELENDE IMMUNTHERAPIE
EP - 13.07.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 20771475 Solicitante INST CURIE Inventor/a AMIGORENA SEBASTIAN
The present disclosure relates to a method for selecting a tumor neoantigenic peptide wherein said method comprises: - a step of identifying, among mRNA sequences from cancer cells of a subject, a fusion transcript sequence comprising a transposable element (TE) sequence and an exonic sequence, and including an open reading frame (ORF), and - a step of selecting a tumor neoantigenic peptide of at least 8 amino acids, encoded by a part of said ORF of the fusion transcript sequence, wherein said ORF overlaps the junction between the TE and the exonic sequence, is pure TE and/or is non-canonical, and wherein said tumor neoantigenic peptide binds to at least one Major Histocompatibility Complex (MHC) molecule of said subject. The present disclosure also relates to tumor neoantigenic peptide obtained according to the present method, vaccine or immunogenic composition, antibodies and immune cells derived thereof and their use in therapy of cancer.

30.WO/2022/148954VACCINE COMPOSITION AGAINST STREPTOCOCCUS PNEUMONIAE INFECTION
WO - 14.07.2022
Clasificación Internacional A61K 39/09 Nº de solicitud PCT/GB2022/050003 Solicitante THE UNIVERSITY OF LIVERPOOL Inventor/a KADIOGLU, Aras
There is provided an immunogenic composition comprising at least two antigenic determinants, wherein the antigenic determinants are derived from at least two proteins selected from ABC-T, PavA and ZmpB of a Streptococcus pneumoniae bacterium; an immunogenic composition comprising a genetic construct or constructs encoding at least two antigenic determinants, wherein the antigenic determinants are derived from at least two proteins selected from ABC-T, PavA and ZmpB of a Streptococcus pneumoniae bacterium; and an immunogenic composition comprising at least one antigenic determinant and a genetic construct or constructs encoding at least one different antigenic determinant, wherein the antigenic determinants are derived from at least two proteins selected from ABC-T, PavA and ZmpB of a Streptococcus pneumoniae bacterium. There are also provided vaccines, methods of treating or preventing or immunising against Streptococcus pneumoniae bacterium infections and kits comprising immunogenic compositions.

31.20220218810NEW IMMUNOGENIC COMPOSITIONS
US - 14.07.2022
Clasificación Internacional A61K 39/112 Nº de solicitud 17595693 Solicitante ETH ZURICH Inventor/a Emma WETTER
The present invention relates to an immunogenic composition for Proteobacteria protection and reduced transmission. We have identified Proteobacteria serovar variant combinations that generate an immune

response capable of robustly driving bacterial enteropathogens into an evolutionary dead end and reducing the transmission of the bacterium. These inactivated immunogenic positions and typically oral vaccines are easy to apply, cheap to produce, and can be stored long-term without cold-chain requirements making them ideal for application in livestock, or in resource-poor areas. They are believed to be the only immunogenic compositions and vaccine formulations capable of breaking the chain of transmission for these types of pathogen.

32.WO/2022/155601ADJUVANTS TO STIMULATE BROAD AND PERSISTENT INNATE IMMUNITY AGAINST DIVERSE ANTIGENS
WO - 21.07.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/012801 Solicitante THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY Inventor/a PULENDRAN, Bali
Methods are provided herein for modulating the epigenome of immune cells by administration of an immunostimulatory composition comprising adjuvants, e.g. vaccine adjuvants, to stimulate broad and persistent innate immunity against pathogens unrelated to antigens present in the composition.

33.20220218622IONIZABLE LIPIDS AND METHODS OF MANUFACTURE AND USE THEREOF
US - 14.07.2022
Clasificación Internacional A61K 9/51 Nº de solicitud 17500486 Solicitante George Mason Research Foundation, Inc. Inventor/a Michael Daro Buschmann
The invention encompasses novel ionizable lipids compounds and their use in lipid nanoparticles delivery systems that are useful in the delivery of nucleic acids to a mammalian subject that can be included for use, for example, as cancer vaccines, gene editing therapeutics, delivery of nucleic acid (e.g., mRNA) encoding antibodies, vaccines for infectious disease, and protein replacement therapeutics. Additionally, the invention encompasses compositions and therapeutics comprising the ionizable lipids in the lipid nanoparticles and the use of the composition and therapeutics for the preparation of a pharmaceutical composition, especially a vaccine, (e.g., for use in the prophylaxis or treatment of infectious diseases, tumor or cancer diseases, rare diseases, allergies, or autoimmune diseases). The invention encompasses methods of treatment or prophylaxis of the aforementioned diseases.

