VacCiencia

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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 Covid-19.
- Patentes más recientes en Patentscope sobre vacunas.

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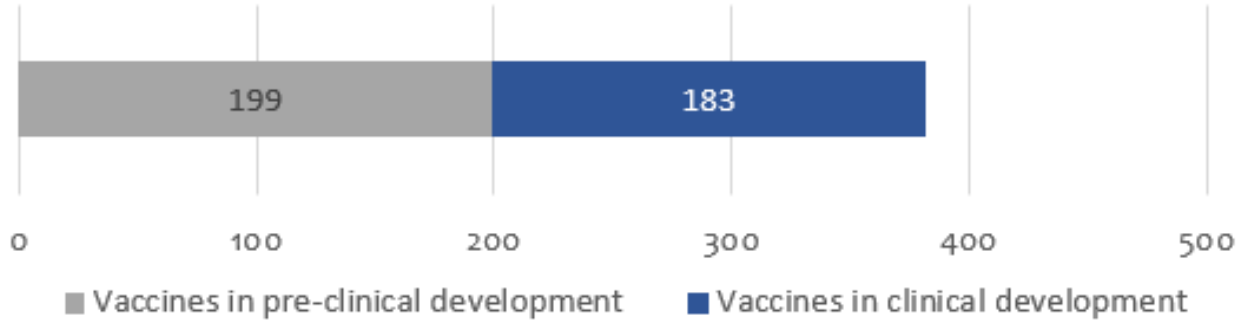
Resumen de la información publicada por la OMS sobre vacunas en desarrollo contra la COVID-19, a nivel mundial

Última actualización por la OMS: 10 de marzo de 2023.

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

183 Vacunas en evaluación clínica y 199 en evaluación preclínica



Vacunas en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	59	32%
VVnr	Viral Vector (non-replicating)	25	14%
DNA	DNA	17	9%
IV	Inactivated Virus	22	12%
RNA	RNA	43	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	7	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%
		183	

Vacunas en evaluación clínica por vía de administración

Oral		5	3%
Injectable		164	90%
SC	Sub cutaneous	5	3%
ID	Intra dermal	9	5%
IM	Intra muscular	150	82%
IN	Intra nasal	16	9%
AE	Aerosol	1	1%
IH	Inhaled	2	1%
TBD / No Data (ND)		14	8%

Número de dosis de las vacunas en evaluación clínica

Number of doses & schedule	Candidate vaccines (no. and %)	
1 dose	47	26%
Day 0	47	
2 doses	101	55%
Day 0 + 14	8	
Day 0 + 21	37	
Day 0 + 28	56	
3 doses	2	1%
Day 0 + 28 + 56	2	
TBD / No Data (ND)	33	18%

Vacunas 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
CanSino Biological Inc./China	Vector viral no replicativo	Intranasal	3
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 y Sublingual	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	Intranasal	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	Intranasal	2/3
USSF + VaxForm/Estados Unidos	Subunidad proteica	Oral	1
CyanVac LLC/Estados Unidos	Vector viral no replicativo	Intranasal	2
DreamTec Research Limited/Hong Kong	BacAg-SpV	Oral	NA
Sean Liu, Icahn School of Medicine at Mount Sinai	Vector viral replicativo	Intranasal	2/3
Hannover Medical School/Alemania	Vector viral no replicativo	Inhalación	1
ACM Biolabs/Singapur	Subunidad proteica	Intranasal	1
Intravacc B.V/Holanda	Vector viral no replicativo	Intranasal	1
McMaster University/Canadá	Vector viral no replicativo	Aerosol	1

Vacunas en fase 4 de evaluación clínica

Candidatos vacunales más avanzados/fabricante/país	Plataforma de la vacuna
Sinovac/China	Virus Inactivado
Sinopharm/Beijing Institute of Biological Products/China (2)	Virus Inactivado
University of Oxford/AstraZeneca/Reino Unido	Vector viral no replicativo
CanSino Biological Inc./Beijing Institute Biotechnology/China (IM e IH)	Vector viral no replicativo
Janssen Pharmaceutical Companies/Estados Unidos	Vector viral no replicativo
Moderna/NIAID/Estados Unidos (2)	ARN
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN
Medigen Vaccine Biol./Dynavax/NIAID/Taiwán/EE.UU	Subunidad proteica

Vacunas en fase 3 de evaluación clínica

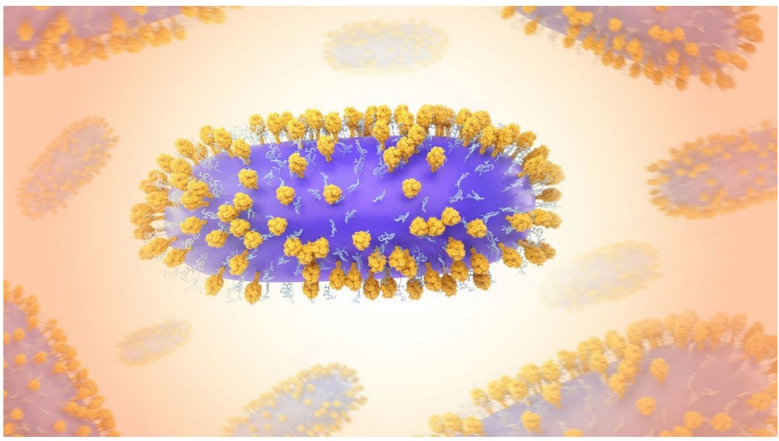
Candidatos vacunales más avanzados/fabricante/país	Plataforma de la vacuna
Gamaleya Research Institute/Rusia	Vector viral no replicativo
Novavax/Estados Unidos	Subunidad proteica
Anhui Zhifei Longcom Biopharmac./Inst. Microbiol, Chin Acad Sci/China	Subunidad proteica
CureVac AG/Alemania	ARN
Institute of Medical Biology/Chinese Academy of Medical Sciences	Virus inactivado
Research Institute for Biological Safety Problems, Kazakhstan	Virus inactivado
Inovio Pharmac. + Intern. Vacc Inst. + Advaccine Biopharm Co., Ltd	ADN
Zydus Cadila Healthcare Ltd./India	ADN
Bharat Biotech International Limited/India	Virus Inactivado
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica
Shenzhen Kangtai Biological Products Co., Ltd./China	Virus Inactivado
Clover Biopharmaceuticals Inc./GSK/Dynavax/China/Reino Unido/EE.UU	Subunidad proteica
Vaxine Pty Ltd. + CinnaGen Co./Australia, Irán	Subunidad proteica
Instituto Finlay de Vacunas/Cuba	Subunidad proteica
Federal Budget Res Inst State Res Cent Virol Biotechnol "Vector"/Rusia	Subunidad proteica
West China Hospital + Sichuan University/China	Subunidad proteica
Vaxxinity/EE.UU	Subunidad proteica
Univ. Hong Kong, Xiamen Univ. & Beijing Wantai Biological Pharm./China	Vector viral replicativo
Acad Milit Sci (AMS) Walvax Biotechnol, Suzhou Abogen Biosci/China	ARN
Medicago Inc./Canadá	Partícula similar a virus
Codagenix/Serum Institute of India	Virus vivo atenuado
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica
Valneva, National Institute for Health Research, Reino Unido	Virus inactivado
Biological E. Limited/India	Subunidad proteica
Nanogen Pharmaceutical Biotechnology/Vietnam	Subunidad proteica
Shionogi/Japón	Subunidad proteica
Erciyes University/Turquía	Virus inactivado
SK Bioscience Co., Ltd./CEPI/Corea del Sur/Noruega	Subunidad proteica
Razi Vaccine and Serum Research Institute/Irán, India	Subunidad proteica
Bharat Biotech International Limited/India	Vector viral no replicativo (IN)
Providence Therapeutics/Canadá	ARN
POP Biotechnologies and EuBiologics Co.,Ltd/EEUU, Corea del Sur	Subunidad proteica
Jiangsu Rec-Biotechnology/China	Subunidad proteica
Radboud University/Holanda	Partícula similar a virus
Arcturus Therapeutics, Inc./Estados Unidos	ARN
Livzon Pharmaceutical/China	Subunidad proteica
National Vaccine and Serum Institute, China; Beijing Zhong Sheng Heng Yi	Subunidad proteica
KM Biologics Co., Ltd./Japón	Virus inactivado
Shanghai East Hospital and Stemirna Therapeutics/China	ARN
Bagheiat-allah University of Medical Sciences/AmitisGen/Irán	Subunidad proteica
Laboratorios Hipra, S.A./España	Subunidad proteica
Sinocelltech Ltd./China	Subunidad proteica
Chumakov Federal Scientific Center for Research/Rusia	Virus Inactivado
Yantai Patronus Biotech Co., Ltd.	Partícula similar a virus
Airlangga University/Indonesia	Virus Inactivado
PT Bio Farma/Indonesia	Subunidad proteica
AIM Vaccine and Liverna Therapeutics/China	ARN
Cansino Biolgics Inc./China	Vector viral no replicativo (IM)
China National Biotec Group Company Limited	Virus inactivado

Noticias en la Web

FDA advisers vote in favor of approval for RSV vaccines for older adults

Mar 1. Over the course of a two-day meeting, vaccine advisers to the US Food and Drug Administration voted in favor of approval for RSV vaccines for adults over the age of 60. The vaccine candidates, made by Pfizer and GlaxoSmithKline, could become the world's first approved vaccines against the common virus.

On Wednesday, committee members voted 10-2 in support of the safety and unanimously in support of the effectiveness of GSK's vaccine for the prevention of lower respiratory tract disease caused by RSV among older adults.



Vaccine candidates made by Pfizer and GlaxoSmithKline could become the world's first approved vaccines against RSV.

For Pfizer's shot, committee members voted on Tuesday with 7-4 with one abstention that there is adequate data to support the vaccine's safety and effectiveness.

The FDA, which typically follows the committee's recommendations, is expected to decide on approval of the vaccines in May, ahead of RSV's typical winter surge.

Respiratory syncytial virus is a highly contagious virus that causes flu-like illness in people of all ages that increases in severity with age. According to the US Centers for Disease Control and Prevention, RSV is responsible for an estimated 177,000 hospitalizations and 14,000 deaths per year among adults 65 or older.

GSK's RSV vaccine candidate for older adults was 82.6% effective in preventing lower respiratory tract disease defined by either two or more symptoms or and one or more signs or three or more symptoms. The shot was 94.1% effective at preventing severe disease.

The Pfizer vaccine was 66.7% effective at preventing moderated lower respiratory tract illness with two or more symptoms and 85.7% effective at preventing illness with three or more symptoms, according to Pfizer.

Focus on safety

Though a majority of the committee voted in support of the vaccines, some committee members expressed concerns over both vaccines' risk of Guillain-Barre syndrome, a rare neurological disorder in which the immune system attacks its own nerves, causing muscle weakness and sometimes paralysis.

The incidence of Guillain-Barre is about 1.5 to 3 cases for 100,000 adults over age 60 in the US annually, according to the FDA.

Two adults among 20,000 vaccine recipients in Pfizer's Phase 3 clinical trial developed symptoms consistent with the rare neurological disorder within nine days of receiving the shot.

Of roughly 15,000 vaccine recipients of GSK's Phase 3 clinical trial, one man developed Guillain-Barre syndrome within nine days of vaccination.

"It seems to me that one case is a red flag. Two cases is very concerning," said Dr. Marie Griffin, professor of health policy at Vanderbilt University Medical Center, who voted that the data demonstrated that both vaccines are effective but not safe

The FDA has called Guillain-Barre syndrome an "important potential risk" of Pfizer and recommended the

company conduct a safety study for further evaluation of Guillain-Barre syndrome and other immune-mediated demyelinating conditions after potential vaccine approval, which the company has agreed to. GSK has said they will closely monitor cases after approval.

While Pfizer did not provide data on co-administration with other vaccines, GSK's data showed potential safety risks when the RSV and flu shots were administered together.

Two adults in their 70s who received both the flu and RSV vaccine developed acute disseminated encephalitis, a rare neurological disorder that involves swelling of the brain and spinal cord, and one of the individuals died. The FDA considers these cases as possibly related to either RSV or flu vaccination, but review is ongoing.

"This is a disease with incidence 0.1 in 100,000 usually, the majority being in children and then a scatter in young adults. So two cases in elders within three to four weeks post-vaccine is highly anomalous from a statistical standpoint," said Dr. Hana El Sahly, the FDA advisory committee chair, who voted against the GSK shot based on its safety profile but in favor based on efficacy.

Dr. Adam Berger, who voted in favor of GSK's vaccine based on safety and efficacy, says it seems to be an issue with co-administration and that concerns with acute disseminated encephalitis and Guillain-Barre syndrome won't be answered until larger studies are conducted.

"I suggest a heavy reliance on the postmarketing surveillance and not only just reliance but making sure there is an enforcement around the requirements about this," Berger said. "At the moment, I think the profile seems to be within the acceptable range."

Search for an effective RSV vaccine

Some vaccine advisers wanted to see more data on the Pfizer vaccine's effectiveness at preventing hospitalization or death, especially among high-risk individuals including adults over 80, those with comorbidities, or those who are immunocompromised.

"I think the data does support the effectiveness of this vaccine, it's just the population was underrepresented by people who could most benefit from the vaccine," Griffin said of Pfizer's clinical trial.

The available safety and efficacy data is from the first season of Pfizer's clinical trial scheduled over two RSV seasons and the first of three seasons for GSK's trial. Some experts want to wait for more data.

"I'm desperately eager to have a vaccine that works for RSV. This has been a terrible disease my whole career. I would love to see it. No doubt about it," said Dr. Jay Portnoy, professor of pediatrics at Children's Mercy Hospital, who voted in support of GSK's vaccine but against Pfizer based on efficacy.

Portnoy said waiting for a second season of data would provide more robust numbers and complete analysis.

"It's not an emergency use authorization. We can take the time to finish the studies and get the information we need before licensing this product going forward. So I remain a little bit skeptical given the data that we have," he said.

Others think the benefits of the candidate vaccines outweigh the potential risks of deadly RSV infection.

"Despite the challenges, despite the additional hurdles, our obligation is to do what's right for the public," said Dr. Daniel Kim who voted in favor of both shots. "And in this case, we have a bad disease, we have a good vaccine – so far, anyway, given the clinical trials – it's a safe vaccine, and the vaccine can be used to prevent disease."

Fuente: CNN Health. Disponible en https://cnn.it/3mOV6dc

Cuba ratifies commitment for post Covid-19 global recovery

Mar 2. At the Non-Aligned Movement (NAM) on Thursday,Cuba ratified its commitment to make available to developing nations the progress achieved by its scientific community in the fight against Covid-19 pandemic.

Addressing the Summit-Level Meeting of the NAM Contact Group running in Baku, Cuban Vice President Salvador Valdés Mesa called on the 120 members of this movement to use Cuba's biotechnological drugs.

"We invite the non-aligned countries to the clinical use of our biotechnological drugs," highlighted the vice president, who heads the Cuban delegation to this meeting, which analyzes the NAM recovery work after Covid-19.

Valdés Mesa reiterated Cuba's willingness to support the Covid-19 vaccination campaign wherever necessary.

He stressed that despite the unprecedented tightening of the blockade imposed by the United States on that country, Cuba developed five vaccine candidates, three of which became highly effective vaccines to fight Covid-19.

He said: "our country has the highest vaccination rates in the world among countries, having 90.3 percent of its population immunized with three doses".

The Cuban vice president urged all governments, international organizations, and donors without exception, to mobilize the necessary financial resources, transfer technologies, make capacity-building mechanisms viable and fulfill their commitments in terms of Official Development Assistance.

Valdés Mesa asserted that Cuba, as pro tempore presidency of the Group of the 77 plus China, would work tirelessly to represent and defend the legitimate interests of developing countries.

Fuente: Prensa Latina News. Disponible en https://bit.ly/40aLAQ7

Vacunas cubanas con amplia presencia mundial

3 mar. Desde que el The New York Times avizorara en febrero del 2021 que Cuba se acercaba a un logro científico, comenzó una guerra política que implicaba, en este caso, un ataque a sus candidatos vacunales, ahora varios convertidos en vacunas, como parte también de la competencia farmacéutica.

En aquel momento, el prestigioso diario de Estados Unidos aún dudaba que en medio de la crisis económica global, particularmente agravada en la isla caribeña por el impacto de las sanciones, pudiese lograrse el hito científico que el Gobierno cubano anunciaba, lo cual significaría una victoria política y un portón abierto hacia las relaciones internacionales.

"El sector biotecnológico de la isla está bien desarrollado"– aseguraba The New York Times– Cuba fabrica ocho de las 12 vacunas que se administran a los niños en la isla y exporta vacunas a más de 30 países.

Según Gail Reed, editora de MEDICC Review, Cuba "es un monstruo de la biotecnología".

Hoy Cuba tiene presencia con sus vacunas en América del Norte, América del Sur, Europa, Asia, África y en el Caribe.

¿A qué países han llegado vacunas cubanas contra la Covid-19?

A pesar de que en la práctica internacionalista cubana nunca han mediado las diferencias políticas, era obvio que, en medio de una guerra entre farmacéuticas por imponerse en un escenario de alta demanda, los principales aliados del gobierno cubano serían los primeros en adquirir las vacunas de la mayor de las Antillas.

Vietnam

El 20 de septiembre del 2021 el gobierno de Vietnam emitió la Resolución 109/NQ-CP que autorizaba la compra de 10 millones de dosis de la vacuna Abdala producida por el Centro de Ingeniería Genética y Biotecnología (CIGB) de Cuba. El Ministerio de Salud de Vietnam aseguró que se trataba de un tratamiento seguro, de calidad y efectivo.

Días después el sitio oficial del Ministerio de Relaciones Exteriores de Cuba anunciaba el arribo a suelo vietnamita del primer lote de la vacuna Abdala al aeropuerto internacional Noi Bai de la ciudad de Hanoi, en el cual se incluían 150 mil dosis por concepto de donación de Cuba al país asiático.

Así medios internacionales se hacían eco de la noticia: "Vietnam, primer país del mundo en aprobar el uso de la vacuna cubana" (titular de Europa Press). Ya desde ese momento varios medios veían como posible la certificación y recomendación de las vacunas cubanas por parte de la Organización Mundial de la Salud (OMS); algo que hasta ahora no ha ocurrido a pesar de haberse presentado toda la documentación.

Venezuela

La agencia de noticias AP mediante su corresponsal en La Habana, Andrea Rodríguez, informaba que, además de Vietnam, un lote de vacunas Abdala llegaría a Venezuela, sin embargo, precisó que no fue posible determinar el número de dosis enviadas en aquel momento.

De igual modo AP detallaba que según los resultados obtenidos por los científicos cubanos, Abdala mostraba una efectividad de 92.28 % y la combinación de dos dosis de Soberana 02 con una tercera de Soberana Plus alcanzaba el 91.2 %.

En noviembre del 2021 se informaba a través de la cuenta de Twitter del CIGB que más de un millón y medio de vacunas Abdala se entregaban a Venezuela, lo que sumaba casi 7 000 000 de dosis entregadas a la nación suramericana.

Téngase en cuenta que Venezuela comenzó a vacunar a su población con Abdala cuando aún era un candidato vacunal y no había sido reconocida por la agencia reguladora de Cuba (Cedmed) como vacuna, o sea, Venezuela también fue escenario de las pruebas masivas que los científicos realizaron para establecer la eficacia.

Además, el 31 de enero del 2022 la agencia multinacional Telesur informaba de un cargamento con un millón de dosis de la vacuna cubana Soberana Plus, producida por el Instituto Finlay de Vacunas y proyectada para personas convalecientes de la enfermedad en Venezuela.

Nicaragua

De igual forma, en octubre del propio año la empresa comercializadora BioCubaFarma anunciaba que la autoridad de regulación sanitaria del Ministerio de Salud de Nicaragua (Minsa) había emitido la certificación de uso de emergencia a las vacunas cubanas Soberana y Abdala. Ese mismo mes, recibía el país centroamericano un millón 200 mil dosis de las vacunas cubanas, las cuales se aplicarían a niños, niñas y adolescentes entre 2 y 17 años de edad.

La doctora Martha Reyes, ministra de salud de Nicaragua recibía la carga en el Aeropuerto Internacional Augusto César Sandino, la primera de los tres envíos planificados, que alcanzarían la cifra de 7 000 000 de dosis acordadas.

Irán

En mayo del 2022, se anunciaba la inauguración en Irán de una planta productora denominada PastoCorona que recibiría una transferencia de tecnología de Soberana02. De esta forma, Irán se convertía en el primer país del mundo en producir una de las vacunas cubanas contra la Covid-19 y comercializaría la Soberana02 del Instituto Finlay de Vacunas, como PastuCovac, en el país persa.

Según recoge la agencia Prensa Latina, el hecho demostró la puesta en práctica de los resultados científicos cubanos puestos a disposición de la salud y el bienestar social de los países del mundo.

El presidente de la empresa cubana BioCubaFarma, Eduardo Martínez expresó, por su parte, que la inauguración de la planta en Irán consolidaba la colaboración científica y la inserción internacional de la empresa en cuestión.

San Vicente y las Granadinas

En la comunidad del Caribe el primer país en recibir vacunas cubanas fue San Vicente y las Granadinas, país que apenas contaba con un 30 % de la población vacunada con una dosis y 23 % con esquema completo. El diario St. Vicent Times informaba a finales del año 2021 que la vacuna Abdala se sumaba a Sputnik, AstraZéneca y Pfizer ya en aplicación en esa nación.

Días antes, en la XX Cumbre del Alba, Ralph Gonsalves, primer ministro de esta nación expresó que deseaba vacunarse con Abdala y agregó: “Dios y la vacuna cubana nos salvarán de la Covid-19”.

Siria

Comenzando el 2022, desde Cuba salió un donativo de 240 mil dosis de vacunas rumbo a Siria: "Las vacunas desarrolladas por la ciencia cubana, primeras en América Latina constituyen un modesto aporte al enfrentamiento de la pandemia a nivel mundial que nos llena de satisfacción poder compartir con el hermano pueblo sirio", expresaba la viceministra de Comercio Exterior de Cuba, Ana Teresita González.

La agencia AP destacaba que el embajador sirio Idris Mayya agradecía por su parte el gesto cubano y detallaba que, aunque no había sido avalado todavía por la Organización de Naciones Unidas, ya se había aprobado su uso de emergencia en países como Venezuela, Nicaragua, Vietnam e Irán.

México

Se sumó a finales del 2022 México, como parte de la Estrategia Nacional de Vacunación. Desde que la Comisión Federal de Protección de Riesgos para la Salud (Cofepris) aprobara el uso de la vacuna Abdala, se desató una campaña de tintes políticos por parte de la ultraderecha mexicana para reducir la confianza de la ciudadanía en la vacuna cubana: medios de prensa y activistas en redes sociales impulsaron un boicot.

El primer lote con más de 4 000 000 de vacunas arribó a finales de noviembre y un mes después los laboratorios de Biológicos y Reactivos de México (Birmex) anunciaban a través de sus redes sociales que había arribado a México el segundo lote con 4.9 millones de vacunas cubanas.

En medio de las críticas de un sector en México, científicos como Hugo López-Gatell aseguraron la efectividad del tratamiento. A través de Forbes México se emitió su declaración: "La evidencia sobre la robustez, la eficacia, la seguridad, en este caso la efectividad poblacional de la vacuna Abdala es sumamente consistente (…) Utiliza una tecnología muy probada y en su momento innovadora porque es muy estable. Cuba utiliza este modelo de diseño también para otras vacunas y es uno de los países que tiene las más altas capacidades de vacunación y de múltiples programas de salud pública".

Sin embargo, los ataques a la vacuna cubana se reproducen con frecuencia desde actores sociales y políticos que aseguran que el Gobierno de México debe invertir en vacunas bivalentes como es el caso de Pfizer, y desechar las dosis de Abdala compradas.

Un reciente artículo de Sputnik apunta que de las más de 400 000 dosis que se repartieron en los centros de salud de Ciudad de México, para el 26 de enero de este año solo se habían administrado poco más de 116 000, lo que representa un 29 % de las vacunas disponibles. No obstante, este empecinamiento político de la ultraderecha mexicana ya se había vivido en otros momentos con la vacuna rusa Sputnik V y la CanSino de China.

Según cita este artículo se trata de una politización de la ciencia sin sustento, tal como reconoce el médico mexicano Mauricio Rodríguez, miembro de la Comisión Universitaria para la atención a la emergencia de coronavirus (UNAM), quien afirma en dicho texto: "Cualquiera que ponga en una balanza y ponga a competir a México y a Cuba en cuanto a vacunas, pues pierde México porque Cuba desde hace más de 30 años produce sus propias vacunas y exporta vacunas a la Unicef, a la OPS y a muchos otros países".

Varios artículos científicos validan la tecnología con que Cuba ha desarrollado su vacuna, como el publicado en la revista The Lancet, donde se asegura que Abdala logró obtener altos estándares de efectividad para prevenir la muerte, algo que demuestran los números de muertes en Cuba por Covid-19 durante el año 2022.

En resumen, según precisa una fuente dentro del Centro de Ingeniería Genética y Biotecnología, la vacuna Abdala ha viajado a 6 países: Vietnam, San Vicente y las Granadinas, Nicaragua, Venezuela, Siria y México. Por su parte, Yury Valdés Balbín, director adjunto del Instituto Finlay de Vacunas apunta que las vacunas Soberana 02 y Soberana Plus han llegado a Irán, Venezuela, Nicaragua, Bielorrusia, Siria y República Árabe Saharaui Democrática.

No hay mayor prueba de la efectividad de las vacunas cubanas que los números actuales de contagios y muertes por Covid-19 en la isla: en este año 2023, hasta el parte del 16 de febrero, existieron en Cuba solo 517 contagios con una media de 11.2 por día y ninguna persona había fallecido de Covid-19, mientras varios picos pandémicos siguen teniendo lugar en varios países del orbe.

Fuente: Cuba.cu. Disponible en https://bit.ly/42wc8xp

Descubren un mecanismo que utiliza el SARS-CoV-2 relacionado con su transmisibilidad

3 mar. Desde el inicio de la pandemia, han surgido varias variantes del SARS-CoV-2 que han sido capaces de convertirse en las dominantes y desplazar a las que existían hasta el momento. Las variantes aparecen como consecuencia del proceso de mutación que tiene lugar cuando se replica o copia el genoma viral, y la variante que se impone es aquella que tiene una ventaja biológica sobre el resto. Para aumentar su transmisibilidad, un estudio de Vall d'Hebron y CIBEREHD -en colaboración con CIBERINFEC- ha encontrado que el virus se beneficia de un mecanismo para producir o dejar de producir genomas defectivos, es decir, genomas que pierden parte de su material genético. Los resultados se han publicado en la revista *Scientific Reports* y son fruto de un trabajo liderado por los grupos de Enfermedades Hepáticas y de Microbiología del Vall d'Hebron Instituto de Investigación (VHIR) con los Servicios de Microbiología, Bioquímica Clínica y Medicina Preventiva del Hospital Universitario Vall d'Hebron.

Los investigadores han estudiado las variantes mayoritarias en cada ola desde el inicio de la pandemia hasta ahora.

En un primer estudio publicado en 2020, el mismo equipo descubrió que las variantes que aparecieron al inicio de la pandemia presentaban una proporción significativa de genomas defectivos en el gen de la espícula del virus, es decir, en algunas partículas virales faltaba parte de su material genético. Como la espícula es clave para infectar nuevas células, que una variante genere genomas defectivos con una espícula incompleta significa que algunas de las nuevas partículas virales no serán capaces de infectar. "Este mecanismo de genomas defectivos permite al virus hacer una infección más leve, o incluso asintomática, y entonces los síntomas se manifiestan más tarde o no requieren atención médica. En esta situación, la persona pude bajar la guardia y esto favorecería la transmisión del virus entre las personas más próximas", explica el Josep Quer, investigador principal del grupo de Enfermedades Hepáticas del VHIR e investigador del CIBEREHD. "Lo que puede ser una ventaja para una variante para imponerse a las otras, puede ser una desventaja cuando cambian las condiciones epidemiológicas", añade.

Más adelante, se observó que las variantes Alfa, Beta o Delta ya no presentaban genomas defectivos. "Estas variantes presentaban otras mutaciones que permitían ganar capacidad para transmitirse con más facilidad mediante otros mecanismos, además de cambiar para hacerse menos reconocibles por el sistema inmunitario humano", afirma el Dr. Andrés Antón, responsable de la Unidad de Virus Respiratorios del Servicio de Microbiología del Hospital Universitario Vall d'Hebron e investigador del grupo de investigación en Microbiología del VHIR. "El hecho de que dejen de producir genomas defectivos hace que las partículas virales sean más eficientes para infectar nuevas células", detalla. Aunque la pérdida de los genomas defectivos podría relacionarse con casos más graves, la tasa de vacunación cada vez más elevada ha jugado un papel clave para frenar la mortalidad.

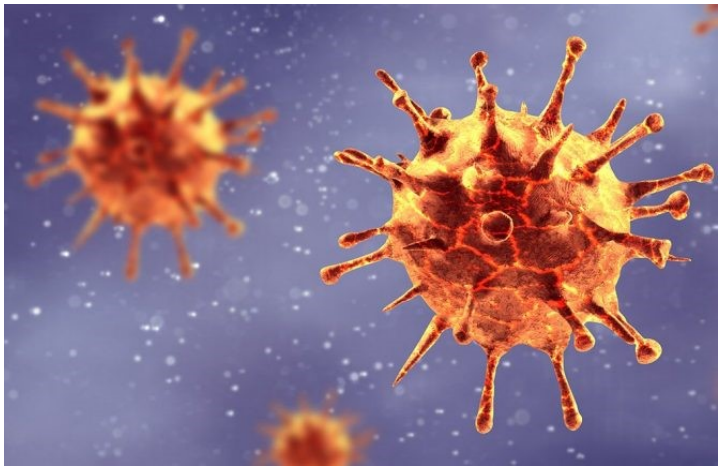
Con la llegada de la variante Ómicron, el trabajo mostró que el virus también presentaba genomas defectivos, lo cual la hizo más similar a las variantes del inicio de la pandemia que a la variante Delta. Este hallazgo se relaciona con estudios previos que defienden que Ómicron no provee de una evolución continua de variantes como la Delta, sino que podría haber sido el resultado de otras líneas evolutivas. "Ómicron acumula muchas otras mutaciones que permiten que el virus escape del reconocimiento del sistema inmunitario e infecte con mayor eficacia. Estas mutaciones también hacen que infecte mayoritariamente el trato respiratorio alto (nariz y cuello), lo cual facilita su transmisión, ya que solo con la respiración o con una tos leve, el virus se puede transmitir más fácilmente", comenta el Dr. Quer.

El trabajo ha ido más allá y el estudio de Ómicron y sus subvariantes que han ido imponiéndose muestra que se vuelva a repetir el mismo patrón visto con las variantes desde el inicio de la pandemia hasta Delta, de forma que las nuevas subvariantes que han aparecido en los últimos meses ya no presenten genomas defectivos.

El estudio ha sido financiado por la Dirección General de Investigación e Innovación en Salud (DGRIS) del Departament de Salut, el CIBER de Enfermedades Infecciosas (CIBERINFEC) y el CIBER de Enfermedades Hepáticas y Digestivas (CIBEREHD) del Instituto de Salud Carlos III y el Centro para el Desarrollo Tecnológico Industrial (CDTI) en colaboración con Roche Diagnostics.

Fuente: CIBER Centro de Investigación Biomédica en Red. Disponible en https://bit.ly/42mjmUk

OMS pide a los países compartir información sobre el origen de la COVID-19



4 mar. El director general de la Organización Mundial de la Salud (OMS), Tedros Adhanom Ghebreyesus, pidió hoy a cualquier país que tenga alguna información sobre el origen de la pandemia de la COVID-19 que la comparta con esta entidad y el resto de la comunidad científica.

Esta permitiría que el mundo entienda lo que ocurrió, prevenga una nueva pandemia y esté preparado en caso de que sea inevitable, agregó, en reacción a la reciente afirmación del director del FBI, Chistopher Wray, de que la pandemia fue causada probablemente por una fuga en un laboratorio de Wuhan (China).

Tedros aclaró que la OMS "no ha abandonado sus planes de identificar los orígenes de la pandemia de COVID-19, contrariamente a lo que indican informaciones de prensa y comentarios de políticos".

Lamentó que se persista en politizar las investigaciones que se hacen para saber cómo se inicio la emergencia sanitaria, puesto que considera que esto solo dificulta la búsqueda de la verdad.

La OMS creó en 2021 un grupo asesor científico —formado por especialistas de distintos países— para determinar los orígenes de nuevos patógenos, incluido el causante de la COVID-19.

China ha rechazado los comentarios del director del FBI, a quien restó credibilidad y ha pedido a EEUU que respete "la ciencia y los hechos".

China rechaza idea de que la COVID-19 se originara en un laboratorio

Una misión de científicos —previa a la creación del grupo asesor— visitó Wuhan un año después del estallido de la pandemia y realizó indagaciones sobre el terreno, y aunque no llegó a conclusiones definitivas, consideró poco probable que la pandemia se debiese a una fuga de laboratorio.

Posteriormente, los asesores de la OMS recomendaron una serie de estudios que podrían aclarar la situación y que deberían hacerse en China y otros países con el fin de verificar o descartar las distintas hipótesis relacionadas con el origen de la enfermedad.

"Seguimos pidiendo a China que sea transparente y que comparta información, que realice las investigaciones necesarias y comparta los resultados", señaló Tedros, quien dijo que con este fin ha escrito o hablado varias veces con las autoridades chinas.

El responsable de la OMS sostuvo que hasta que eso no ocurra "todas las hipótesis sobre el origen del virus permanecen sobre la mesa".

"Comprender los orígenes de la COVID sigue siendo un imperativo científico, pero también moral frente a millones de personas que perdieron la vida, sus familias y quienes sufren de COVID largo", comentó.

Fuente: ON CUBA NEWS. Disponible en https://bit.ly/3LDnitQ

La vacuna de refuerzo contra el Covid-19 que la EMA recomienda para personas de 18 a 50 años

5 mar. El Comité de Medicamentos de Uso Humano de la Agencia Europea de Medicamentos (CHMP) ha recomendado autorizar el uso de otra vacuna contra el Covid-19 como dosis de refuerzo para la población de entre 18 y 50 años. Un preparado que fue autorizado por la EMA en junio de 2022 pero en España, por ejemplo, no se ha inoculado ni una sola dosis desde entonces, en gran parte por la ruptura del compromiso entre el fabricante y la UE por los retrasos en la entrega de la dosis.

Según informa la Agencia Española de Medicamentos y Productos Sanitarios (Aemps), el "CHMP ha recomendado autorizar el uso de la vacuna Valneva para el Covid-19 (inactivada, con adyuvante) como dosis de refuerzo para adultos de 18 a 50 años. viejo". El suero de Valneva lo fabrica la multinacional francesa del mismo nombre, y es la sexta vacuna autorizada en Europa tras Pfizer, Moderna, AstraZeneca, Janssen y Novavax.

A pesar de la recomendación, no parece fácil que este nuevo preparado se utilice de forma masiva, sobre todo por la ruptura del acuerdo en mayo entre Valneva y la UE. La UE y Valneva firmaron un acuerdo en noviembre de 2021 para el suministro de hasta 60 millones de dosis de la vacuna, de las que unas 27 millones fueron del año pasado, pero los retrasos en el proceso de aprobación y la caída de la demanda provocada por el exceso de oferta y la ralentización de las vacunaciones llevó a los Estados de la UE a solicitar modificaciones al contrato original.

El acuerdo revisado supuso que Valneva debía suministrar 1,25 millones de dosis a los países de la UE entre agosto y septiembre del año pasado y la posibilidad de otros 1,25 millones antes de finales de 2022 según la Comisión.

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

¿Podrán obtenerse vacunas eficaces para todo el mundo?

6 mar. Científicos del Instituto de Medicina Molecular de Lisboa, dirigidos por Luis Graca, investigan nanopartículas que mejoren la eficacia de las vacunas, aumentando la capacidad del sistema inmunitario de las personas con déficits de inmunidad.

"Es el caso, por ejemplo, de las personas mayores, a las que las vacunas no protegen tan bien porque su sistema inmunitario ha perdido fuelle", explica Graca. Un ejemplo es la vacuna de la gripe, una infección que sigue teniendo altas tasas de mortalidad y morbilidad en adultos mayores.

La investigación de Graca es fruto de la colaboración con Helena Florindo, de la Facultad de Farmacia de la Universidad de Lisboa. "Ella es experta en nanomateriales y nanopartículas aplicadas a la terapia del cáncer. Había observado que algunos de los compuestos con los que trabaja potenciaban el sistema inmune y favorecían la producción de anticuerpos neutralizantes. Junto a ella, pensamos que, si aplicábamos estos nanomateriales a las vacunas, podríamos hacerlas más eficaces, sobre todo en personas con sistemas inmunitarios más comprometidos", explica Graca.

Graca y Florindo decidieron experimentar si las nanopartículas potenciaban la respuesta inmunitaria y se producían más anticuerpos neutralizantes, eficaces para proteger contra infecciones, en otros contextos distintos al cáncer. Obtuvieron buenos resultados, y ahora ultiman la composición de estas moléculas para lograr una respuesta inmunitaria más potente posible.

“Aún queda mucho camino por recorrer antes de que nuestros resultados puedan trasladarse a la población. Aun teniendo buenos resultados de laboratorio y en estudios preclínicos, todavía tenemos que demostrar que todos los componentes de la vacuna son seguros y eficaces, antes de proceder con todo el sistema regulatorio que lleve a probarlos en ensayos clínicos”, concluye el investigador.

Fuente: LA VANGUARDIA. Disponible en https://bit.ly/3n1wLkq

Alerta COVID: esta vacuna fue reconocida como la más eficaz contra el coronavirus

7 mar. Una vacuna fue reconocida como la más eficaz contra la COVID-19, según un estudio publicado en *The Lancet*.

"El Fondo Ruso de Inversión Directa (RFPI) anuncia la publicación en *The Lancet*, la revista médica internacional principal, de un estudio de científicos de China, según el cual la vacuna rusa Sputnik V contra el coronavirus demuestra una eficacia del 91 % contra la infección sintomática por coronavirus, que es el mejor indicador entre todas las vacunas vectoriales contra SARS-CoV-2", indicó el comunicado.

El estudio agrega que "los investigadores también concluyeron que las vacunas vectoriales son mucho menos propensas a causar efectos secundarios en comparación con las vacunas de ARNm" (ARN mensajero).

Sin embargo, los científicos llaman a revacunarse para mantener una alta inmunidad, ya que "con el tiempo después de la vacunación, en los fármacos contra el coronavirus se nota una disminución en la eficacia".

En este sentido, son muchos los estudios que indican que los anticuerpos inducidos por la vacuna contra la COVID -19 se reducen a los 6 meses después de una serie de vacunación inicial contra la enfermedad (dos dosis o una según corresponda).

Vacunas COVID: por qué la Sputnik V fue reconocida como la más eficaz contra el coronavirus

"La alta seguridad y eficacia de Sputnik V ha sido confirmada por los resultados de más de 50 estudios clínicos y los datos de aplicación de Sputnik V en los marcos de los programas nacionales de vacunación en diversas regiones del mundo, incluyendo Europa, Asia, Oriente Medio y América Latina", subrayó el comunicado.

Y agrega que los estudios de la vacuna fueron publicados en las principales revistas médicas

internacionales: *The Lancet, Nature, Vaccines, Cell Reports Medicine* y otras.

La vacuna Sputnik V fue aprobada en 71 países con una población total de más de 4.000 millones de personas, mientras que la Sputnik Light ha sido aprobada en más de 30 países, consignó la agencia estatal rusa Sputnik.

En el mundo se registraron más de 676,04 millones de casos de infección por el patógeno, incluidos más de 6,87 millones de decesos, según la Universidad Johns Hopkins de Estados Unidos.

La vacuna Gam-COVID-Vac, denominada Sputnik V, desarrollada por el Centro Nacional Gamaleya de Epidemiología y Microbiología de Rusia, fue aprobada en la Argentina el 23 de diciembre de 2020 mediante la resolución 2784/2020 del Ministerio de Salud.

¿Cuáles son los efectos secundarios de la vacuna SPUTNIK V?

Respecto a los posibles efectos adversos de las vacunas contra la COVID-19 en el organismo, el Ministerio de Salud de la Nación publicó en su sitio web una extensa lista con los síntomas más frecuentes que pueden darse luego de recibir los distintos sueros que se aplican en el país. Sobre la Sputnik V indicó: Síndromes pseudogripales de corta duración: escalofríos, fiebre, artralgia y/o mialgia (dolores musculares y articulares, respectivamente), astenia (debilidad muscular), malestar general y/o cefalea que pueden comenzar entre las 24 y las 48 horas posteriores a la vacunación.

Síntomas gastrointestinales: náuseas, dispepsia (indisgestión) y/o disminución del apetito). Son menos frecuentes y tienen una duración promedio de 24 horas.

Fuente: Europa Press. Disponible en https://bit.ly/3YanZh2

Investigadores desarrollan una vacuna basada en ARNm contra enfermedades bacterianas

9 mar. Un equipo de investigadores de la Universidad de Tel Aviv y del Instituto Israelí de Investigaciones Biológicas ha desarrollado una vacuna basada en ARNm que es 100 % eficaz contra la bacteria 'Yersinia pestis', que produce la peste.

Investigadores desarrollan una vacuna basada en ARNm contra enfermedades bacterianas - TEL AVIV UNIVERSITY .

El estudio, realizado en un modelo animal, demostró que todos los animales tratados estaban totalmente protegidos contra la bacteria. Según los investigadores, su nueva tecnología puede permitir el rápido desarrollo de vacunas eficaces contra enfermedades bacterianas, incluidas las causadas por bacterias resistentes a los antibióticos, por ejemplo en caso de una nueva pandemia de rápida propagación.

En su investigación, publicada en la revista científica *'Science Advances'* y financiada por la Unión Europea, probaron su novedosa vacuna de ARNm en animales infectados con una bacteria mortal. Al cabo de una

semana, todos los animales no vacunados murieron, mientras que los vacunados con esta vacuna permanecieron vivos y sanos.

Además, en uno de sus métodos de vacunación, una dosis proporcionó protección completa tan sólo dos semanas después de ser administrada. La capacidad de proporcionar una protección completa con una sola dosis es crucial para la protección contra futuros brotes de pandemias bacterianas de rápida propagación.

"Hasta ahora se suponía que las vacunas de ARNm, como las de COVID-19 que todos conocemos, eran eficaces contra los virus pero no contra las bacterias. La gran ventaja de estas vacunas, además de su eficacia, es la posibilidad de desarrollarlas muy rápidamente: una vez publicada la secuencia genética del virus SARS-CoV2, sólo se necesitaron 63 días para iniciar el primer ensayo clínico. Sin embargo, hasta ahora los científicos creían que las vacunas de ARNm contra bacterias eran biológicamente inviables. En nuestro estudio demostramos que, de hecho, es posible desarrollar vacunas de ARNm 100 por cien eficaces contra bacterias mortales", ha explicado Edo Kon, de la Universidad de Tel Aviv, uno de los líderes del trabajo.

Los virus dependen de células externas (huésped) para su reproducción. Al insertar su propia molécula de ARNm en una célula humana, un virus utiliza nuestras células como fábrica para producir proteínas virales basadas en su propio material genético, es decir, se replica a sí mismo.

En las vacunas de ARNm, esta misma molécula se sintetiza en un laboratorio y luego se envuelve en nanopartículas lipídicas parecidas a la membrana de las células humanas. Cuando la vacuna se inyecta en nuestro cuerpo, los lípidos se adhieren a nuestras células y, en consecuencia, éstas producen proteínas víricas. El sistema inmunitario, al familiarizarse con estas proteínas, aprende a proteger nuestro organismo en caso de exposición al virus real.