34.20220218812METHODS OF TREATING PATIENTS WITH AN IMMUNOGENIC COMPOSITION THAT PROTECTS AGAINST S. PNEUMONIAE SEROTYPE 29
US - 14.07.2022
Clasificación Internacional A61K 39/09 Nº de solicitud 17614876 Solicitante Merck Sharp & Dohme Corp. Inventor/a Jian He
The present invention provides methods for treating patients by administering an immunogenic multivalent pneumococcal polysaccharide-protein conjugate vaccine which comprises a *S. pneumoniae* serotype 35B polysaccharide-protein conjugate, does not comprise a *S. pneumoniae* serotype 29 polysaccharide-protein conjugate, and provides protection against *S. pneumoniae* serotype 29.

35.WO/2022/155212CELL-FUSION BASED IMMUNE AGENTS
WO - 21.07.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/012136 Solicitante HEAT BIOLOGICS, INC. Inventor/a DIXON, Eric Paul
Immunogenic agents are provided that are generated by fusing two or more biological cells into a fused biological cell, for use in treatment of cancer and infectious diseases in a manner that allows control of at least a ratio of a vaccine protein and a T cell costimulatory fusion protein expressed by the fused cell.

36.WO/2022/149295SARS-CoV-2 PROTEIN-DERIVED PEPTIDE AND VACCINE CONTAINING SAME
WO - 14.07.2022

Clasificación Internacional C12N 15/50 Nº de solicitud PCT/JP2021/017162 Solicitante ONCOTHERAPY SCIENCE, INC. Inventor/a KIYOTANI, Kazuma
The present invention provides a SARS-CoV-2 protein-derived epitope peptide capable of inducing cytotoxic T cells. The present invention also provides: a polynucleotide coding for the peptide; an antigen-presenting cell presenting the peptide; a cytotoxic T cell (CTL) targeting the peptide; and a method for inducing the antigen-presenting cell or the CTL. The present invention further provides a composition or a pharmaceutical composition containing the foregoing as an active ingredient. Furthermore, the present invention provides a method for treating and/or preventing the coronavirus infectious disease, and/or a method for suppressing worsening of the disease, using the peptide, the polynucleotide, the antigen-presenting cells, the cytotoxic T cells, or the pharmaceutical composition according to the present invention. Also provided is a method for an inducing an immune response to a coronavirus infection.

Patentes registradas en la United States Patent and Trademark Office (USPTO)

Results Search in US Patent Collection db for: (ABST/vaccine AND ISD/20220712->20220722),21 records.

	PAT. NO.	Title
1	11,390,660	Uterine cancer treatments
2	11,390,651	Vaccine candidates for human respiratory syncytial virus (RSV) having attenuated phenotypes
3	11,390,647	Polypeptide and use thereof
4	11,389,531	Methods and apparatus for the delivery of hepatitis B virus (HBV) vaccines
5	11,389,529	Expression system for expressing herpesvirus glycoprotein complexes
6	11,389,528	Coronavirus vaccine compositions, methods, and uses thereof
7	11,389,526	Self-attenuated prophylactic and therapeutic vaccines against pathogens
8	11,389,525	Polygene influenza vaccine
9	11,384,365	EHV with inactivated UL18 and/or UL8
10	11,384,339	Influenza viruses with mutant PB2 gene segment as live attenuated vaccines
11	11,384,137	MVA-gH/gL-PC vaccine derived antibodies neutralizing human cytomegalovirus infectivity and methods thereof
12	11,384,129	Peptides and combination of peptides for use in immunotherapy against ovarian cancer and other cancers
13	11,384,128	Peptides and combination of peptides for use in immunotherapy against ovarian cancer and other cancers
14	11,384,127	Peptides and combination of peptides for use in immunotherapy against ovarian cancer and other cancers

15	11,384,122	Compositions and methods for preventing and treating coronavirus infection--SARS-CoV-2 vaccines
16	11,382,971	Mevalonate pathway inhibitor as highly-efficient vaccine adjuvant
17	11,382,970	Treatment of insect bite hypersensitivity
18	11,382,967	Method and system for inactivating virus infectivity for producing live-attenuated vaccines
19	11,382,962	Yeast vaccine vector including immunostimulatory and antigenic polypeptides and methods of using the same
20	11,382,952	Molecular marker for cancer stem cell
21	11,382,833	Systems and methods for fluid delivery

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