Kon añade que como los virus producen sus proteínas dentro de nuestras células, las proteínas traducidas a partir de la secuencia genética viral son similares a las traducidas a partir del ARNm sintetizado en laboratorio.

"Las bacterias, sin embargo, son harina de otro costal. No necesitan nuestras células para producir sus propias proteínas. Y como las evoluciones de los humanos y las bacterias son bastante diferentes entre sí, las proteínas producidas en las bacterias pueden ser diferentes de las producidas en las células humanas, incluso cuando se basan en la misma secuencia genética", ha resaltado.

Muchos investigadores han intentado sintetizar proteínas bacterianas en células humanas, pero la exposición a estas proteínas provocaba un bajo nivel de anticuerpos y una falta general de efecto inmunitario protector, en nuestro organismo.

"Esto se debe a que, aunque las proteínas producidas en las bacterias son esencialmente idénticas a las sintetizadas en el laboratorio, al estar basadas en las mismas 'instrucciones de fabricación', las producidas en células humanas sufren cambios significativos, como la adición de azúcares, cuando son secretadas por la célula humana", ha explicado el investigador.

Para resolver este problema, estos investigadores desarrollaron métodos para secretar las proteínas bacterianas eludiendo las vías de secreción clásicas, problemáticas para esta aplicación. El resultado fue una respuesta inmunitaria significativa, en la que el sistema inmunitario identificó las proteínas de la vacuna como proteínas bacterianas inmunógenas.

"Para mejorar la estabilidad de la proteína bacteriana y asegurarnos de que no se desintegra demasiado rápido dentro del cuerpo, la reforzamos con una sección de proteína humana. Combinando las dos estrategias innovadoras obtuvimos una respuesta inmunitaria completa", ha apuntado.

Otro de los autores, Dan Peer, ha agregado que "hay muchas bacterias patógenas para las que no tenemos vacunas". "Además, debido al uso excesivo de antibióticos en las últimas décadas, muchas bacterias han desarrollado resistencia a los antibióticos, reduciendo la eficacia de estos importantes medicamentos. En consecuencia, las bacterias resistentes a los antibióticos suponen ya una amenaza real para la salud humana en todo el mundo. El desarrollo de un nuevo tipo de vacuna puede dar respuesta a este problema mundial", ha sostenido.

Fuente: LA NACIÓN. Disponible en https://bit.ly/40cmQa0

Blue Water Vaccines Reports Year 2022 Financial Results and Recent Business Highlights

Mar 9. Blue Water Vaccines Inc. ("BWV" or "Blue Water Vaccines" or the "Company"), announced its financial results for the fiscal year ended December 31, 2022 and provided an update on recent business developments and Company progress. Blue Water Vaccines is a preclinical stage biotechnology company developing vaccines against multiple infectious diseases, including acute otitis media ("AOM") and pneumonia from *Streptococcus pneumoniae* colonization, influenza, norovirus, rotavirus, monkeypox, Marburg virus disease and *Chlamydia*.

"In addition to our successful initial public offering and raising subsequent capital to extend our runway, we made significant corporate progress and further developed our vaccine candidates throughout the year," said Joseph Hernandez, Chairman and Chief Executive Officer of Blue Water Vaccines. "We advanced research of our *Streptococcus pneumoniae* vaccine candidate, expanded its target indication to include both acute otitis media and pneumococcal pneumonia, and are exploring the potential to transform this vaccine into a platform to protect against other respiratory pathogens. In addition, we continued to expand our research endeavors with our esteemed network of collaborators and highlighted our story to investment and scientific conferences around the world. We are truly excited to build on this progress in 2023 and continue our mission to positively impact public health for all."

2022 and Recent Corporate Developments

In February 2022, BWV closed its initial public offering of 2,222,222 shares of common stock, generating aggregate net proceeds of approximately $17.1 million.

BWV closed private placements in each of April and August of 2022, with aggregate net cash proceeds of approximately $6.9 million and $8.7 million, respectively.

In November 2022, the Board approved a share repurchase program to allow for the Company to repurchase up to 5 million shares, with discretion to management to make purchases subject to market conditions.

BWV named several seasoned professionals to its board of directors, including Simon Tarsh, retired Deloitte consulting Senior Managing Director, Vuk Jeremić, previous chair of the Council of Europe's Committee of Ministers and previous President of the United Nations Assembly, as well as Timothy Ramdeen, experienced public market and private equity investment leader.

In February 2023, BWV appointed veteran commercial operations leader Frank Jaeger as Senior Vice President of Marketing and Business Development to support BWV as its pipeline programs progress towards clinical development.

In December 2022, BWV received "buy" recommendations from two notable healthcare-focused Wall Street banks, Maxim Group LLC and H.C. Wainwright & Co.

Throughout 2022 and into the first quarter of 2023, BWV management presented its corporate overview and Company updates at key investor and financial conferences to highlight the value story of the BWV pipeline and target leaders within the investment community.

2022 and Recent Vaccine Candidate Developments

On October 11, 2022, the Company announced plans to evaluate the ability of BWV-201, a live attenuated Streptococcus pneumoniae vaccine candidate, to protect individuals against non-invasive pneumococcal pneumonia in children and adults. Given BWV-201 is delivered intranasally, rather than intramuscularly like the current pneumococcal vaccines on the market, BWV-201 is designed to elicit mucosal immunity and protect against disease in the lungs.

In December 2022, BWV signed an exclusive, global license agreement for a novel Chlamydia vaccine candidate from the University of Texas Health at San Antonio. Currently, there are no available vaccines to prevent Chlamydia infection and the main treatment is through antibiotic regimens. Chlamydia is the most frequently reported bacterial sexually transmitted infection in the United States, with about 1.6 million new cases reported in 2020 alone, and globally, there are an estimated 129 million cases each year. BWV's novel vaccine candidate is a live attenuated Chlamydia strain delivered orally and is hypothesized to provide transmucosal protection in the genital tract to prevent disease.

Throughout 2022 and into the first quarter of 2023, BWV expanded the exploration of the applicability of its virus-like particle ("VLP") platform into multiple disease indications. Based on technology from Cincinnati Children's Hospital Medical Center ("Cincinnati Children's"), BWV's VLP platform utilizes norovirus shell and protrusion particles to self-assemble into VLPs, capable of presenting antigens from various infectious diseases to create novel vaccine candidates.

In March 2022, VLP licensing partner Cincinnati Children's published a research paper in Nano Research supporting the utilization of the VLP platform to present influenza antigens. BWV intends to explore the addition of its epitopes of limited variability, which serve as the basis for BWV's universal influenza vaccine candidate, BWV-101, and pre-pandemic H1 vaccine, BWV-102, into the VLP platform for vaccine development.

In February 2023, BWV announced a collaboration with AbVacc, Inc. ("AbVacc") for the joint development of vaccine candidates targeting monkeypox and Marburg virus disease. In this effort, BWV and AbVacc will utilize BWV's VLP platform to present antigens from each disease to develop novel vaccine candidates, with the potential to expand this partnership to other disease areas of interest identified by BWV and AbVacc.

To highlight its novel vaccine candidates, BWV management presented pipeline details and updates at several key scientific conferences throughout 2022 and into the first quarter of 2023, including the World Vaccine Congresses in Washington, D.C., Barcelona, and San Diego, as well as at the Universal Influenza Vaccines 2022 Conference in Oxford, and the Biotech Showcase during the 41st Annual JP Morgan

Healthcare Conference

In addition to external events to highlight BWV's vaccine pipeline, BWV held its first Key Opinion Leader event in December 2022 to discuss the unmet need for an AOM and pneumococcal pneumonia vaccine. During the discussion, BWV-201 inventor Jason Rosch, Ph.D., and BWV consultant, Ali Fattom, Ph.D., presented the importance of mucosal immunity in vaccines and key data supporting BWV-201 as a solution for AOM and pneumococcal pneumonia.

Throughout 2022, BWV expanded research and license agreements with esteemed collaborators to further advance vaccine candidates.

In May 2022, BWV announced an expanded license agreement with St. Jude Children's Research Hospital ("St. Jude"). Under this agreement, BWV will explore the potential to display additional pathogens capable of causing AOM, including non-typeable Haemophilus influenzae ("NTHi") and Moraxella catarrhalis ("M. catarrhalis"), on the surface of BWV-201, a live attenuated, serotype independent, intranasally delivered Streptococcus pnuemoniae ("S. pneumoniae") vaccine candidate. At the World Vaccine Congresses in Barcelona and San Diego, BWV presented data supporting this venture, showing that epitopes from these otopathogens were successfully displayed on the surface of BWV-201 and mice vaccinated with the new construct were able to generate antibodies against NTHi, M. catarrhalis, and S. pneumoniae.

In May 2022, BWV announced a collaboration with the multidisciplinary Center for R&D in Immunobiologics, an initiative of Instituto Butantan ("Butantan"). Through this partnership, BWV and Butantan will develop BWV's universal influenza vaccine candidate, BWV-101, in Brazil.

In May 2022, BWV announced an expanded Sponsored Research Agreement with the University of Oxford to continue funding development of BWV's universal influenza vaccine candidate, BWV-101. This, along with the discovery of epitopes of limited variability in H3 influenza and influenza B, will allow BWV to progress BWV-101 through its preclinical development and reach clinical-stage.

In July 2022, BWV signed a Sponsored Research Agreement with Cincinnati Children's to fund research into exploring the applicability of its VLP platform across multiple diseases, including rotavirus, norovirus, malaria, and influenza. Through further agreements and announcements, exploration of this platform has expanded to also include monkeypox and Marburg virus disease.

2022 Financial Highlights

Cash Position: Cash was $25.8 million as of December 31, 2022, as compared to $1.9 million as of December 31, 2021. The increase was primarily due to the closing of BWV's initial public offering in February 2022, a private placement that closed on April 19, 2022, and a private placement that closed on August 11, 2022. The Company believes its cash and cash equivalents are sufficient to fund operations through at least the end of the third quarter of 2024.

Research and Development Expenses: For the year ended December 31, 2022, research and development expenses increased by approximately $2.8 million compared to 2021. The increase was primarily attributable to an increase in employee compensation and benefits, an increase in preclinical development activities mainly related to BWV-201, and an increase in external research and development personnel costs, offset by a decrease in license fees.

General and Administrative Expenses: For the year ended December 31, 2022, general and administrative expenses increased by approximately $7.3 million to $9.4 million from $2.1 million in 2021. The increase was mainly due to an increase in employee and director compensation and benefits, an increase in professional services related to being a public company and increases in various business activities related to company growth and development.

Other Income: Other income of $61,410 for the year ended December 31, 2022 relates to the change in fair value of the contingent warrant liability, which was incurred at the close of the April and August Private Placements. There was no other income or expense during the year ended December 31, 2021.

Net Loss: Net loss was approximately $13.4 million for the year ended December 31, 2022, as compared to $3.4 million for the year ended December 31, 2021. The increase is primarily due to research and development of preclinical vaccine candidate development, as well as an increase in G&A expenses associated with now being a public company.

BLUE WATER VACCINES INC.

Balance Sheets

	December 31, 2022	December 31, 2021
ASSETS		
Current assets		
Cash	$ 25,752,659	$ 1,928,474
Prepaid expenses and other current assets	469,232	234,551
Deferred offering costs	—	757,646
Receivable from related parties	35,850	152,524
Total current assets	26,257,741	3,073,195
Prepaid expenses, long-term	38,617	—
Property and equipment, net	14,089	11,502
Total assets	$ 26,310,447	$ 3,084,697
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 1,499,296	$ 582,605
Accrued expenses	2,409,128	1,055,515
Contingent warrant liability	14,021	—
Total current liabilities	3,922,445	1,638,120
Total liabilities	3,922,445	1,638,120

Commitments and Contingencies

Stockholders' equity		
Preferred stock, $0.00001 par value, 10,000,000 shares authorized at December 31, 2022 and 2021		
Series Seed: 0 and 1,150,000 shares designated at December 31, 2022 and 2021, respectively; 0 and 1,146,138 shares issued and outstanding at December 31, 2022 and 2021, respectively; $0 and $15.4 million aggregate liquidation preference at December 31, 2022 and 2021, respectively	—	11
Common stock, $0.00001 par value, 250,000,000 shares authorized at December 31, 2022 and 2021; 15,724,957 and 3,200,000 shares issued at December 31, 2022 and 2021, respectively; 15,265,228 and 3,200,000 shares outstanding at December 31, 2022 and 2021, respectively	157	32
Additional paid-in-capital	42,331,155	7,403,204
Treasury stock, at cost; 459,729 and 0 shares of common stock at December 31, 2022 and 2021, respectively	(566,810)	—
Accumulated deficit	(19,376,500)	(5,956,670)
Total stockholders' equity	22,388,002	1,446,577
Total liabilities and stockholders' equity	**$ 26,310,447**	**$ 3,084,697**

BLUE WATER VACCINES INC.
Statements of Operations

	Year Ended December 31, 2022	Year Ended December 31, 2021
Operating expenses		
General and administrative	$ 9,351,552	$ 2,092,304
Research and development	4,129,688	1,325,030
Total operating expenses	13,481,240	3,417,334
Loss from operations	(13,481,240)	(3,417,334)
Other income		
Change in fair value of contingent warrant liability	(61,410)	—
Total other income	(61,410)	—
Net loss	**$ (13,419,830)**	**$ (3,417,334)**
Cumulative preferred stock dividends	96,359	627,391
Net loss applicable to common stockholders	$ (13,516,189)	$ (4,044,725)
Net loss per share attributable to common stockholders, basic and diluted	$ (1.10)	$ (1.26)
Weighted average number of common shares outstanding, basic and diluted	12,271,449	3,200,000

About Blue Water Vaccines

Blue Water Vaccines Inc. is a biopharmaceutical company focused on developing transformational vaccines to address significant health challenges globally. Headquartered in Cincinnati, OH, the company holds the rights to proprietary technology developed at the University of Oxford, Cincinnati Children's Hospital Medical Center, St. Jude Children's Hospital, and The University of Texas Health at San Antonio ("UT Health"). The Company is developing a universal flu vaccine that will provide protection from all virulent strains in addition to licensing a novel norovirus (NoV) S&P nanoparticle versatile virus-like particle (VLP) vaccine platform from Cincinnati Children's to develop vaccines for multiple infectious diseases, including norovirus/rotavirus and malaria, among others. Additionally, Blue Water Vaccines is developing a Streptococcus pneumoniae (pneumococcus) vaccine candidate, designed to specifically prevent the highly infectious middle ear infections, known as Acute Otitis Media (AOM), in children, and prevention of pneumonia in older people at risk for contracting pneumococcal pneumonia, a significant unmet medical need. The advantage of this technology includes a serotype independent mucosal immunity that prevents colonization in the upper respiratory tract as well as systemic immunity that can confer serotype independent against invasive pneumococcal disease. The Company is also developing a Chlamydia vaccine candidate with UT Health to prevent infection and reduce the need for antibiotic treatment associated with contracting Chlamydia disease.

Fuente: Globe Newswire. Disponible en https://bit.ly/3ZV8tHu

OPS insta a cerrar brechas en la vacunación anticovid para poder poner fin a la pandemia

10 mar. La Organización Panamericana de la Salud (OPS) instó este jueves a los países de la región de las Américas a aumentar la vacunación para combatir la COVID-19 y evitar secuelas como la COVID de larga duración, que padecen hasta un 20% de las personas que se contagiaron.

Durante una conferencia de prensa, el director del ente Jarbas Barbosa, exhortó a fortalecer la vigilancia y cerrar las brechas en la cobertura de vacunación para poner fin a la emergencia de la COVID-19 y prepararse mejor para futuras crisis de salud.

En la alocución llamó a mantener los sistemas de vigilancia, independientemente de que los contagios disminuyan, y destacó que "si bien no estamos totalmente fuera de peligro, estamos en un lugar mucho mejor", pues las tasas de incidencia son hasta un 30% menores que hace un año.

"Durante el último mes, hemos visto más de 1.5 millones de casos nuevos y 17.000 muertes. No podemos ser complacientes", subrayó el director de la OPS.

Jarbas Barbosa alertó que "a medida que aprendemos a vivir con este virus, los países deben mantener y seguir fortaleciendo la vigilancia. Sabemos que la COVID-19 puede evolucionar y adaptarse rápidamente. El riesgo de nuevas variantes es real".

El director llamó la atención sobre la existencia de personas que no han recibido al menos una dosis de alguna de las vacunas contra COVID-19, a la altura de tres años desde el inicio de la emergencia sanitaria.

Asimismo, estimuló a las personas más vulnerables a recibir las dosis de refuerzo para continuar con esa "tendencia de reducción" en cuanto a la nuevos casos y fallecimientos.

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

¿Qué es DPT y cuáles enfermades previene?

11 mar. La vacuna contra la difteria, tos ferina y tétanos, conocida también como DPT, está disponible en el mercado desde hace más de medio siglo y su aplicación en los menores de un año ha permitido evitar 70 millones de casos de tos ferina y 610.000 defunciones en el mundo por dicha causa, según datos del Ministerio de Salud y Protección Social.

"En Colombia desde su introducción en la década de los 70 ha disminuido de manera considerable la morbilidad y mortalidad por estas tres enfermedades que se encuentran sujetas a planes de control", resalta Minsalud.

¿Qué contiene la DPT?

La DPT es un compuesto de dos toxoides (tetánico y diftérico) y una fracción completa o celular del componente pertussis, absorbidos a un adyuvante, generalmente hidróxido o fosfato de aluminio.

Una dosis de DPT contiene 20 Lf de Toxoide Diftérico, 10 Lf de Toxoide Tetánico y 16 Unidades Opalescentes de bacilos muertos (célula completa de *Bordetella pertussis*) inactivados con formol e integrados en una suspensión.

Según Minsalud el esquema recomendado de la vacuna para tétanos y difteria tiene una eficacia del 95 % al 98 % mientras que para la tos ferina es del 70 % a 85%, siendo más eficaz la vacuna de célula completa.

¿Qué previene la DPT?

Como lo señala su propio nombre la DPT ayuda a prevenir la difteria y la tos ferina que se contagian de persona a persona. Y también el tétanos que entra en el cuerpo a través de cortes o heridas.

Según explica la enciclopedia médica MedinePLus, la difteria puede causar dificultad para respirar, insuficiencia cardíaca, parálisis o muerte.

Por su parte, la tos ferina o tos convulsiva es una infección de las vías respiratoria altas. Es causada por la bacteria *Bordetella pertussis*. Es una enfermedad grave que puede afectar a personas de cualquier edad y causar discapacidad permanente en los bebés e incluso la muerte.

Mientras que el tétanos causa rigidez dolorosa en los músculos. El tétanos puede causar problemas graves de salud, como incapacidad para abrir la boca, dificultad para tragar y respirar o la muerte.

La DPT está indicada para la inmunización activa contra el tétanos, la difteria y la tos ferina en lactantes y niños entre 2 y 18 meses de nacidos. Se recomienda tanto para una inmunización primaria como de refuerzo, antes de cumplir los 7 años de edad.

Además hace parte del programa ampliado de inmunizaciones (PAI) que tiene como objetivo la eliminación, erradicación y control de las enfermedades inmunoprevenibles en Colombia, con el fin de disminuir las tasas de mortalidad y morbilidad causadas por éstas en la población menor de 5 años.

Pero, por fuera del PAI también hay otra vacuna similar conocida como DPaT.

¿Qué es la DPaT?

La DPaT es la vacuna de la difteria, el tétanos y la tos ferina acelular (Diphtheria, Tetanus y acellular Pertussis, DTaP) y ayuda a prevenir esas enfermedades.

Está únicamente recomendada para niños menores de 7 años y se recomienda que se apliquen cinco dosis inyectadas cada una en las siguientes edades: 2 meses; 4 meses; 6 meses; 15–18 meses; 4–6 años.

La DPaT tiene la ventaja de reducir los efectos adversos derivados del componente completo de la pertussis guardando una eficacia similar, según Minsalud. Sin embargo no se recomienda intercambiar las vacunas de DPaT de las diferentes casas fabricantes pues no existe evidencia que sustente tal práctica.

Fuente: EL TIEMPO. Disponible en https://bit.ly/3TulVjo

¿Qué fue de las vacunas españolas contra la COVID-19? De las cuatro anunciadas solo una está a punto de salir

Un enfermero prepara una inyección de la vacuna de la dosis Moderna, en la Residencia pública de Mayores de Vallecas, a 26 de septiembre de 2022, en Madrid. EP

12 mar. En marzo de 2020, el mundo, después de ver los efectos de un coronavirus que se extiende sin control por el planeta, empieza a buscar desesperadamente una vacuna que frene la enfermedad. España se suma. Y con optimismo. Tan solo un mes después, en abril, el entonces ministro de Ciencia e Innovación, Pedro Duque, celebraba que existía "la posibilidad de que los laboratorios españoles" encontraran "la primera vacuna contra la COVID-19". El proyecto del Centro Nacional de Biotecnología del Centro Superior de Investigaciones Científicas (CNB-CSIC) liderado por Mariano Esteban y Juan García Arriaza era entonces el más avanzado. Pero hoy, tres años después del inicio del confinamiento, todavía no ha visto la luz. Ni ese proyecto ni los otros dos en los que trabaja el CSIC ni en el que avanza la empresa Hipra. Pero todos siguen en marcha y, en principio, acabarán viendo la luz. El último, de forma inminente.

Pero, ¿a qué se ha debido este retraso? Según explica el presidente de la Asociación Española de Vacunología, Jaime Pérez, no ha sido por un problema de financiación. El Gobierno, según una respuesta escrita al Grupo Parlamentario Vox del pasado mes de mayo, ha invertido 1,6 millones en los proyectos del CSIC, una cifra a la que habría que sumar más de tres que han ido a parar a la compañía Hipra en forma de subvención. "Está claro que una mayor inversión se traduce en mayor logro, pero la tardanza no ha sido solo por eso. Aparte del dinero, es muy importante tener el aliado adecuado en el momento adecuado", afirma.

Se refiere a la industria farmacéutica. "El mejor ejemplo es el de AstraZeneca. La vacuna la investigó la Universidad de Oxford, pero la desarrolló el laboratorio, por eso pudo salir adelante", explica.

Este es precisamente el escollo con el que se ha encontrado la investigadora Isabel Sola junto a sus compañeros de laboratorio en el CSIC, entre los que se encuentran Luis Enjuanes y Sonia Zúñiga. Su proyecto consiste en un suero que se aplicaría en spray a través de las mucosas nasales, lo que generaría, explica Sola, una "inmunización esterilizante" que impediría, directamente, el contagio. Para entenderlo: "Cuando un virus entra en nuestro cuerpo, nuestro sistema inmune, que funciona como un ejército, lo detecta y le ataca. Si ese ejército se encuentra en la puerta de entrada de ese virus, directamente no le dejará pasar".

No es una cosa nueva. Su equipo, que trabaja con otros coronavirus, ya lleva tiempo explorando el desarrollo de este tipo de vacunas. Es un objetivo, además, que también tienen el laboratorio AstraZeneca y otros inmunólogos a nivel mundial. "Ahora mismo las vacunas intranasales son un desafío porque no nos vale con demostrar que son buenas para inducir inmunidad, sino que tenemos que probar que son seguras para los humanos. Si no, las agencias del medicamento nunca las aprobarán. Y para eso necesitamos trasladar el proyecto a la industria farmacéutica", explica.

En esa fase están ahora. "Nos encontramos en un proceso de transición, modificando algunos aspectos de la vacuna que no aceptaría la industria, para conseguir escalar el proyecto a ese nivel y empezar los ensayos", aclara. Porque la inmunización funciona. "Lo hemos visto en ratones. La vacuna protege", celebra. Lo que no puede es dar plazos. "No es fácil hablar de cuándo llegará el suero, pero estos avances se miden en años, así que diría que podría tardar uno o dos más", vaticina.

La de Hipra, inminente

En cualquier caso, no habrá que esperar tanto para poder ver la primera vacuna española contra el covid. La que la empresa Hipra anunció en el mes de octubre de 2020 está al caer, según confirman sus fuentes a infoLibre. La Agencia Europea del Medicamento (EMA, por sus siglas en inglés) es la que tiene que dar la luz verde definitiva, y parece que será inminente. "Lo último que sabemos es lo que dijo en su última rueda de prensa, que la aprobación sería muy pronto, pero aún no tenemos fecha", explican, a la vez que aclaran que, en su caso, la tardanza se ha debido, principalmente, a estos trámites burocráticos. "Quienes nos marcan los tiempos son ellos, y desde Hipra siempre se han seguido", apuntan.

Inicialmente, según publicaron en su página web, su suero estaría listo en el cuarto trimestre de 2022. La Comisión Europea ya acordó el pasado mes de agosto la compra de hasta 250 millones de dosis de Hipra, un contrato que permitirá la adquisición de 4.200 millones de dosis a 14 países europeos. El proyecto ha sido financiaciado por el Centro para el Desarrollo Tecnológico Industrial (CDTI), dependiente del Ministerio de Ciencia e Innovación, que aportó 17,3 millones de euros, de los cuales 14,7 son en forma de Ayuda Parcialmente Reembolsable (APR) y 3,8 millones en forma de subvención, como explicó el propio Ejecutivo en una respuesta parlamentaria en la que también defendió que el millón y medio concedido al CSIC "es suficiente para el desarrollo preclínico de la vacuna en cultivos celulares y modelos animales, pero no para el desarrollo clínico", al que todavía no han llegado ninguno de los proyectos del organismo público.

El de Vicente Larraga, que empezó en mayo de 2020, tenía pensado solicitar la autorización para ensayar el suero en humanos en otoño de 2022, aunque todavía no hay noticias de que esto se haya producido. Mariano Esteban y Juan García Arriaza, por su parte, pretendían hacer lo propio en otoño de 2022, después de retirar su solicitud meses antes por la "poca gente" que quedaba sin vacunar en España y por la irrupción de la variante ómicron. Sin embargo, y según explica Sola, la Agencia Española del Medicamento

pidió más información sobre los resultados de los ensayos en animales y, por ahora, "el proyecto sigue en esa fase".

Si el nivel de inmunidad es alto, ¿tienen sentido?

Según los datos oficiales del Gobierno, el 85,9 % de la población española ya tiene la pauta completa de vacunación y el 87,2 % al menos una dosis. Pero aun así, las vacunas que todavía se están desarrollando deben seguir adelante con su proceso, según defienden todos los expertos consultados. "La ciencia debe seguir avanzando, y todavía tenemos desafíos grandes, como el de desarrollar un suero intranasal", apunta Sola.

Más allá de los avances meramente científicos, a nivel sanitario también son beneficiosas, puesto que el covid se está convirtiendo, poco a poco, en una enfermedad endémica. Para Rafael Bengoa, exdirector de Sistemas de Salud de la Organización Mundial de la Salud (OMS), de hecho, la COVID-19 ya es una endemia. "Este virus se quedará entre nosotros y será estacional, por eso será bueno tener una vacuna española este verano o este otoño. Sobre todo si se consigue que una de ellas sea esterilizante [que consiga evitar el contagio, como la que investiga Sola], lo que sería un éxito global", celebra.

Pérez apunta en la misma dirección. "Estas vacunas se plantean como dosis de recuerdo o estacionales. Es muy posible que en otoño de este año tengamos población vulnerable que tenga que volver a vacunarse. Ahí, estas nuevas vacunas serán clave", explica. Hace apenas un mes, la EMA apuntó a que las futuras campañas de vacunación contra la COVID-19 podrían realizarse "una vez al año y al inicio del invierno".

Fuente: InfoLibre. Disponible en https://bit.ly/3yQqWJi

Tres años después de la pandemia: cuáles son y cuánto duran ahora los síntomas de la COVID-19

12 mar. Hace tres años, un extraño virus detectado en Wuhan, China, cambió el mundo para siempre. El SARS-CoV-2 provocaba neumonías de causa desconocida que fueron aumentando exponencialmente. Su rápida propagación y la gravedad de los casos llevó a la OMS a declarar el brote de COVID-19 pandemia global el 11 de marzo de 2020. Días después, el 14 de marzo, el presidente de Gobierno, Pedro Sánchez, decretaba el estado de alarma en España tras un Consejo de Ministros extraordinario.

Fue el comienzo de una crisis sanitaria sin precedentes. El mundo cerró sus puertas de par y en par para evitar la expansión del virus, pero los casos no dejaron de crecer.

En España, la enfermedad de la Covid-19 deja ya 119.618 fallecidos y cerca de 14 millones de casos confirmados. Por otro lado, las hospitalizaciones han repuntado en la última semana. Según el informe del Ministerio de Sanidad, actualmente hay 2.006 personas hospitalizadas en España por Covid y 94 ingresados en UCI, diez más que el viernes anterior.

Pese a que la mayoría de países ya han eliminado las restricciones y la pandemia parece cosa del pasado, los contagios siguen produciéndose y la OMS se resiste a poner fin a la declaración de emergencia global por el coronavirus.

Durante estos años de pandemia, el virus ha ido mutando y, en consecuencia, los síntomas han ido cambiando. En nuestro país, la alta tasa de vacunación ha provocado que, actualmente, la enfermedad

curse ahora de manera leve en la mayoría de los casos.

Variantes predominantes en España

La última actualización de Sanidad del pasado 6 de marzo, señala que la variante de Ómicron XBB.1.5 (y sus linajes) ya es la predominante en España, con el 40% de casos de todas las muestras secuenciadas de manera aleatoria en el periodo del 13 a 19 de febrero de 2023. Asimismo, los linajes derivados de BQ.1 también tienen una alta incidencia en España con el 35,6% de las muestras secuenciadas.

XBB.1.5 es la variante que está experimentando una mayor expansión a nivel global. Este linaje presenta una mutación en la posición 486 (F486P) que le confiere la capacidad de evasión de la respuesta a los anticuerpos y tiene mayor capacidad de transmisión respecto a XBB y XBB.1.

Síntomas y duración de XBB.1.5

Al tratarse de un linaje de Ómicron, la sintomatología de XBB.1.5 es similar a la de otras variantes, leve en la mayor parte de los casos.

Así, los síntomas más comunes asociados a XBB.1.5 son los siguientes:

* Fiebre.
* Tos.
* Dolor de garganta.
* Fatiga.
* Mucosidad y congestión nasal.
* Dolor de cabeza y articulaciones.
* Pérdida de gusto y olfato.

Actualmente, la duración de los síntomas es de 4 o 5 días en el punto álgido de la infección, aunque los signos pueden prolongarse hasta 4 días más durante la bajada.

Fuente: ONDA CERO. Disponible en https://bit.ly/3Lz2F2c

Así es la variante SARS-CoV-2 que se está expandiendo rápidamente por España

12 mar. La evolución de la pandemia de la COVID-19 camina desde hace meses hacia la normalización en cuanto a gravedad, pero las mutaciones del SARS-CoV-2 y sus diferentes variantes y subvariantes hacen que la alerta permanezca, ya que no se puede saber con absoluta certeza el efecto que tendrá una subvariante concreta en cuanto a impacto sanitario y hospitalizaciones.

Las causas de la covid persistente/Pixabay

El último informe 'Actualización de la situación epidemiológica de las variantes de SARS-CoV-2 en España', conocido hace apenas unos días, revela que una subvariante de ómicron que suponía el 9,7 % de los contagios en España en el estudio publicado hace un mes está ahora presente en el 40 % de las infecciones.

Se trata de la subvariante de Ómicron XBB.1.5, actualmente mayoritaria en España. El periodo analizado en este informe va del 13 al 19 de febrero pasados, con 45 secuencias asociadas al muestreo aleatorio procedentes de 6 comunidades autónomas distintas.

Otro dato a tener en cuenta: todos los casos en esa semana corresponden a la variante ómicron, con lo que la presencia residual de otras variantes que fueron mayoritarias hace meses parece haber desaparecido por completo.

Una variante cercana: la BQ.1

En segundo lugar de esta tabla están los derivados de BQ.1 (incluido BQ.1.1), que se sitúan en 35,6 por ciento, y los derivados de BA.2.75, que alcanzan el 13,3%; en este último grupo. CH.1.1 representa el 11,1 por ciento de las variantes analizadas. Por otra parte, el informe detalla que los análisis de aguas residuales realizados en la semana del 19 al 25 de febrero han comprobado una disminución de los linajes derivados de BA.4/BA.5 a nivel nacional.

Hace un mes, el predominio claro era para BQ.1 y sus linajes derivados, que suponían el 54,8 por ciento. Los linajes derivados de XBB se situaban en el 16,1 por ciento, incluido XBB.1.5, que alcanzaba el referido 9,7 por ciento, y los derivados de BA.2.75 eran un 12,9 por ciento, por lo que apenas han variado.

España no es un caso aislado. El informe de Sanidad apunta que XBB.1.5 es la variante que "está experimentando una mayor expansión a nivel global". "Este linaje presenta una mutación que le confiere la capacidad de evasión de la respuesta a los anticuerpos que ya presentaban XBB o XBB.1 pero afecta en menor grado a la unión al receptor ACE2, lo que podría implicar una mayor capacidad de transmisión respecto a XBB y XBB.1", detallan los técnicos del Ministerio.

Síntomas de la variante mayoritaria en España

Los síntomas más comunes de las personas contagiadas por XBB.1.5 son la tos, la fatiga extrema, el dolor de cabeza y las articulaciones, el dolor de garganta, mucosidad y congestión nasal, estornudos, voz ronca, ahogo, pérdida ocasional del gusto y el olfato, taquicardia o diarrea. También puede aparecer la fiebre entre los síntomas más frecuentes.

Estos síntomas pueden durar unos 4 o 5 días en la subida de la infección, y otros 4 más en los días de bajada, aunque la tos puede llegar a quedarse 2 o 3 semanas.

Fuente: HERALDO SALUD. Disponible en https://bit.ly/3LAyWG2

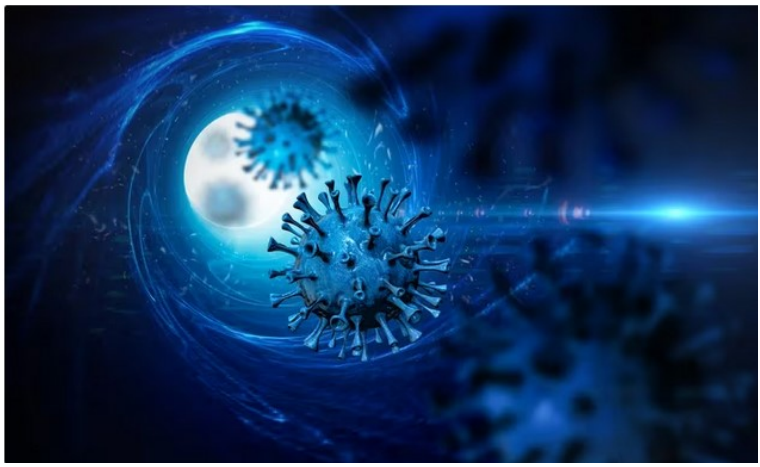
Una vacuna de células T, la nueva herramienta para combatir todas las variantes del coronavirus

13 mar. Una de las dificultades para terminar con la pandemia de COVID-19 que empezó hace más de tres años radica en que el coronavirus va evolucionando y aparecen nuevas variantes que son más transmisibles.

Ese desafío pendiente llevó a que investigadores del Instituto de Tecnología de Massachusetts (MIT), la

Universidad de Harvard y la Rama Médica de la Universidad de Texas, en los Estados Unidos estén desarrollando una vacuna novedosa que, a diferencia de las que ya se utilizan, podría contrarrestar todas las variantes del patógeno.

Tiene el potencial de ser una vacuna con una propiedad llamada "panvarianza" (panvariante) que podría evitar la necesidad de una vacuna de refuerzo diferente cada vez que una nueva variante entra en circulación.



El enfoque que siguen los científicos es nuevo. Buscan que la vacuna active la parte del sistema inmunitario que desencadena las células T "asesinas" (Getty)

En un artículo publicado en la revista *Frontiers in Immunology*, el equipo de investigadores informó sobre experimentos con ratones que demuestran la eficacia de la vacuna para prevenir la muerte por COVID-19.

Las vacunas virales suelen funcionar exponiendo el sistema inmunitario a un pequeño fragmento del virus. Esto puede crear respuestas aprendidas que protejan a las personas cuando se expongan al virus real.

La premisa de las vacunas de ARN mensajero es activar la parte del sistema inmunitario que libera anticuerpos neutralizantes. Para esoo, dan las células instrucciones (en forma de moléculas de ARN mensajero) para fabricar la proteína de la Espiga, que se encuentra en la superficie del coronavirus y cuya presencia puede desencadenar una reacción inmunitaria.

"El problema de este método es que el blanco cambia constantemente (la proteína puede variar de una variante del coronavirus a otra) y eso puede hacer que la vacuna sea ineficaz", explicó David Gifford, catedrático de Ingeniería Eléctrica e Informática e Ingeniería Biológica del MIT y coautor del artículo de Frontiers.

Gifford y sus colegas adoptaron entonces el nuevo enfoque. Seleccionaron un objetivo distinto para su vacuna: activar la parte del sistema inmunitario que desencadena las células T "asesinas", aquellas que atacan a las células infectadas por el virus. Una vacuna de este tipo no evitará que las personas contraigan la infección, pero podría evitar que enfermen gravemente o mueran.

Una de las principales innovaciones de este grupo consistió en introducir técnicas de aprendizaje automático en el proceso de diseño de la vacuna. Un aspecto crítico de ese proceso consiste en determinar qué partes del coronavirus y qué péptidos (cadenas de aminoácidos que son los componentes básicos de las proteínas), deben ir en la vacuna. Para eso hay que tamizar miles de péptidos del virus y seleccionar unos 30 que deben incorporarse.

Pero esa decisión tiene que tener en cuenta las llamadas moléculas HLA, fragmentos proteicos de la superficie de las células que actúan como "carteles" e indican a las células inmunitarias (que carecen de visión de rayos X) lo que ocurre dentro de otras células. La visualización de fragmentos proteicos específicos puede indicar, por ejemplo, que una determinada célula está infectada por el coronavirus y debe ser eliminada.

Se utilizaron algoritmos de aprendizaje automático para resolver un complicado conjunto de "problemas de optimización", señaló Brandon Carter, estudiante de doctorado del Departamento de Ingeniería Eléctrica e

Informática del MIT, afiliado al Laboratorio de Informática e Inteligencia Artificial del MIT (CSAIL) y autor principal del nuevo trabajo.

El objetivo primordial es seleccionar péptidos que estén presentes, o "conservados", en todas las variantes del virus. Pero esos péptidos también tienen que estar asociados a moléculas HLA que tengan una alta probabilidad de aparecer para que puedan alertar al sistema inmunitario.

"Se quiere que esto ocurra en el mayor número posible de personas para obtener la máxima cobertura poblacional de la vacuna", explicó Carter. Además, la vacuna debe cubrir varias veces a cada individuo. "Esto significa que se prevé que más de un péptido de la vacuna sea visualizado por algún HLA en cada persona". Alcanzar estos diversos objetivos es una tarea que puede agilizarse considerablemente mediante herramientas de aprendizaje automático (también llamado "*machine learning*").

Seleccionan péptidos que están presentes, o "conservados", en todas las variantes del virus/Archivo

Los últimos resultados proceden de experimentos realizados por colaboradores de la rama médica de la Universidad de Texas en Galveston y mostraron una fuerte respuesta inmunitaria en ratones a los que se administró la vacuna.

Los ratones de este experimento no murieron, sino que fueron "humanizados", lo que significa que tenían una molécula HLA que se encuentra en las células humanas. "Este estudio -sostuvo Carter- ofrece pruebas en un sistema vivo, un ratón real, de que las vacunas que ideamos utilizando el aprendizaje automático pueden ofrecer protección contra el COVID-19". Gifford consideró que es "la primera prueba experimental de que una vacuna formulada de este modo sería eficaz."

Paul Offit, profesor de pediatría de la División de Enfermedades Infecciosas del Hospital Infantil de Filadelfia, consideró que los resultados eran alentadores. "Como las células T son fundamentales en la protección contra COVID-19 grave, las futuras vacunas que se centren en inducir las respuestas más amplias de las células T serán un importante paso adelante en la próxima generación de vacunas", dijo.

"Habría que realizar más estudios en animales -y eventualmente en humanos- antes de que este trabajo pueda dar paso a la "próxima generación de vacunas", afirmó Offit, que no participó en el estudio. El hecho de que el 24 % de las células pulmonares de los ratones vacunados fueran células T, afirma Gifford, "demostró que sus sistemas inmunitarios estaban preparados para luchar contra la infección vírica." Pero hay que tener cuidado de evitar una respuesta inmunitaria demasiado fuerte, advierte, para no causar daños pulmonares.

Los científicos del MIT y sus colegas creen que su vacuna de células T tiene el potencial de ayudar a las personas inmunodeprimidas que no pueden producir anticuerpos neutralizantes y, por tanto, no pueden beneficiarse de las vacunas COVID-19 tradicionales. Su vacuna también puede aliviar el sufrimiento del COVID-19 Prolongado en personas que siguen albergando reservorios del virus mucho después de su infección inicial.

El 27 de enero pasado, el reconocido infectólogo Anthony Fauci junto con dos colegas había hecho un llamado a considerar más el desarrollo de vacunas universales contra los coronavirus en un artículo publicado en la revista *New England Journal of Medicine*.

"Ahora debemos dar prioridad al desarrollo de vacunas ampliamente protectoras como las vacunas universales contra la gripe en las que hemos estado trabajando en los últimos años", escribió Fauci y sus colegas. "Una vacuna universal contra coronavirus protegería idealmente contra el SARS-CoV-2 y los numerosos coronavirus de origen animal que podrían causar futuros brotes zoonóticos y pandemias. Las características ideales de tales vacunas incluyen propiedades asociadas a la protección tanto individual como comunitaria en pandemias", sostuvieron.

Fuente: INFOBAE. Disponible en https://bit.ly/3n4sLQn

Chasing Pfizer, GSK's 5-in-1 meningococcal vaccine delivers phase 3 trial win

Mar 14. Nearly three years after dosing the first patient in a phase 3 trial, GSK has now reported positive results from the trial of its much-anticipated combination meningitis vaccine.

GSK and Pfizer remain locked in the combination meningitis vaccine race. (GSK)

The shot, a combination of GSK's approved vaccines Bexsero and Menveo, targets meningitis and blood poisoning caused by the A, B, C, W, and Y groups of meningococcal bacteria.

The serogroups A, B, C, W and Y cause nearly all invasive meningococcal disease (IMD) cases globally, GSK said in a statement. As it stands now in the U.S., protection from all five groups requires four injections from two separate vaccines.

But GSK is looking to change that with its two-dose shot, which is administered six months apart.

GSK said that the vaccine candidate met endpoints in the trial, which enrolled healthy people between 10 and 25 years of age. The vaccine matched up to Bexsero and Menveo, eliciting a "clinically meaningful immune response."

The new data comes amid a race with Pfizer. The rivals started their phase 3 meningitis vaccine combination trials only two months apart in the summer of 2020, but Pfizer unveiled its positive data last year. The FDA is set to decide on Pfizer's pentavalent candidate in October.

GSK's jab was still in phase 2 back in 2016, when GlobalData expected it to debut in 2020 and grow to $435 million in sales by 2025.

Fuente: FIERCE Pharma. Disponible en https://bit.ly/3ZXZFAK

La FDA autorizó en Estados Unidos la aplicación de la vacuna bivalente de Pfizer-BioNTech para niños de 6 meses a 4 años

15 mar. La Administración de Alimentos y Medicamentos de Estados Unidos (FDA, por sus siglas en inglés) autorizó la aplicación de la vacuna bivalente contra la COVID-19 de Pfizer-BioNTech para los niños de 6 meses a 4 años en aquel país. Esto será posible, según señalaron en un comunicado oficial, "al menos 2 meses después de completar el esquema principal de vacunación con tres dosis de la vacuna monovalente (una cepa)" de la misma fórmula. De esta forma, desde la entidad prevén una dosis única de refuerzo para quienes estén dentro del mencionado rango etario.

"La autorización de hoy ofrece a los padres y cuidadores de niños de 6 meses a 4 años de edad que recibieron el esquema principal de vacunación de tres dosis con la vacuna monovalente contra el COVID-19 de Pfizer-BioNTech la oportunidad de actualizar la protección de sus hijos al darles una dosis de refuerzo con la vacuna bivalente contra la COVID-19 de Pfizer-BioNTech", dijo el doctor Peter Marks, director del Centro de Evaluación e Investigación Biológica de la FDA.

En segundo término, Marks precisó: "Los datos actualmente disponibles muestran que la vacunación sigue siendo la mejor defensa contra la enfermedad grave, la hospitalización y la muerte causadas por COVID-19 en todos los grupos de edad, y animamos a todas las personas que califican a asegurarse de que sus vacunas están al día con una vacuna bivalente contra la COVID-19".

"La vacuna bivalente contra la COVID-19 de Pfizer-BioNTech incluye un componente de ARNm de la cepa del virus original para proporcionar una respuesta inmunitaria que es ampliamente protectora contra la COVID-19 y un componente de ARNm en común entre los linajes de las variantes de ómicron BA.4 y BA.5 para proporcionar una mejor protección contra la COVID-19 causada por la variante Ómicron", valoraron en el comunicado.

Para llegar a esta autorización, la FDA evaluó los datos de respuesta inmunitaria de 60 niños de este grupo de edad que habían completado el esquema principal de vacunación con tres dosis de la vacuna monovalente de Pfizer-BioNTech y recibieron una dosis de refuerzo de la fórmula bivalente en un estudio clínico. "Un mes después de recibir la vacuna bivalente, los participantes del estudio demostraron una respuesta inmunitaria tanto a la cepa original del virus del SARS-CoV-2 como a la variante de Ómicron BA.4/ BA.5.", profundizaron.

Y sumaron: "La autorización está respaldada por los análisis previos de la FDA sobre la eficacia del esquema principal de vacunación con la vacuna monovalente contra el COVID-19 de Pfizer-BioNTech en personas de 16 años o mayores y en personas de 6 meses a 4 años de edad, así como por los análisis previos de los datos de respuesta inmunitaria en adultos mayores de 55 años que habían recibido una dosis de refuerzo con una vacuna bivalente contra la COVID-19 de Pfizer-BioNTech en investigación (original y ómicron BA.1).

En ese tono, desde la FDA describieron que, en uno de los estudios para evaluar la eficacia de la vacuna, “24 participantes de 6 a 23 meses tuvieron como efectos secundarios más frecuentes irritabilidad, somnolencia, enrojecimiento en el lugar de la inyección, dolor e hinchazón, disminución del apetito, fatiga y fiebre”. Además, “entre los 36 participantes de 2 a 4 años de edad, los efectos colaterales fueron fatiga, dolor en el lugar de la inyección, enrojecimiento e hinchazón, diarrea, vómitos, dolor de cabeza, dolor articular y escalofríos”.

Finalmente, el organismo estadounidense dejó las siguientes recomendaciones a la hora de la aplicación de esta vacuna bivalente.

-”Los niños de 6 meses a 4 años de edad que completaron su esquema principal de vacunación de tres dosis con la vacuna monovalente contra la COVID-19 Pfizer-de BioNTech hace más de dos meses califican ahora para recibir una dosis única de refuerzo de la vacuna bivalente contra la COVID-19 de Pfizer-BioNTech”.

-”Desde diciembre de 2022, los niños de 6 meses a 4 años de edad que recibieron las dos primeras dosis con la vacuna monovalente contra la COVID-19 de Pfizer-BioNTech deben haber completado su esquema principal de vacunación de tres dosis con la vacuna bivalente contra la COVID-19 de Pfizer-BioNTech. Estos niños en este grupo de edad no califican para una dosis de refuerzo de una vacuna bivalente en este momento y se espera que tengan protección contra los casos más graves de COVID-19".

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

Este año podría marcar el fin de la pandemia de Covid-19, según la OMS

15 mar. En algún momento de este año se acabará la pandemia de la Covid-19 y dejará de ser emergencia de salud pública de interés internacional, según consideraciones de la OMS, publicadas hoy por medios de prensa especializados.

Así se expresó el director general de la Organización Mundial de la Salud, (OMS), Tedros Adhanom Ghebreyesus al hacer un recuento desde que se declaró el 11 de marzo de 2020 que el brote mundial de esa enfermedad podría describirse como una pandemia.

Con antelación ya el 30 de enero de ese año fue calificada esa infección por el coronavirus SARS-CoV-2 como una emergencia de salud pública de importancia internacional.

“En ese momento, había menos de 100 casos notificados fuera de China y ninguna muerte reportada. Tres años después, hay casi siete millones de muertes registradas, pero sabemos que el número real de muertes es mucho mayor”, destacó Tedros.

Sin embargo, significó, el mundo está en una posición mucho mejor ahora que en cualquier momento durante la pandemia.

El titular de la OMS destacó la necesidad de aprender de las lecciones dejadas por la pandemia porque, de lo contrario, se repetirá el ciclo de pánico y negligencia que ha sido el sello distintivo de la respuesta mundial a las epidemias y pandemias durante décadas.

Aseguró que para vivir en un mundo más seguro se necesita la salud pública, contar con sistemas sanitarios fuertes, continuar con las labores de rastreo, y garantizar una atención primaria sólida.

Este lunes, la Organización Panamericana de la Salud analizó el borrador preliminar de un nuevo convenio, acuerdo u otro instrumento de salud internacional sobre la prevención, preparación y respuesta frente a pandemias.

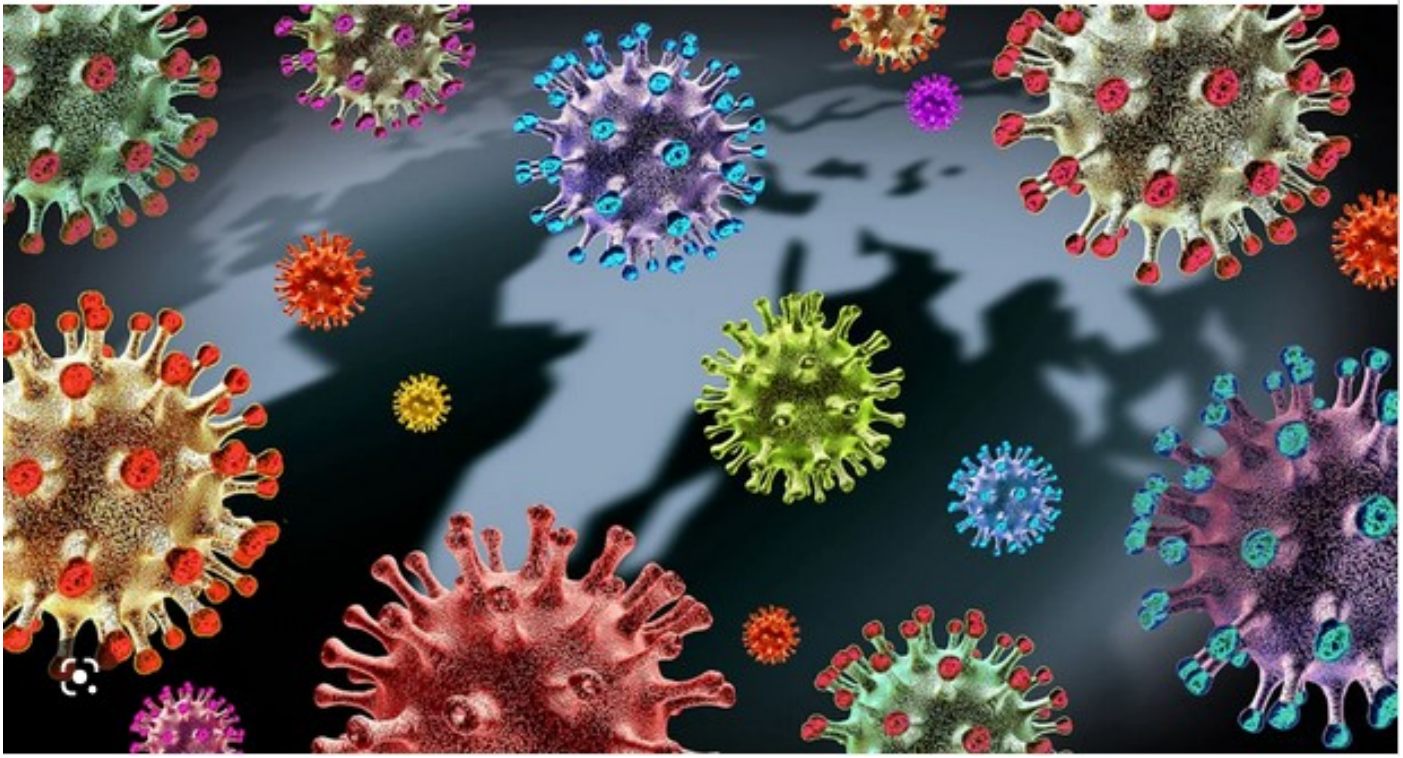
Autoridades de los ministerios de salud y de relaciones internacionales de las Américas recibieron la última actualización de las deliberaciones del Órgano de Negociación Intergubernamental creado para redactar y negociar el instrumento, el que se presentará para su aprobación por los Estados miembros de la OMS en 2024.

El documento podría complementar otras iniciativas, acciones y medidas destinadas a lograr mayor seguridad en el mundo frente a las pandemias, en particular el Reglamento Sanitario Internacional (RSI) de 2005.

Fuente: cubadebate. Disponible en https://bit.ly/3FBweMO

La OMS "jubila" las variantes del coronavirus desde alfa a Ómicron

16 mar. La Organización Mundial de la Salud (OMS) anunció hoy que pasa a considerar como "previamente en circulación" las variantes alfa, beta, gamma, delta y ómicron del coronavirus causante de la covid-19, y se centrará ahora en el estudio de nuevas subvariantes de la última de ellas, surgidas desde 2022.



Una de las subvariantes de ómicron, la XBB 1.5, considerada una de las más contagiosas y actualmente de las más presentes en los casos de la pandemia, pasa a ser considerada "variante de interés", mientras que otras cinco (BQ.1, BA.2.75, CH.1.1, XBB y XBF) se convierten en "variantes bajo vigilancia".

Si alguna de ellas merece mayor monitorización y medidas de prevención especiales, pasaría a ser "variante de preocupación", como lo fueron alfa, beta, gamma, delta y ómicron, y se le asignaría una nueva letra del alfabeto griego, indicó la OMS en un comunicado.

La variante delta, primero detectada en la India, fue la predominante hasta finales de 2021, en la que la ómicron (hallada primero en análisis en Sudáfrica) la fue sustituyendo.

La ómicron, además de tener mayor facilidad de transmisión, desarrolla con mayor rapidez nuevas subvariantes, que se han multiplicado desde el pasado año, creando cierta confusión en el seguimiento de la evolución del coronavirus SARS-CoV-2 causante de la covid-19.

Los cambios anunciados "no implican que la circulación de los virus ómicron haya dejado de ser una amenaza para la salud pública", aclaró la OMS, que destacó que la modificación "se lleva a cabo para identificar mejor nuevas posibles amenazas".

La OMS recuerda en todo caso que las variantes derivadas de ómicron tienden a afectar el tracto respiratorio superior (faringe, tráquea...) y no el inferior (pulmones) como las anteriores, un hecho que contribuye a que los casos sean en general menos graves.

Fuente: SWI swissinfo.ch. Disponible en https://bit.ly/3Tp7Eo2

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20230301:20230315 as the publication date 97 records*

1.4140500ANWENDUNG EINER HETEROCYCLISCHEN VERBINDUNG MIT MINDESTENS ZWEI SCHWEFELATOMEN BEI DER HERSTELLUNG EINES NANOIMPFSTOFFS UND HERGESTELLTER NANOIMPFSTOFF
EP - 01.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 20932686 Solicitante SUZHOU WEAST BIOTECHNOLOGY CO LTD Inventor/a YANG HUANGHAO
The present invention pertains to the technical field of immunotherapy or disease prevention and treatment with vaccines, in particular to a heterocyclic compound containing two or more sulfur atoms and an application thereof in preparing a nano-vaccine. Provided is the application of the heterocyclic compound containing at least two sulfur atoms and capable of being covalently or non-covalently linked to a polypeptide in preparing the nano-vaccine. A nanoparticle prepared by self-assembly of the compound and an antigen can enter the dendritic cytoplasm in a membrane-crossing manner, thereby improving the uptake efficiency of the antigen and an immune adjuvant. In the process of entering a cell, the nano-vaccine can effectively avoid or reduce biodegradation of the antigen or nucleic acid adjuvant caused by enzymes in lysosomes, and therefore the nano-vaccine can efficiently activate the dendritic cells and improve the cross-presentation of the antigen, thereby effectively activating CD8+T cells and promoting T cell proliferation. Therefore, the nano-vaccine can prevent tumor cell proliferation and virus infection by efficient immune activation and immune regulation.

2.4138897CORONAVIRUS-IMPFSTOFF
EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21720413 Solicitante BIONTECH SE Inventor/a SAHIN UGUR
This disclosure relates to the field of RNA to prevent or treat coronavirus infection. In particular, the present disclosure relates to methods and agents for vaccination against coronavirus infection and inducing effective coronavirus antigen-specific immune responses such as antibody and/or T cell responses. These methods and agents are, in particular, useful for the prevention or treatment of coronavirus infection. Administration of RNA disclosed herein to a subject can protect the subject against coronavirus infection. Specifically, in one embodiment, the present disclosure relates to methods comprising administering to a subject RNA encoding a peptide or protein comprising an epitope of SARS-CoV-2 spike protein (S protein) for inducing an immune response against coronavirus S protein, in particular S protein of SARS-CoV-2, in the subject, i.e., vaccine RNA encoding vaccine antigen. Administering to the subject RNA encoding vaccine antigen may provide (following expression of the RNA by appropriate target cells) vaccine antigen for inducing an immune response against vaccine antigen (and disease-associated antigen) in the subject. In December 2019, a pneumonia outbreak of unknown cause occurred in Wuhan, China and it became clear that a novel coronavirus (severe acute respiratory syndrome coronavirus 2; SARS-CoV-2) was the underlying cause. The genetic sequence of SARS-CoV-2 became available to the WHO and public (MN908947.3) and the virus was categorized into the betacoronavirus subfamily. By sequence analysis, the phylogenetic tree revealed a closer relationship to severe acute respiratory syndrome (SARS) virus isolates than to another coronavirus infecting humans, namely the Middle East respiratory syndrome

(MERS) virus. On February 2nd, a total of 14'557 cases were globally confirmed in 24 countries including Germany and a subsequent self-sustaining, human-to-human virus spread resulted in that SARS-CoV-2 became a global epidemic.

3.4141111IMPFSTOFF GEGEN ONKOLYTISCHES VIRUS UND ARZNEIMITTEL ZUR BEHANDLUNG VON TUMOREN DURCH KOMBINATION DES IMPFSTOFFS GEGEN ONKOLYTISCHES VIRUS MIT IMMUNZELLEN
EP - 01.03.2023
Clasificación Internacional C12N 7/01 Nº de solicitud 21803001 Solicitante JOINT BIOSCIENCES SH LTD Inventor/a ZHOU GUOQING
Provided are an oncolytic virus attenuated strain, an oncolytic virus vaccine and a drug for treating tumors by combining the oncolytic virus vaccine with immune cells. Provided is a new oncolytic virus attenuated strain, which is obtained by means of the site-directed mutation of a VSV wild-type virus matrix protein M. Also provided is a vaccine capable of being applied to tumor treatment on the basis of the oncolytic virus attenuated strain. Further provided is a drug capable of efficiently treating various tumors by means of applying the vaccine and immune cells in combination on the basis of the vaccine.

4.4144751NEUER CORONAVIRUSIMPFSTOFF UND VERFAHREN ZUM ENTWERFEN UND HERSTELLEN EINES VIRUSIMPFSTOFFS
EP - 08.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud 21194414 Solicitante MAX DELBRUECK CENTRUM FUER MOLEKULARE MEDIZIN HELMHOLTZ GEMEINSCHAFT Inventor/a DE LA ROSA KATHRIN
The present invention relates to a mutant receptor-binding domain (mRBD) of a coronavirus (mRBD-CORONA) or a fragment thereof and mutant spike protein of the coronavirus (CORONA-mSpike) or a fragment thereof comprising the CORONA-mRBD or the fragment thereof.Furthermore, the present invention relates to a polypeptide or protein comprising the mRBD-CORONA or the fragment thereof or CORONA-mSpike or the fragment thereof and a nucleic acid comprising a nucleotide sequence encoding for the mRBD-CORONA or the fragment thereof or the CORONA-mSpike or the fragment thereof.Furthermore, the present invention relates to a vaccine composition comprising one or more CORONA-mRBDs or fragments thereof, one or more CORONA-mSpikes, one or more polypeptides or proteins and/or one or more nucleic acids according to the present invention.Furthermore, the present invention relates to the one or more CORONA-mRBDs or fragments thereof, the one or more CORONA-mSpikes, the one or more polypeptides or proteins, the one or more nucleic acids and/or the vaccine composition according to the present invention for use in the prevention and/or treatment of diseases caused by coronaviruses in a subject. Furthermore, the present invention relates to a method for designing and/or obtaining an active ingredient for a vaccine composition and to a VIRUS-mRBD or a fragment thereof designed and/orobtained by the method for obtaining the VIRUS-mRBD according to the present invention.

5.WO/2023/031306NEW CORONAVIRUS VACCINE AND METHOD FOR DESIGNING AND OBTAINING A VIRUS VACCINE
WO - 09.03.2023

Clasificación Internacional C07K 14/005 Nº de solicitud PCT/EP2022/074255 Solicitante MAX-DELBRÜCK-CENTRUM FÜR MOLEKULARE MEDIZIN IN DER HELMHOLTZ-GEMEINSCHAFT Inventor/a DE LA ROSA, Kathrin
The present invention relates to a mutant receptor-binding domain (mRBD) of a coronavirus (mRBD-CORONA) or a fragment thereof and mutant spike protein of the coronavirus (CORONA-mSpike) or a fragment thereof comprising the CORONA-mRBD or the fragment thereof. Furthermore, the present invention relates to a polypeptide or protein comprising the mRBD-CORONA or the fragment thereof or CORONA-mSpike or the fragment thereof and a nucleic acid comprising a nucleotide sequence encoding for the mRBD-CORONA or the fragment thereof or the CORONA-mSpike or the fragment thereof. Furthermore, the present invention relates to a vaccine composition comprising one or more CORONA-mRBDs or fragments thereof, one or more CORONA- mSpikes, one or more polypeptides or proteins and/or one or more nucleic acids according to the present invention. Furthermore, the present invention relates to the one or more CORONA-mRBDs or fragments thereof, the one or more CORONA-mSpikes, the one or more polypeptides or proteins, the one or more nucleic acids and/or the vaccine composition according to the present invention for use in the prevention and/or treatment of diseases caused by coronaviruses in a subject. Furthermore, the present invention relates to a method for designing and/or obtaining an active ingredient for a vaccine composition and to a VIRUS-mRBD or a fragment thereof designed and/orobtained by the method for obtaining the VIRUS-mRBD according to the present invention.

6.WO/2023/031392NOVEL LIPID NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS COMPRISING PHOSPHATIDYLSERINE
WO - 09.03.2023
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/EP2022/074435 Solicitante CUREVAC SE Inventor/a BAUMHOF, Patrick
The invention relates to a vaccine composition comprising a) at least one nucleic acid encoding at least one antigen or fragment or variant thereof; and b) a carrier composition, wherein the carrier composition comprises the phospholipid phosphatidylserine. The present invention further relates to a pharmaceutical composition comprising the vaccine composition and a pharmaceutically acceptable carrier, diluent or excipient, and to the vaccine composition or pharmaceutical composition for use in the treatment or prophylaxis of (as well as a corresponding method of treatment thereof) infectious diseases; cancer or tumor diseases, disorders or conditions; specific liver diseases; allergies; or autoimmune disease, disorder or condition; in a subject. Still further, the present invention is concerned with a kit or kit of parts, comprising the vaccine composition or the pharmaceutical composition as well as a method of inducing an immune response in a subject. Finally, the present invention is concerned with a use of a vaccine composition or the pharmaceutical composition or the kit or kit of parts for (i) inducing an immune response and for (ii) inducing an antigen specific T-cell response in a subject.

7.4140501VERBESSERTER PEPTIDIMPFSTOFF
EP - 01.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 21793632 Solicitante BRIGHTPATH BIOTHERAPEUTICS CO LTD Inventor/a SASAKURA YUKIE

It is an object of the present invention to provide a peptide vaccine complexed so that the peptide vaccine can be delivered specifically to the surface of specific immune cells. It is another object of the present invention to provide a method for delivering a peptide vaccine specifically to the surface of specific immune cells. As a result of diligent studies, the inventors of the present invention have shown that the aforementioned objects can be achieved by providing a peptide vaccine combined with an IgG binding peptide capable of binding to an IgG that is an agonist against molecules on the surface of specific immune cells (e.g., dendritic cells).

8.4138893ZELLULÄRE IMPFSTOFFPLATTFORM UND VERFAHREN ZUR VERWENDUNG
EP - 01.03.2023
Clasificación Internacional A61K 39/02 Nº de solicitud 21793758 Solicitante INTIMA BIOSCIENCE INC Inventor/a CHOUDHRY MODASSIR
Cellular vaccine platforms, such as vaccine immune viral opsonization platforms, for eliciting host immune responses are disclosed. Also disclosed are the methods of making and using the cellular vaccine platforms in stimulating host immune responses.

9.4142786LEBENDER ATTENUIERTER MASERNVIRUS-VEKTORISIERTER IMPFSTOFF FÜR SARS-COV-2
EP - 08.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21797652 Solicitante OHIO STATE INNOVATION FOUNDATION Inventor/a LI JIANRONG
Disclosed herein is a live attenuated recombinant measles virus (rMeV)-based coronavirus vaccine containing a SARS-CoV-2 spike (S) protein that has at least one mutation to remove a glycosylation site. In some embodiments, the rMeVs-based coronavirus vaccine contains full-length stabilized pre-fusion and native S proteins, S proteins of SARS-CoV-2 variants, truncated S proteins lacking its transmembrane and cytoplasmic domains, S proteins lacking glycosylation sites, the monomeric and trimeric receptor-binding domain (RBD), the monomeric and trimeric S1 protein, Fc-fused RBD, or Fc-fused S1 protein. Also disclosed is a live attenuated recombinant coronavirus vaccine, wherein a stabilized prefusion spike (S) protein is inserted into a viral vector genome.

10.WO/2023/029027VACCINE SYSTEM FOR PREVENTING OR TREATING TYPE I DIABETES AND PREPARATION METHOD THEREFOR
WO - 09.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2021/116632 Solicitante SUZHOU ERSHENG BIOMEDICAL CO., LTD. Inventor/a LIU, Mi
A vaccine system for preventing or treating type I diabetes. The vaccine system utilizes delivery particles to deliver a whole-cell water-soluble component and/or non-water-soluble component in a cell or tissue containing a type I diabetes-related antigen. The immune tolerance generated by an autoantigen in a whole-cell component can be used for preventing and treating type I diabetes, and is a powerful alternative for a type I diabetes-related vaccine or drug.

11.4139923VERFAHREN UND SYSTEM FÜR OPTIMALES IMPFSTOFFDESIGN
EP - 01.03.2023
Clasificación Internacional G16B 20/40 Nº de solicitud 20734081 Solicitante NEC LABORATORIES EUROPE GMBH Inventor/a MALONE BRANDON

According to an aspect of the present invention, there is provided a computer-implemented method of selecting one or more amino acid sequences for inclusion in a vaccine from a set of predicted immunogenic candidate amino acid sequences, the method comprising: identifying an immune profile response value for each candidate amino acid sequence in respect of each one of a plurality of sample components of an immune profile, wherein the immune profile response value represents whether the candidate amino acid sequence results in an immune response for the sample component of an immune profile; retrieving a plurality of immune profiles for a population; generating a plurality of representative immune profiles for the population, wherein the representative immune profiles overlap with the sample components of an immune profiles; and, selecting the one or more amino acid sequences for inclusion in the vaccine that minimises a likelihood of no immune response for each representative immune profile, based on the immune profile response values. A computer readable medium is also provided together with a method of there is provided a method of creating a vaccine.

12.WO/2023/024609ADJUVANT OF NOVEL CORONAVIRUS VACCINE AND USE THEREOF, AND BIVALENT RECOMBINANT VACCINE OF NOVEL CORONAVIRUS
WO - 02.03.2023
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/CN2022/094484 Solicitante BEIJING HEALTH GUARD BIOTECHNOLOGY, INC. Inventor/a LIU, Yongjiang
Disclosed in the present invention are an adjuvant for a novel coronavirus COVID-19 vaccine, and a developed bivalent vaccine thereof which contains antigens of a novel coronavirus epidemic HuB strain and a South African mutant strain B.1.351.

13.4138896KOMBINATION VON IMPFSTOFFEN ZUR PROPHYLAKTISCHEN BEHANDLUNG EINES SCHWEINS
EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21719141 Solicitante INTERVET INT BV Inventor/a WITVLIET MAARTEN HENDRIK
The invention pertains to a combination of a first vaccine comprising anon-replicating immunogen of porcine circovirus type 2 (PCV-2) and a non-replicating immunogen of Mycoplasma hyopneumoniae, and a second vaccine comprising a live attenuated porcine reproductive and respiratory syndrome (PRRS) virus, for use in prophylactically treating a pig against an infection with PCV-2, an infection with Mycoplasma hyopneumoniae and an infection with PRRS virus, by associated separate injection of the first vaccine and the second vaccine into a tissue of the pig at a first and a second injection site respectively, wherein the first and second injection sites are at most 5 cm apart from each other.

14.202227056341INDIVIDUALIZED THERAPEUTIC ANTICANCER VACCINE
IN - 03.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 202227056341 Solicitante NYKODE THERAPEUTICS ASA Inventor/a FREDRIKSEN, Agnete, Brunsvik
The present invention relates to an individualized therapeutic anticancer vaccine, methods of treatment of cancer wherein such an anticancer vaccine is used as well as methods for producing the vaccine.

15.4143207IMPFSTOFFZUSAMMENSETZUNG ZUR VORBEUGUNG ODER BEHANDLUNG VON SARS-COV-2-INFEKTIONEN
EP - 08.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud 21796754 Solicitante SK BIOSCIENCE CO LTD Inventor/a KWON TEAWOO
Provided is a recombinant protein for preventing or treating infection of SARS-Coronavirus-2 antigen comprising an extended receptor binding domain (RBD) of a spike protein of SARS-Coronavirus-2, and a vaccine composition comprising thereof. Also the present invention relates to a method for preventing infection of SARS-Coronavirus-2 by administering the recombinant antigen protein to a subject. The present invention can prevent COVID-19 infection. The present invention can be used as a vaccine.

16.WO/2023/026207POTENTLY NEUTRALIZING NOVEL HUMAN MONOCLONAL ANTIBODIES AGAINST SARS-COV-2 (COVID-19)
WO - 02.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/IB2022/057923 Solicitante TRANSLATIONAL HEALTH SCIENCE AND TECHNOLOGY INSTITUTE Inventor/a BHATTACHARYA, Jayanta
The present invention relates to seven novel neutralizing human monoclonal antibodies (mAbs) THSC20.HVTR04, THSC20.HVTR06, THSC20.HVTR11, THSC20.HVTR26 THSC20.HVTR39, THSC20.HVTR55 and THSC20.HVTR88 and their nucleotide sequences isolated from a convalescent individual of Indian origin by antigen (RBD)-specific single B cell sorting and cloning of variable heavy and light IgG chain genes. The isolated mAbs demonstrate neutralization of wild type Wuhan strain and the following variants of concern: South African variant of concern (B.1.351), UK variant of concern (B.1.1.7), Brazilian variant of concern (P1), Delta (B.1.617.2) and Omicron (B.1.1.529) with exception of THSC20.HVTR39 unable to neutralize Gamma (P1). Of these THSC20.HVTR04 is able to potently neutralize Omicron BA.2 and BA.4/BA.5, THSC20.HVTR06 is able to neutralize Omicron BA.1, BA.2 and BA.5 with low potency, THSC20.HVTR11 potently neutralizes Omicron BA.1 and BA.2 and THSC20.HVTR26 neutralizes Omicron BA.1 only with moderate potency. The present invention also discloses the binding affinity of the neutralizing mAbs to the receptor binding domain (RBD) representing Wuhan isolate (wild type). The present invention also, discloses the use of neutralizing monoclonal antibodies (mAbs) against SARS-CoV-2 for its diagnostic, prognostic, preventive and therapeutic purposes.

17.20230075979CORONAVIRUS VACCINE
US - 09.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17698829 Solicitante BioNTech SE Inventor/a Ugur Sahin
This disclosure relates to the field of RNA to prevent or treat coronavirus infection. In particular, the present disclosure relates to methods and agents for vaccination against coronavirus infection and inducing effective coronavirus antigen-specific immune responses such as antibody and/or T cell responses. Specifically, in one embodiment, the present disclosure relates to methods comprising administering to a subject RNA encoding a peptide or protein comprising an epitope of SARS-CoV-2 spike protein (S

protein) for inducing an immune response against coronavirus S protein, in particular S protein of SARS-CoV-2, in the subject, i.e., vaccine RNA encoding vaccine antigen.

18.20230073461CORONAVIRUS VACCINE
US - 09.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17699035 Solicitante BioNTech SE Inventor/a Ugur Sahin
This disclosure relates to the field of RNA to prevent or treat coronavirus infection. In particular, the present disclosure relates to methods and agents for vaccination against coronavirus infection and inducing effective coronavirus antigen-specific immune responses such as antibody and/or T cell responses. Specifically, in one embodiment, the present disclosure relates to methods comprising administering to a subject RNA encoding a peptide or protein comprising an epitope of SARS-CoV-2 spike protein (S protein) for inducing an immune response against coronavirus S protein, in particular S protein of SARS-CoV-2, in the subject, i.e., vaccine RNA encoding vaccine antigen.

19.20230061673FORMULATIONS OF DENGUE VIRUS VACCINE COMPOSITIONS
US - 02.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17815037 Solicitante Merck Sharp & Dohme LLC Inventor/a Michael S. Ryan
The present invention relates to formulations of dengue virus vaccine comprising at least one live, attenuated dengue virus or live, attenuated chimeric flavivirus, a buffer, a sugar, a cellulose derivative, a glycol or sugar alcohol, optionally an alkali or alkaline salt and an amino acid; and formulations of dengue virus vaccine comprising at least one live, attenuated dengue virus or live, attenuated chimeric flavivirus, a buffer, a sugar of at least 150 mg/ml, a carrier, and optionally an alkali or alkaline salt and an amino acid.

20.WO/2023/023940IMMUNOGEN FOR INDUCING BROAD-SPECTRUM ANTI-CORONAVIRUS T CELL VACCINE AND USE THEREOF
WO - 02.03.2023
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/CN2021/114313 Solicitante FUDAN UNIVERSITY Inventor/a XU, Jianqing
Provided in the present invention are an immunogen for inducing a broad-spectrum anti-coronavirus T cell vaccine and the use thereof. Specifically, provided are an immunogenic peptide, which comprises one or more shared peptides selected from various coronavirus early-expression protein polyproteins, membrane proteins, nucleocapsid proteins, envelope proteins and spike proteins, and a molecule for encoding same, a vector or host cell thereof, and a product. The vaccine of the present invention can be used for preventing and treating various coronaviruses.

21.WO/2023/030476IMMUNOGENIC COMPOSITIONS AND METHODS FOR IMMUNIZATION AGAINST VARIANTS OF SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-COV-2)
WO - 09.03.2023
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/CN2022/116668 Solicitante MEDIGEN VACCINE BIOLOGICS CORPORATION Inventor/a CHEN, Charles
Provided are immunogenic compositions and methods for immunization against variants of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), especially

an immunogenic composition having a recombinant SARS-CoV-2 S protein derived from Beta (B. 1.351) variant and methods using an immunogenic composition derived from SARS-CoV-2 Beta (B. 1.351) variant.

22.WO/2023/025002STREPTOCOCCUS PNEUMONIAE CONJUGATE VACCINE COMPOSITION
WO - 02.03.2023
Clasificación Internacional A61K 39/385 Nº de solicitud PCT/CN2022/113059 Solicitante CANSINO BIOLOGICS INC. Inventor/a WANG, Haomeng
The present invention provides a glycoconjugate and an immunogenic composition comprising the glycoconjugate, and also provides a preparation method for the glycoconjugate, which comprises: oxidizing a primary hydroxyl group of bacterial capsular polysaccharide, which is conjugated to a carrier protein directly or by passing through a spacer group, so as to prepare and obtain a glycoconjugate. Also disclosed are an application of the glycoconjugate and immunogenic composition in the preparation of a drug or vaccine to prevent and/or treat individual Streptococcus pneumoniae infections and diseases related to Streptococcus pneumoniae.

23.WO/2023/027402VACCINE FOR PREVENTING AFRICAN SWINE FEVER, COMPRISING AFRICAN SWINE FEVER VIRUS-DERIVED ANTIGEN PROTEIN
WO - 02.03.2023
Clasificación Internacional A61K 39/187 Nº de solicitud PCT/KR2022/012142 Solicitante BIOAPPLICATIONS INC. Inventor/a KANG, Hyangju
The present invention relates to: a recombinant vector comprising a nucleotide sequence of antigen protein(s) Lectin, CD2v, p72, p54, p30, p15, p35, E199L, and/or F317L of an African swine fever virus; a transformant transformed by means of the recombinant vector; and a vaccine composition for preventing African swine fever, comprising, as an active ingredient, African swine fever virus antigen protein(s) Lectin, CD2v, p72, p54, p30, p15, p35, E199L, and/or F317L, isolated from the transformant; and the like.

24.WO/2023/031869BOVINE EPHEMERAL FEVER AND LUMPY SKIN DISEASE ANTIGENIC CONSTRUCTS
WO - 09.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/IB2022/058261 Solicitante UNIVERSITY OF CAPE TOWN Inventor/a WILLIAMSON, Anna-Lise
This invention relates to a recombinant LSDV vector encoding a consensus BEFV Gb protein and a BEFV M protein. The invention also relates to combinations of the BEFV Gb and M proteins and the LSDV vector, compositions containing the BEFV Gb protein, BEFV M protein, and the LSDV vector and vaccines containing the BEFV Gb and M proteins and the LSDV vector. The invention further relates to a dual vaccine containing the BEFV Gb and M proteins and a modified LSDV comprising a stabilised SOD-homolog (SODis) gene, methods of producing the BEFV Gb and M proteins and the recombinant LSDV and pharmaceutical compositions either comprising the recombinant LSDV vector encoding the BEFV Gb and BEFV M proteins. More specifically, the invention relates to a dual vaccine against lumpy skin disease virus and Bovine Ephemeral Fever virus.

25.20230070714METHOD FOR MONITORING STABILITY OF POLYSACCHARIDE-PROTEIN CONJUGATE VACCINES

US - 09.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17929700 Solicitante SERUM INSTITUTE OF INDIA PVT LTD. Inventor/a Sunil Jagdishprasad GAIROLA
The present disclosure provides a process for assaying stability of monovalent and/or multivalent, liquid and lyophilized polysaccharide protein conjugate vaccine compositions using HPLC-SEC method. The method provides stability analysis (lot to lot) of polysaccharide protein conjugate vaccine with respect to aggregation profile, molar mass distribution and/or molecular size distribution, and data can be utilized for quality control during storage and batch release. The method is performed in the presence of multiple carrier proteins, free polysaccharides and excipient, without any interference of said components.

26.4145124VERFAHREN ZUR ÜBERWACHUNG DER STABILITÄT VON POLYSACCHARID-PROTEIN-KONJUGAT-IMPFSTOFFEN
EP - 08.03.2023
Clasificación Internacional G01N 30/46 Nº de solicitud 22193755 Solicitante SERUM INSTITUTE OF INDIA PVT LTD Inventor/a GAIROLA SUNIL JAGDISHPRASAD
The present disclosure provides a process for assaying stability of monovalent and/or multivalent, liquid and lyophilized polysaccharide protein conjugate vaccine compositions using HPLC-SEC method. The method provides stability analysis (lot to lot) of polysaccharide protein conjugate vaccine with respect to aggregation profile, molar mass distribution and/or molecular size distribution, and data can be utilized for quality control during storage and batch release. The method is performed in the presence of multiple carrier proteins, free polysaccharides and excipient, without any interference of said components.

27.WO/2023/034957STABILIZATION OF ANTIGENS FOR LONG TERM ADMINISTRATION IN TRANSDERMAL MICRONEEDLE PATCHES
WO - 09.03.2023
Clasificación Internacional A61K 9/10 Nº de solicitud PCT/US2022/075888 Solicitante UNIVERSITY OF CONNECTICUT Inventor/a AGRAHARI, Vivek
Described herein are compositions and methods for stabilizing RNA and protein antigens for long-term storage and use in transdermal microneedle patches, methods for filling microneedles, and methods of use. A stabilized RNA vaccine composition comprises: a complex of RNA with one or more cationic polymers; and one or more cationic lipid entities. A method for stabilizing RNA comprises: forming a complex comprising the RNA with one or more cationic polymers; mixing the complex with one or more cationic lipid entities comprising liposomes or lipid nanoparticles to form a lipid mixture; and drying the lipid mixture under vacuum. The compositions and methods may be employed in the preparation of vaccine medicaments.

28.4139921VERFAHREN UND SYSTEM ZUR IDENTIFIZIERUNG EINER ODER MEHRERER KANDIDATENREGIONEN EINES ODER MEHRERER AUSGANGSPROTEINE ZUR HEMMUNG EINER IMMUNOGENEN REAKTION UND VERFAHREN ZUR ERZEUGUNG EINES IMPFSTOFFS
EP - 01.03.2023
Clasificación Internacional G16B 15/30 Nº de solicitud 21718916 Solicitante NEC ONCOIMMUNITY AS Inventor/a SIMOVSKI BORIS

A computer-implemented method of identifying one or more candidate regions of one or more source proteins that are predicted to instigate an adaptive immunogenic response across a plurality of human leukocyte antigen, HLA, types, wherein the one or more source proteins has an amino acid sequence is disclosed. The method comprises (a) accessing the amino acid sequence of the one or more source proteins; (b) accessing a set of HLA types; (c) predicting an immunogenic potential of a plurality of candidate epitopes within the amino acid sequence, for each of the set of HLA types; (d) dividing the amino acid sequence into a plurality of amino acid sub-sequences; (e) for each of the plurality of amino acid sub-sequences, generating a region metric that is indicative of a predicted ability of the amino acid sub-sequence to instigate an immunogenic response across the set of HLA types, wherein the region metrics are based on the predicted immunogenic potentials of the plurality of candidate epitopes, for each of the set of HLA types; and (f) applying a statistical model to identify whether any of the generated region metrics are statistically significant, whereby an amino acid sub-sequence identified as having a statistically significant region metric corresponds to a candidate region of the amino acid sequence that is predicted to instigate an immunogenic response across at least a subset of the set of HLA types. A corresponding system is also disclosed, as well as a method for creating a vaccine.

29.WO/2023/025003METHOD FOR PREPARING PNEUMOCOCCAL-BINDING VACCINE
WO - 02.03.2023
Clasificación Internacional A61K 39/385 Nº de solicitud PCT/CN2022/113063 Solicitante CANSINO BIOLOGICS INC. Inventor/a WANG, Haomeng
A glycoconjugate, a specific method for preparing same by means of deriving a carboxyl group of a bacterial capsular polysaccharide from a spacer and then binding same to a carrier protein, and an immunogenic composition containing the glycoconjugate. Also disclosed is the use of the glycoconjugate and the immunogenic composition in the preparation of a drug or a vaccine for preventing and/or treating individual infections with Streptococcus pneumoniae and diseases related to same. The glycoconjugate has the characteristics of a higher immunogenicity and a higher bactericidal effect.

30.4138895SARS-COV-2-IMPFSTOFFE
EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21718622 Solicitante NEC ONCOIMMUNITY AS Inventor/a STRATFORD RICHARD
The present invention relates to a coronavirus vaccine composition, comprising one or more epitopes suitable for stimulating a broad adaptive immune response across a plurality of human leukocyte antigen (HLA) populations, for either MHC Class I and/or MHC Class II immunogenicity. The selection of such epitopes is made possible by the generation of predictive data by an artificial intelligence (AI)-driven platform, through the analysis of large scale epitope mapping of the SARS-CoV-2 proteome and epitope scoring based upon predicted immunogenicity, followed by robust statistical analysis and Monte Carlo-based simulation. The vaccine compositions of the present invention are suitable for use in the therapeutic or prophylactic treatment of SARS-CoV-2 infections. The invention also describes methods for using said compositions.

31.4142776IMPFSTOFFE GEGEN KREBS UND ENTSPRECHENDE THERAPIE
EP - 08.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 21723181 Solicitante THE INSTITUTE OF CANCER RES ROYAL CANCER HOSPITAL Inventor/a PETTITT STEPHEN
The present invention provides an anti-cancer vaccine comprising: (i) at least one peptide comprising the amino acid sequence of a neoantigen encoded by a mutant homologous recombination (HR) DNA repair gene selected from the group: BRCA1, BRCA2, PALB2, CDK12, RAD51B, RAD51C and RAD51D, wherein the mutant gene comprises a reversion mutation; and/or (ii) at least one polynucleotide encoding the at least one peptide of (i). Also provided are engineered T cells that recognise said neoantigen. Related methods and medical uses of the vaccine and/or engineered T cell are provided, including for the treatment of cancers, such as homologous recombination (HR) deficient cancers that acquire PARP inhibitor resistance or platinum resistance by development of reversion mutations in an HR DNA repair gene selected from the group: BRCA1, BRCA2, PALB2, CDK12, RAD51B, RAD51C and RAD51D.

32.4142782VERFAHREN ZUR ERZEUGUNG VON IMPFSTOFFZUSAMMENSETZUNGEN ZUR AUSLÖSUNG DER REAKTIONEN MENSCHLICHER LEUKOZYTENANTIGENKLASSE I AUF CD8-T-ZELLEN GEGEN VIRALE NICHTVIRION-INTEGRALE ABGELEITETE EPITOPE
EP - 08.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21721519 Solicitante GENOVIE AB Inventor/a JARVIS REAGAN MICHEAL
Method for providing a vaccine composition capable of effectively inducing a systemic immune response and/or a localised immune response upon administration, wherein the composition comprises human leukocyte antigen class I (HLAI) -restricted epitopes selected from viral pathogen non-virion-integral proteins (non-VIP) and thus prime a CD8 T-cell response specifically directed against virally infected cells.

33.20230071518INTRANASAL mRNA VACCINES
US - 09.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17799118 Solicitante eTheRNA immunotherapies NV Inventor/a Wim TIEST
The present invention in general to intranasal mRNA vaccines, more in particular comprising one or more immunostimulatory molecules, one or more pathogenic antigens and a specifically designed delivery system. Specifically said immunostimulatory molecules and pathogenic antigens are provided for in the form of mRNA molecules encoding such molecules and antigen; more in particular mRNA molecules encoding for CD40L, caTLR4 and/or CD70 in combination with one or more mRNA molecules encoding a bacterial, viral or fungal antigen. Specifically said, the delivery is a mixture of chemical compounds that allow protection and deposition of the vaccine and targeting to the antigen presenting cells in the nose. In particular, present invention is well suited for development of a rapid response vaccine in an outbreak setting.

34.WO/2023/028311GLYCATED CHITOSANS FOR TREATMENT OF VIRAL INFECTIONS

WO - 02.03.2023
Clasificación Internacional A61K 31/722 Nº de solicitud PCT/US2022/041680 Solicitante IMMUNOPHOTONICS, INC. Inventor/a LAM, Siu Kit
Methods of treating, preventing and/or inhibiting one or more of the symptoms of a respiratory viral infection in a subject by administering a therapeutically effective amount of a glycated chitosan (GC) polymer with characteristics as disclosed herein or a vaccine composition comprising such GC polymer in combination with one or more viral antigens are provided. Methods of reducing morbidity and/or mortality of a respiratory viral infection in a subject, methods of inducing an innate immune response in mucosa of a subject, methods of generating mucosal secretory IgA antibodies and/or neutralizing serum IgG antibodies in a subject, and methods of vaccinating a subject against a respiratory viral infection, wherein these methods comprise administering to the subject a therapeutically effective amount of a glycated chitosan (GC) polymer as disclosed herein or a vaccine composition comprising such GC polymer in combination with one or more viral antigens are further provided.

35.WO/2023/031428UTILIZATION OF MICRO-RNA FOR DOWNREGULATION OF CYTOTOXIC TRANSGENE EXPRESSION BY MODIFIED VACCINIA VIRUS ANKARA (MVA)
WO - 09.03.2023
Clasificación Internacional C12N 7/00 Nº de solicitud PCT/EP2022/074510 Solicitante BAVARIAN NORDIC A/S Inventor/a HAUSMANN, Jürgen
The invention relates to a recombinant Modified Vaccinia Virus Ankara (MVA) comprising a series of miRNA target sequences arranged in a miRblock that is linked to a transgene, wherein each miRNA target sequence corresponds to a miRNA in a eukaryotic MVA producer cell. The present invention also relates to medical uses of the recombinant MVA.

36.4138908IMPFSTOFF GEGEN SARS-COV-2 UND SEINE HERSTELLUNG
EP - 01.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21793685 Solicitante ZYDUS LIFESCIENCES LTD Inventor/a PATEL PANKAJ
The current invention provides a DNA construct comprising S gene or S1 gene region of 2019-nCoV spike-S protein. The DNA construct of the present invention comprises DNA plasmid vector carrying S gene or S1 gene region of 2019-nCoV spike-S protein. The vector may further comprise a gene encoding IgE signal peptide or a gene encoding t-PA signal peptide. The DNA construct according to the present invention is further used in the preparation of an immunogenic composition or a vaccine for treating or preventing corona virus or its related diseases.

37.4142857MIKRONADELANORDNUNG
EP - 08.03.2023
Clasificación Internacional A61M 37/00 Nº de solicitud 21797752 Solicitante TICONA LLC Inventor/a KIM YOUNG SHIN
A microneedle assembly that is capable of transdermal delivery of a drug compound, such as a vaccine, (e.g., vaccine) across a dermal barrier of a subject (e.g., human), and/or detecting the presence of an analyte in the subject is provided. The microneedle assembly comprises a plurality of microneedles arranged on a support that each contain a tip and base, one or both of which are formed from a polymer

composition that includes a liquid crystalline polymer. By selectively controlling the specific components of the polymer composition, as well as their relative concentration, the resulting microneedles may exhibit a high degree of physical alignment, which can help ensure better performance during use of the microneedle assembly.

38.WO/2023/027562VACCINE COMPOSITION FOR PREVENTION AGAINST COVID-19
WO - 02.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/KR2022/012889 Solicitante KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY Inventor/a LEE, Heung Kyu
The present invention relates to a vaccine composition comprising recombinant adenovirus as an active ingredient for prevention or treatment of coronavirus infection-19 (COVID-19). With respect to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is a severe infectious disease that has killed millions of people worldwide, the present invention is adapted to improve an immune body through the recombinant adenovirus against the coronavirus, and thus can be advantageously used as a prophylactic immune composition that fundamentally and effectively defends against SARS-CoV-2.

39.WO/2023/025031SARS-COV-2 VIRUS S PROTEIN NEUTRALIZING EPITOPE FOR USE IN VACCINE OR NEUTRALIZING ANTIBODY TESTING
WO - 02.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/CN2022/113307 Solicitante BEIJING ACROBIOSYSTEMS BIOTECHNOLOGY CO., LTD Inventor/a JIANG, Yinan
A SARS-CoV-2 virus S protein neutralizing epitope for use in a vaccine or neutralizing antibody testing, and a corresponding kit thereof.

40.4138902HERSTELLUNG VON BREIT REAKTIVEN CORONAVIRUS-IMPFSTOFFEN SOWIE ENTSPRECHENDE ENTWÜRFE UND VERWENDUNGEN
EP - 01.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21791682 Solicitante GREFFEX INC Inventor/a STAERZ UWE D
A vaccine for preventing β-CoV infection includes at least one viral vector containing a β-CoV DNA sequence which codes the S protein for the β-CoV. The β-CoV RNA sequence can be a SARS-2 β-CoV DNA sequence. The vaccine may further includes a packaging plasmid based on an adenovirus. The viral vector and packaging plasmid can be contained in a packaging cell and encapsidated in a capsid. A method of vaccinating a mammal subject against infection from at least one group of β-CoV includes separating a broad group of β-CoV into homology groups based on similarities in the β-CoV RNA sequences which code for their S proteins, identifying at least one consensus sequence for each homology group which has a sequence identity of greater than 60% to all other members of the homology group, and preparing a viral vector including at least a portion of the consensus sequence from at least one homology group.

41.4138899IMPFSTOFF GEGEN HUMANE PATHOGENE CORONAVIREN

EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21726555 Solicitante ACM BIOLABS PTE LTD Inventor/a NALLANI MADHAVAN
The present invention relates to a polymersome comprising a soluble encapsulated antigen, wherein the soluble encapsulated antigen is a soluble fragment of a Spike protein of a human-pathogenic coronavirus, as well as a combination of a population of such polymersomes, and a second population of polymersomes comprising an encapsulated adjuvant. The present invention also relates to related methods, such as methods of treatment, kits, compositions, such a vaccine, and medical uses, such as in the treatment of a human-pathogenic coronavirus infection.

42.4144753VERFAHREN ZUR HERSTELLUNG VON INFLUENZAVIRUS UNTER VERWENDUNG EINES EINWEGKULTURVERFAHRENSSYSTEMS UND TEST ZUR SCHNELLEN ÜBERPRÜFUNG VON BEDINGUNGEN FÜR DIE REINIGUNG VON INFLUENZAVIRUSANTIGEN
EP - 08.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud 21796985 Solicitante SK BIOSCIENCE CO LTD Inventor/a JUNG HWAN-UI
The present invention relates to an influenza virus production method using a disposable culture process system, and a test for quickly checking conditions for influenza virus antigen purification. According to the present invention, conditions for influenza surface antigen obtainment (purification) may be quickly and reliably checked according to the unique method of the present invention, even without using the single radial immunodiffusion technique which is conventionally used as a standard test method when producing influenza vaccines, and thus the production time for an influenza surface antigen subunit vaccine is notably reduced, thereby enabling quick response as a result of rapid vaccine development/manufacturing, even in a rapid novel influenza pandemic situation. In addition, according to the influenza virus production method of the present invention, culture media exchange may be carried out in an airtight system by using a continuous low-speed centrifuge using a disposable bag, and thus the possibility of contamination occurring during the virus production process may be greatly reduced.

43.WO/2023/024525ADENOVIRUS VECTOR VACCINE FOR PREVENTING ORIGINAL STRAIN OF SARS-COV-2 AND SARS-COV-2 BETA VARIANT
WO - 02.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/CN2022/085801 Solicitante GUANGZHOU N BIOMED LTD. Inventor/a CHEN, Ling
The present invention belongs to the technical field of viral immunology. Disclosed is an adenovirus vector vaccine for preventing the original strain of SARS-CoV-2 and the SARS-CoV-2 Beta variant. The S protein of the Beta variant and RBD gene of the original strain are linked by means of an efficient self-cleaving P2A, which can not only express an antigen protein for the S protein of the Beta variant, but can also express an antigen for the RBD protein of the original strain. After an organism is immunized, a neutralizing antibody against the SARS-CoV-2 Beta variant can be generated, and a neutralizing antibody against the original strain of SARS-CoV-2 can also be generated, thereby effectively protecting the organism from being infected with the SARS-CoV-2 Beta variant and the original strain of SARS-CoV-2.

44.WO/2023/026830METHOD FOR PRODUCING EXTRACELLULAR PARTICLES
WO - 02.03.2023
Clasificación Internacional C12N 5/10 Nº de solicitud PCT/JP2022/030152 Solicitante VAXOSOME LLC Inventor/a SAKUMA Sadatoshi
[Problem] To provide a method for producing extracellular particles usable for a vaccine for a swine infectious disease. [Solution] A method for producing extracellular particles that comprises: infecting swine cells, which can be infected with PRRS virus, with the virus at a moi (multiple of infection) concentration of 0.01-1.0 and, at the same time, adding interferon (INF) thereto; removing lysed cells by washing; and adding a culture solution to the unlysed cells remaining in the incubator, said unlysed cells containing a large amount of persistently virus-infected cells. After repeating the steps for washing and for adding the culture solution a preset number of times, extracellular particles are separated and purified from the remaining persistently virus-infected cells. Cells have individual differences (individuality) and, therefore, different sensitivities to interferon (IFN). Accordingly, not all cells become persistently infected even under the same experimental conditions. Experiment 2 in FIG. 2 shows an example in which the cells did not become persistently virus-infected cells even under the same experimental conditions. Therefore, it is necessary to analyze the proteins expressed by the cells after infection with the virus, and to select and clone the most promising persistently infected cells for vaccine production.

45.4140502ONKOLYTISCHES VIRUS IN KOMBINATION MIT EINEM IMMUNCHECKPOINT-INHIBITOR ZUR BEHANDLUNG VON TUMOREN
EP - 01.03.2023
Clasificación Internacional A61K 39/395 Nº de solicitud 21803294 Solicitante JOINT BIOSCIENCES SH LTD Inventor/a ZHOU GUOQING
The present application relates to a medicine for treating tumors. A novel oncolytic virus attenuated strain is provided by means of a site-directed mutation of a wild-type vinus matrix protein M of a vesicular stomatitis virus. On the basis of the oncolytic virus attenuated strain, an oncolytic virus vaccine is provided by inserting an exogenous gene into the attenuated strain. A medicine capable of treating multiple types of tumors is provided by the use of the oncolytic virus vaccine in combination with the immune checkpoint inhibitor.

46.4138892IMPFSTOFF ZUM SCHUTZ GEGEN MYCOPLASMA HYOPNEUMONIAE
EP - 01.03.2023
Clasificación Internacional A61K 39/02 Nº de solicitud 21718893 Solicitante INTERVET INT BV Inventor/a BIJLSMA JOHANNA JACOBA ELISABETH
A vaccine comprising nanoparticles in association with a Mycoplasma *hyopneumoniae* bacterin, wherein the nanoparticles comprise a cationic polysaccharide and an anionic phospholipid.

47.WO/2023/034932STABILIZATION OF ADJUVANTED VACCINE COMPOSITIONS AND THEIR USE
WO - 09.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/075859 Solicitante VAXCYTE, INC. Inventor/a GRAINGER, Christopher lain
The present disclosure provides stabilized vaccine compositions that resist the formation of unsuitable adjuvant flocculant or aggregates. These compositions

comprise an aluminium adjuvant, a non-aluminium phosphate salt, sodium chloride and a polypeptide-polysaccharide conjugate comprising at least two non-natural amino acids. The present disclosure further provides methods of using such compositions to induce immune responses against infections in subjects.

48.4143210PROPHYLAXE UND THERAPIE DES BETACORONAVIRUS
EP - 08.03.2023
Clasificación Internacional C07K 14/165 Nº de solicitud 21724230 Solicitante NYKODE THERAPEUTICS ASA Inventor/a FREDRIKSEN AGNETE BRUNSVIK
Disclosed is a vaccine comprising an immunologically effective amount of a polynucleotide comprising a nucleotide sequence encoding a targeting unit, a dimerization unit and an antigenic unit, wherein the antigenic unit comprises at least one betacoronavirus epitope. The vaccine is ideal for pandemic and epidemics as it can induce rapid, strong immune response with lower/fewer doses because the antigen is targeted to antigen presenting cells and the antigen is produced in the body.

49.WO/2023/023839DUAL-ACTION RECOMBINANT VESICULAR STOMATITIS VIRUS (RVSV)-BASED VACCINE (DAV) AGAINST COVID-19 AND INFLUENZA VIRUSES
WO - 02.03.2023
Clasificación Internacional C12N 7/01 Nº de solicitud PCT/CA2022/051028 Solicitante UNIVERSITY OF MANITOBA Inventor/a YAO, Xiaojian
Described herein is a replicative Vesicular stomatitis virus (rVSV) comprising: a first Filoviridae glycoprotein comprising one or more influenza virus matrix 2 ectodomain peptide inserted into the first Filoviridae glycoprotein; and a second Filoviridae glycoprotein comprising a SARS-CoV2 Spike protein peptide inserted into the second Filoviridae glycoprotein, or a first Filoviridae glycoprotein comprising one or more influenza virus matrix 2 ectodomain peptide inserted into the first Filoviridae glycoprotein and a non-functional but immunogenic SARS-CoV2 Spike protein. The Spike protein or Spike protein peptide can be derived from different CoV- 2 variants. The rVSV can be used as a Dual Action vaccine for vaccinating individuals simultaneously against both influenza virus and SARS CoV2 virus.

50.WO/2023/025864IMMUNOGENIC COMPOSITIONS AND THEIR USE
WO - 02.03.2023
Clasificación Internacional A61K 39/145 Nº de solicitud PCT/EP2022/073630 Solicitante OSIVAX Inventor/a LE VERT, Alexandre
The invention relates to immunogenic compositions and their use as a vaccine for the prevention of influenza disease in a human subject. More specifically, the invention relates to methods of use of an immunogenic composition as a vaccine or immunotherapy in the prevention or treatment of influenza disease in a human subject in need thereof, said immunogenic composition comprising: a fusion protein comprising (i) an influenza nucleoprotein antigen and, (ii) a carrier protein comprising a self-assembling polypeptide derived from C4bp oligomerization domain and a positively charged tail, wherein an amount of 180 µg, or more, of said fusion protein is administered to said human subject.

51.WO/2023/025287SARS-COV-2 IMMUNOGENIC SUBSTANCE AND PREPARATION METHOD THEREFOR AND APPLICATION THEREOF
WO - 02.03.2023

Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2022/115143 Solicitante JIANGSU RECBIO TECHNOLOGY CO., LTD. Inventor/a HU, Yingsong
Provided is a SARS-CoV-2 immunogenic substance, comprising a first antigen derived from an immune dominant virus strain and a second antigen derived from an epidemic dominant virus strain. The antigens each comprise a receptor binding region of an S protein or a part of the receptor binding region, the immune dominant virus strain is selected from at least one of a WH01 strain or a Beta strain of SARS-CoV-2, and the epidemic dominant virus strain is selected from at least one of a Delta strain or an Omicron strain of SARS-CoV-2. The SARS-CoV-2 immunogenic substance has high immunogenicity, and can exhibit a significantly improved immune effect on different virus strains.

52.WO/2023/025257BETA CORONAVIRUS HETEROMULTIMERIC ANTIGEN, AND PREPARATION METHOD THEREFOR AND USE THEREOF
WO - 02.03.2023
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2022/114892 Solicitante INSTITUTE OF MICROBIOLOGY, CHINESE ACADEMY OF SCIENCES Inventor/a GAO, Fu
The present invention relates to a beta coronavirus heteromultimeric antigen, and a preparation method therefor and the use thereof. The beta coronavirus heteromultimeric antigen has an amino acid sequence comprising a plurality of monomers from a beta coronavirus that are connected to each other, wherein each monomer from the beta coronavirus is a partial amino acid sequence or a whole amino acid sequence of a receptor binding region of a beta coronavirus spike protein; the number of the monomers is an integer greater than or equal to three; and the plurality of monomers of the beta coronavirus heteromultimeric antigen comprise monomers from two heterologous beta coronaviruses or monomers from at least three heterogenous beta coronaviruses. The beta coronavirus RBD multimer can be stably expressed, and can induce a strong immune response against various beta coronaviruses after mice are immunized, so that only one antigen protein can achieve the immune effect of a multivalent vaccine.

53.4139616CORONAVIRUS-IMPFSTOFF
EP - 01.03.2023
Clasificación Internacional F25D 3/12 Nº de solicitud 21718593 Solicitante PFIZER Inventor/a NAUTA MARJOH
The present disclosure relates to the fields of packaging, transportation, and storage of temperature-sensitive materials, such as biological and/or pharmaceutical products. Various aspects of such packaging, transportation, and storage are provided herein for ultra-low temperature materials useful for the treatment and/or prevention of disease. The present disclosure also provides packaging materials, methods of transportation, and methods of storage for maintaining biological and/or pharmaceutical materials at ultra-low temperatures in order to maintain the integrity of the materials. The present disclosure further relates to the field of RNA to prevent or treat coronavirus infection.

54.WO/2023/029604METHOD FOR PREPARING RICE-GRAIN-SHAPED ALUMINUM OXYHYDROXIDE NANO ADJUVANT HAVING GOOD SUSPENSION STABILITY
WO - 09.03.2023

Clasificación Internacional A61K 39/39 Nº de solicitud PCT/CN2022/094465 Solicitante DALIAN UNIVERSITY OF TECHNOLOGY Inventor/a SUN, Bingbing
A method for preparing a rice-grain-shaped aluminum oxyhydroxide nanomaterial having good suspension stability. According to the method, a nano-sized aluminum oxyhydroxide adjuvant is prepared by means of a hydrothermal method by using a mixed solution of an inorganic aluminum salt and urea as a reactant. The prepared aluminum oxyhydroxide adjuvant nanomaterial has uniform morphology, uniform dispersion, and good homogeneity and immunogenicity, has excellent suspension stability compared with an existing commercial aluminum oxyhydroxide adjuvant, and has good prospects in vaccine preparation and production and application.

55.20230060867STABILIZED 9 AND 10 SEGMENTED INFLUENZA VIRUSES AS A VACCINE PLATFORM AND METHODS OF MAKING AND USING SAME
US - 02.03.2023
Clasificación Internacional A61K 39/145 Nº de solicitud 17428921 Solicitante Duke University Inventor/a Nicholas S. HEATON
The present invention provides a modified influenza A virus (IAV) comprising, consisting of, or consisting essentially of at least one artificial gene segment comprising a duplicated packaging signal, the result of which is a modified IAV that is replication competent and avirulent, and when co-infected with a wild type virus leads to segment exchange and compromises the spread of both viruses as well as methods of making and using same and methods of using the IAVs in the treatment and prevention of influenza-related diseases.

56.4141022IMPFSTOFF GEGEN FELINEN CALICIVIRUS
EP - 01.03.2023
Clasificación Internacional C07K 14/08 Nº de solicitud 22171947 Solicitante INTERVET INT BV Inventor/a SHEHU ERALD
The present invention relates to a new feline capsid protein, to live attenuated feline calicivirus comprising that capsid protein, to live recombinant carrier viruses and live attenuated hybrid feline calicivirus comprising that capsid protein, to vaccines comprising such live attenuated feline caliciviruses, live recombinant carrier viruses and live attenuated hybrid feline calicivirus, and to methods for the preparation of such viruses.

57.4143835MEDIZINISCHE INJEKTOREN SOWIE SYSTEME UND VERFAHREN FÜR EINE INJEKTIONSVERWALTUNGSPLATTFORM
EP - 08.03.2023
Clasificación Internacional G16H 10/60 Nº de solicitud 21796025 Solicitante KOSKA FAMILY LTD Inventor/a CASE TIMOTHY SCOTT
Systems, methods and articles of manufacture provide for an injection management platform that allows the verification and management of injection event transactions involving injectors equipped with NFC or RFID chips utilizing a distributed and secure technology such as blockchain. An injection event transaction ledger allows for digital receipts of injection event transactions to be securely verified and updated. In accordance with some embodiments, injectors may comprise blow-fill-seal (BFS) injectors that are pre-filled with a single dose of a fluid agent comprising a vaccine or medicament, allowing for tracking of individual doses of the fluid agent via the injection event transaction ledger.

58.20230064428SYSTEMS AND METHODS FOR PRE-FILLED MULTI-LIQUID MEDICAL DELIVERY DEVICES
US - 02.03.2023
Clasificación Internacional A61J 1/20 Nº de solicitud 17982396 Solicitante Koska Family Limited Inventor/a Jeff Price
A pre-filled medical delivery system can have a blow-fill-seal (BFS) component and a connection assembly. The BFS component can have first and second chambers, and first and second sealed ports. Each chamber can have a respective liquid agent therein. Each sealed port can be in fluid communication with a respective one of the chambers. The connection assembly can be constructed for coupling to the BFS component. When coupled to the BFS component, the connection assembly can breach the seals of the first and second ports and provide fluid communication therebetween. The disclosed systems, when assembled, can combine the liquid agents from the first and second chambers of the BFS component and deliver the combination as a single dose of a therapeutic agent (e.g., vaccine, drug, medicament, etc.) to a patient.

59.20230065895POXVIRAL-BASED VACCINE AGAINST SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 AND METHODS USING THE SAME
US - 02.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17870070 Solicitante ACADEMIA SINICA Inventor/a Wen Chang
The present invention relates to a recombinant poxviral vector for use in vaccinating a subject against SARS-CoV-2. The present invention also provides vaccination regimens using the recombinant poxviral vector, which confers protective immunity against SARS-CoV-2.

60.WO/2023/027888PYRAZOLE-CONTAINING CBP/CATENIN ANTAGONISTS AND USES THEREOF
WO - 02.03.2023
Clasificación Internacional A61K 31/33 Nº de solicitud PCT/US2022/039730 Solicitante 3+2 PHARMA, LLC Inventor/a RUAN, Fuqiang
Provided are compounds of formula (Ia) and (Ib), and pharmaceutically acceptable salts thereof. Additionally provided are compositions and pharmaceutical compositions comprising the compounds, therapeutic methods using same for modulating (e.g., inhibiting) CREB binding protein (CBP)/β-catenin mediated signaling in treating a condition, disease or disorder (e.g., fibrosis, cancer, neurological conditions, metabolic disorders (e.g., diabetes, etc.), and skin conditions (dermatitis, psoriasis, scarring, alopecia, etc.) mediated by aberrant CBP/β-catenin signaling, and cosmetic methods for treating skin conditions (e.g., aging, etc.). Additionally provided are methods for enhancing vaccine efficacy using the compounds and compositions. Further provided are methods for efficiently synthesizing an antagonist of CBP/catenin signaling pathway, comprising use, in a penultimate, or last reaction step, of an intermediate 2-propynyl-compound to form a pyrazole derivative (e.g., via 3+2 cycloaddition).

61.20230072820VACCINE SITE ASSESSMENT SIMULATOR
US - 09.03.2023
Clasificación Internacional G16H 20/17 Nº de solicitud 17898002 Solicitante Rowan University Inventor/a Ali A. Houshmand

A computer product, including a logical environment system adapted to generate a logical network comprising a plurality of logically related, rule based junctions through which one or more entities traverse, a spatial environment system adapted to map one or more spatial constraints upon each logical relation between each of the one or more of the plurality of junction; and a rendering environment system adapted to move the one or more entities through the logical network subject to the corresponding spatial constraints and to visually display the results of the movement of the one or more entities via a graphical user interface.

62.4143209MODIFIZIERTE IMMUNOGENE PROTEINE
EP - 08.03.2023
Clasificación Internacional C07K 14/16 Nº de solicitud 21797527 Solicitante INT AIDS VACCINE INITIATIVE Inventor/a SCHIEF WILLIAM
The invention relates to germline-targeting designs, stabilization designs, and/or combinations thereof, of proteins designed with modified surfaces helpful for immunization regimens, other protein modifications and/or development of nanoparticles, methods of making and using the same, and to (a) germline-targeting priming or boosting/shepherding immunogens to initiate or guide maturation of VRC01-class responses (b) PCT64/PG9-germline-targeting designs (c) BG18-germline-targeting designs or boosting/shepherding immunogens to initiate or guide maturation of BG18-like responses, and/or (d) trimer stabilization and presentation in a membrane-bound format.

63.202321009951A NOVEL APPROACH FOR THE TREATMENT OF SARS - COV-2
IN - 03.03.2023
Clasificación Internacional A61K / Nº de solicitud 202321009951 Solicitante Rupali Rajesh Tasgaonkar Inventor/a Rupali Rajesh Tasgaonkar
ABSTRACTIntroductionCOVID-19, a new strain of coronavirus (CoV), was identified in Wuhan, China, in 2019. It then extended across the globe and was termed as pandemic in 2020. Though no vaccine or drug is available to combat this disease, it is necessary to look over it through alternative sciences. Material & MethodAvailable symptoms of covid 19 was thoroughly studied and reviewed through Ayurveda classics to understand the nature of the disease into Ayurevdic perspective. Other available sources from internet, pre prints, etc. The molecular Docking were done by Pyrx Software with Autodock. The Lipinski Rule of Five data generated from Swiss ADME software and Target prediction of selected phytoconstituents were done from Swiss target prediction.Result and DiscussionIn Ayurveda, it can be considered as Janapadaudhwans, vaat-kafaj sannipatik jwara, Aupsargik vyadhi and Dhatupaka awastha. In the molecular docking study the binding energy and inhibition of 6 Gingesulphonic acid from Zingiber Officinalis are greater than Hydroxychloroquine and quinine. Most of the selected phytoconstituents follow Lipinski rule of five. Target prediction of selected phytoconstituents were done on target of SARS-COV-2, humoral immunity and antiviral. Every selected phytoconstituents were work on minimum of the target.ConclusionThus, from the above results obtained from reviewing Ayurveda classics and from the results obtained after virtual screening of selected drugs we can conclude that Ginger can have appreciable results in combating Covid 19.

64.20230074637RECOMBINANT ANTIGEN AND METHOD OF MAKING THE SAME, ISOLATED POLYNUCLEOTIDE OF PORCINE REPRODUCTIVE AND

RESPIRATORY SYNDROME VIRUS (PRRSV) AND IMMUNOGENIC COMPOSITION INCLUDING THE SAME
US - 09.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17930168 Solicitante National Pingtung University of Science and Technology Inventor/a Hso-Chi Chaung
The present invention relates to a recombinant antigen and an isolated polynucleotide of porcine reproductive and respiratory syndrome virus (PRRSV), a composition including the same and a method of making the same. The recombinant antigen is a chimeric protein of PRRSV dual structural proteins and T-cell epitope. The polynucleotide encodes an amino acid sequence of the recombinant antigen. The recombinant protein expressed by the polynucleotide in an eukaryotic expression system can be beneficial for mass production and purification. An immunogenic composition including the recombinant antigen can promote pro-inflammatory M1-phenotype polarization of porcine alveolar macrophages (PAMs), reduce receptor CD163 expression that is mediated for viral entry and activate T helper (Th1) immune responses, thereby being applied to a vaccine composition against PRRSV.

65.20230062122MODIFIED ADENOVIRUSES FOR INFECTIOUS DISEASE VACCINE DEVELOPMENT
US - 02.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17943838 Solicitante Valo Therapeutics Oy Inventor/a Vincenzo Cerullo
The present invention relates to adenoviral vectors, wherein the viral capsid has been coated with polypeptides, which are capable of stimulating a peptide-specific immune response in a subject and uses thereof (e.g. infectious disease). Furthermore, the present invention relates to methods of treating diseases, e.g., cancer or an infectious disease, by adenoviral vectors which have been coated by polypeptides causing peptide-specific immune response. Also the present invention relates to a method of coating adenoviral vectors by specific peptides as well as to a method of identifying those peptides suitable for coating the capsid of an adenoviral vector.

66.4138900VERFAHREN ZUR BEHANDLUNG VON GEBÄRMUTTERHALSKREBS
EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21793447 Solicitante GENEXINE INC Inventor/a SUNG YOUNG CHUL
A treatment of cervical cancer caused by human papillomavirus (HPV) infection is disclosed. Pharmaceutical compositions comprising a human papillomavirus (HPV) vaccine and a checkpoint inhibitor agent for preventing or treating a human papillomavirus (HPV)-induced cancer are disclosed.

67.WO/2023/025187ANTIBODY SPECIFICALLY BINDING TO CD47, RECOMBINANT ONCOLYTIC VIRUS THEREOF AND USE THEREOF
WO - 02.03.2023
Clasificación Internacional C07K 16/30 Nº de solicitud PCT/CN2022/114475 Solicitante SHANGHAI SINOBAY BIOTECHNOLOGY CO., LTD. Inventor/a XU, Jianqing
Provided is an antibody capable of specifically binding to CD47 or an antigen binding fragment thereof. Also provided is a recombinant oncolytic virus, which is operably inserted into or comprises a gene coding sequence of an anti-CD47 antibody or a

CD47 ligand, wherein the anti-CD47 antibody comprises an Fc mutant having A330L/I332E mutations (ALIE antibody), i.e., the anti-CD47 antibody is αCD47-Fc(ALIE). Also provided are a preparation method for the recombinant oncolytic virus, a use of the recombinant oncolytic virus in preparation of anti-tumor drugs, and a vaccinia virus Tiantan strain capable of efficiently expressing an αCD47-Fc(ALIE) gene.

68.20230075527Compositions and Methods for Preventing and Treating Coronavirus Infection - Sars-Cov-2 Vaccines
US - 09.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17759803 Solicitante Janssen Pharmaceuticals, Inc Inventor/a Dan H. BAROUCH
The invention relates to immunogenic compositions and vaccines containing a coronavirus (e.g., Wuhan coronavirus (2019-nCoV; also referred to as SARS-CoV-2)) protein or a polynucleotide encoding a coronavirus (e.g., Wuhan coronavirus (2019-nCoV; SARS-CoV-2)) protein and uses thereof. The invention also provides methods of treating and/or preventing a coronavirus (e.g., Wuhan coronavirus (2019-nCoV; SARS-CoV-2)) infection by administering an immunogenic composition or vaccine to a subject (e.g., a human). The invention also provides methods of detecting and/or monitoring a protective anti-coronavirus (e.g., Wuhan coronavirus (2019-nCoV; SARS-CoV-2)) antibody response (e.g., anti-coronavirus antibody response, e.g., anti-2019-nCoV antibody response, e.g., anti-Spike antibody response, e.g., anti-Spike neutralizing antibody response). The present invention relates to isolated nucleic and/or recombinant nucleic acid encoding a coronavirus S protein, in particular a SARS-CoV-2 S protein, and to the coronavirus S proteins, as well as to the use of the nucleic acids and/or proteins thereof in vaccines.

69.20230070886CORONAVIRUS VACCINE FORMULATIONS
US - 09.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17795337 Solicitante Novavax, Inc. Inventor/a Gale SMITH
Disclosed herein are coronavirus Spike (S) proteins and nanoparticles comprising the same, which are suitable for use in vaccines. The nanoparticles present antigens from pathogens surrounded to and associated with a detergent core resulting in enhanced stability and good immunogenicity. Dosages, formulations, and methods for preparing the vaccines and nanoparticles are also disclosed.

70.4138901ZUSAMMENSETZUNGEN UND VERFAHREN ZUR AUSLÖSUNG VON IMMUNREAKTIONEN GEGEN KLASSE-I-FUSIONSPROTEINVIREN
EP - 01.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21805280 Solicitante UNIV VIRGINIA PATENT FOUNDATION Inventor/a ZEICHNER STEVEN L
Provided are modified bacteria and derivatives thereof that express nucleotide sequence encoding an antigen of a viral family selected from the group comprising Retroviridae (e.g., HIV, including a HIV Fusion Peptide antigen), Orthomyxoviridae, Paramyxoviridae, Arenaviridae, 5 Filoviridae, and/or Coronaviridae (e.g., an SARS-CoV, SARS-CoV-2 Fusion Peptide, and/or PEDV). In some embodiments, the bacterium has a reduced genome and induces an enhanced immune response against the viral antigen of interest when administered to a subject. In some embodiments, the

viral (e.g., SARS-CoV, 10 SARS-CoV-2, PEDV, and/or HIV) antigen is expressed on a surface of a bacterium. Also provided are method for producing antibodies against viral antigens, vaccine compositions, methods for vaccinating subjects, methods for treating viral infections in subjects, and expression vectors for expressing viral antigens including but not limited to coronavirus (e.g., SARS-CoV, SARS-CoV-2, and/or PEDV) antigens and/or HIV antigens on the surface of reduced 15 genome bacteria.

71.WO/2023/025147EPITOPE MODIFICATION
WO - 02.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2022/114250 Solicitante NANTONG YICHEN BIOPHARMA. CO. LTD. Inventor/a WANG, Feng
The present invention relates to epitope modification based on a chemical crosslinking group and the use thereof in changing the immunogenicity of an antigen and increasing animal immune response to a target epitope of an antigen. The present invention relates to the administration of a mutant antigen formed by means of incorporating a group or derivative thereof having a chemical crosslinking activity into a wild-type target epitope to an animal, wherein the antibody reaction in the animal is directed and enriched to the target epitope by the mutant antigen. Provided are a method for screening an antibody against a target epitope of an antigen and the antibody obtained thereby; further provided is the use of the method in the preparation of a vaccine for preventing and treating diseases.

72.4138903TRANSDERMALE WIRKSTOFFFREISETZUNGSVORRICHTUNGEN MIT CORONAVIRUSIMPFSTOFFBESCHICHTETEN MIKROVORSPRÜNGEN
EP - 01.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21791694 Solicitante EMERGEX USA CORP Inventor/a AMERI MAHMOUD
Disclosed herein are systems and methods for the transdermal or intracutaneous delivery of vaccines, and more particularly to the delivery of vaccines that produce coronavirus or other virus specific antibodies in the serum of vaccinated mammals, including to prevent COVID-19.

73.4138906VERFAHREN ZUR PROPHYLAXE UND BEHANDLUNG VON COVID UND COVID-19
EP - 01.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21793162 Solicitante TRAN LLOYD HUNG LOI Inventor/a TRAN LLOYD HUNG LOI
The present invention recognizes that there is a need for the prophylaxis or treatment of COVID and COVID-19. A first aspect of the present invention generally relates to methods of prophylaxis or treatment of COVID or COVID-19 using various pharmaceutical compositions. A second aspect of the present invention generally relates to methods of prophylaxis or treatment of COVID or COVID-19 using combinations of antimalarial drugs and antiviral drugs. A third aspect of the present invention generally relates to methods of prophylaxis or treatment of COVID or COVID-19 using nanoparticle formulations that include pharmaceutical compositions. A fourth aspect of the present invention generally relates to methods of prophylaxis or treatment of COVID or COVID- 19 using combinations of various pharmaceutical compositions. A fifth aspect of the present invention generally relates to methods of

prophylaxis or treatment of COVID or COVID-19 using a polio vaccine and pharmaceutical compositions.

74.4144752VIRUSÄHNLICHE PARTIKEL ZUR BEHANDLUNG ODER VORBEUGUNG EINER INFEKTION MIT EINEM CORONAVIRIDAE-VIRUS
EP - 08.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud 21306199 Solicitante UNIV SORBONNE Inventor/a KLATZMANN DAVID
The invention pertains to new viral-like particles (VLPs), pharmaceutical compositions comprising the same and methods of using the same to prevent or treat an infection by a Coronaviridae virus. Advantageously, these VLPs can be used as a vaccine to be orally or nasally administrated.

75.4139331SUPRASTRUKTUR MIT MODIFIZIERTEM INFLUENZA-HÄMAGGLUTININ MIT REDUZIERTER INTERAKTION MIT SIALINSÄURE
EP - 01.03.2023
Clasificación Internacional C07K 14/11 Nº de solicitud 21793274 Solicitante MEDICAGO INC Inventor/a LAVOIE PIERRE-OLIVIER
A suprastructure comprising a modified influenza hemagglutinin (HA) is provided. The modified HA may comprise one or more than one alteration that reduces non-cognate binding of the modified HA to sialic acid (SA) on the surface of a cell, while maintaining cognate interaction with the cell, such as a B cell. A composition comprising the suprastructure and modified HA and a pharmaceutically acceptable carrier is also described. A method of increasing an immunological response or inducing immunity in response to a vaccine comprising the suprastructure and modified HA is also provided.

76.WO/2023/031322VIRAL-LIKE PARTICLES FOR THE TREATMENT OR PREVENTION OF AN INFECTION BY A CORONAVIRIDAE VIRUS
WO - 09.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/EP2022/074302 Solicitante SORBONNE UNIVERSITE Inventor/a KLATZMANN, David
The invention pertains to new viral-like particles (VLPs), pharmaceutical compositions comprising the same and methods of using the same to prevent or treat an infection by a Coronaviridae virus. Advantageously, these VLPs can be used as a vaccine to be orally or nasally administrated.

77.WO/2023/033664CD44 GLYCOEPITOPES AND CHIMERIC VACCINE GLYCOCONJUGATES FOR CANCER THERAPY AND SYNTHESIS METHODS THEREOF
WO - 09.03.2023
Clasificación Internacional C07K 14/705 Nº de solicitud PCT/PT2022/050025 Solicitante I3S - INSTITUTO DE INVESTIGAÇÃO E INOVAÇÃO EM SAÚDE, ASSOCIAÇÃO Inventor/a RIBEIRO DE CASTRO FERREIRA, José Alexandre
The present invention refers to glycopeptides derived from the short CD44 isoforms lacking the amino acids encoded by exons 6-14, the said glycopeptides presenting at least one or multiple serine or threonine residues substituted with Tn (GalNAca-O-Ser/Thr) and/or sialyl-Tn (STn; Neu5Aca2-6GalNAca-O-Ser/Thr) antigens. The present invention further provides a method for synthesizing the herein disclosed glycopeptides, the said method comprising a one-pot glycosylation of synthetic short isoform CD44 peptides through combination with nucleotide sugars and glycosyl trans

f erases and subsequent purification of the CD44s-Tn glycopeptides by lectin affinity chromatography followed by Ti02 chromatography or liquid chromatography. In one embodiment, the present invention further comprises immunogenic chimeras derived from the said CD44-Tn and/or STn glycopeptides, which are linked, in a polyvalent form, to a carrier immunogenic protein, such as keyhole limpet hemocyanin (KLH) or cross-reacting material (CRM197). Methods for conj ugating the synthesized CD44s-Tn glycopeptides to the immunogenic protein carriers CRM197 and KLH, are described, generating the chimeric glycopeptides, herein termed CRM197 -CD44 s-Tn and KLH-CD44s-Tn, respectively. The present invention further regards the above-mentioned CD44-Tn/STn glycopeptides or compositions comprising said glycopeptides for use in the treatment of cancer and pre-neoplastic diseases, most preferably of neoplastic diseases expressing short CD44 isoforms, through generation of antibodies against cancer cells and treatment and prevention of cancer by vaccination. The glycopeptides, compositions, synthesis methods and uses of the present invention can be advantageously employed in the treatment of cancer, alone or in combination with immune checkpoint inhibitor therapy, chemotherapy, and radiotherapy.

78.4144369IMPFUNG IMMUNGESCHWÄCHTER PERSONEN
EP - 08.03.2023
Clasificación Internacional A61K 39/145 Nº de solicitud 22188224 Solicitante SEQIRUS UK LTD Inventor/a DEL GIUDICE GIUSEPPE
Disclosed herein are methods for enhancing immune responses to a vaccine in immunocompromised individuals, including those receiving a statin therapy. Related products are also provided.

79.4139358ZUSAMMENSETZUNGEN UND VERFAHREN ZUR IMPFUNG UND BEHANDLUNG VON INFEKTIONSKRANKHEITEN
EP - 01.03.2023
Clasificación Internacional C07K 16/28 Nº de solicitud 21723607 Solicitante JOUNCE THERAPEUTICS INC Inventor/a HARVEY CHRISTOPHER
Methods of treating infectious diseases, such as a viral diseases, and methods of enhancing the effectiveness of a vaccine against an infectious disease, such as a viral disease, with an ICOS agonist, such as an anti-ICOS agonist antibody, are provided.

80.20230060631DRY LIPOSOME ADJUVANT-CONTAINING VACCINES AND RELATED METHODS THEREOF
US - 02.03.2023
Clasificación Internacional A61K 9/70 Nº de solicitud 17819286 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a Zhengrong CUI
Described herein are dry powder compositions of liposomes, liposomal adjuvant or liposomal adjuvanted vaccines. Formulations containing a cryoprotectant can be converted to dry powders using, e.g., thin-film freeze-drying (TFFD). The composition may comprise a liposomal adjuvant, such as $AS01_B$ adjuvant, or also including an antigen, i.e., $AS01_B$-adjuvanted vaccine compositions.

81.WO/2023/034933METHODS AND SYSTEMS FOR ASSESSING ADAPTIVE IMMUNITY TO CORONAVIRUS
WO - 09.03.2023
Clasificación Internacional G01N 33/569 Nº de solicitud PCT/US2022/075861 Solicitante NONIGENEX, INC. Inventor/a LAPOINTE, Jerome P.

Provided are devices, systems, methods and kits for determining whether a subject is immune to an infection by a disease-causing pathogen by measuring neutralizing antibodies against the disease-causing pathogen in a biological sample from the subject. The devices, systems, methods, and kits described herein are useful for confirming whether a vaccine against the disease-causing pathogen has elicited enough neutralizing antibodies to prevent a later infection, or lessen severity of disease caused by, the disease-causing pathogen. Such devices, systems, methods, and kits are also useful for detecting an infection in the subject.

82.20230072079Nucleic acid vaccination using neo-epitope encoding constructs
US - 09.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17786631 Solicitante Evaxion Biotech A/S Inventor/a Birgitte Rønø
Products and methods for DNA vaccination targeting cancer. A method for anti-cancer vaccination using a plasmid-based vaccine comprising regions encoding neo-epitopes.

83.WO/2023/025815SHIGELLA VACCINE
WO - 02.03.2023
Clasificación Internacional A61K 39/112 Nº de solicitud PCT/EP2022/073501 Solicitante GLAXOSMITHKLINE BIOLOGICALS S.A. Inventor/a MICOLI, Francesca
The present invention relates to immunogenic compositions and their use in providing protection against illness caused by infection with Shigella. The immunogenic compositions comprise Shigella GMMA with particular doses of O-antigen.

84.20230070616System and Method for More Accurate Estimation of Vaccine Efficacy by Taking Into Account the Rate of Herd Immunity
US - 09.03.2023
Clasificación Internacional G16H 50/80 Nº de solicitud 17939921 Solicitante George R. Oliver Inventor/a George R. Oliver
A system comprises a data ingestion logic configured to receive pandemic data associated with susceptible, exposed, infected, recovered, and vaccinated people in a community; a data analysis logic configured to weigh, normalize, calculate, or use artificial intelligence to analyze the received pandemic data; and a dashboard configured to visually present values for a plurality of indicators; wherein the data analysis logic includes a herd immunity module determining values associated with an accurate estimation of herd immunity.

85.4142780VERFAHREN ZUR ERZEUGUNG VON IMPFSTOFFEN GEGEN NEUES CORONAVIRUS, BENANNT SARS-COV-2 MIT VARIABLEN EPITOPBIBLIOTHEKEN (VES) ALS IMMUNOGENE
EP - 08.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 21797677 Solicitante PRIMEX CLINICAL LABORATORIES Inventor/a MANUCHARYAN KAREN
Described herein is the application of Variable Epitope Libraries (VELs) as immunogens for the generation of vaccines against a novel coronavirus, named SARS-CoV-2. The VELs bearing combinatorial epitope libraries target antigenic variability of viruses such as SARS-CoV-2, and cancer, thus representing a true alternative to traditional vaccine platforms.

86.4141120REKOMBINANTES SPIKE-PROTEIN-FORMENDES TRIMER VON CORONAVIRUS-KRANKHEIT 2019 (COVID-19), VERFAHREN ZUR

MASSENPRODUKTION VON REKOMBINANTEM SPIKE-PROTEIN IN PFLANZEN UND VERFAHREN ZUR HERSTELLUNG EINER IMPFSTOFFZUSAMMENSETZUNG
EP - 01.03.2023
Clasificación Internacional C12N 15/82 Nº de solicitud 21791771 Solicitante POSTECH RES & BUSINESS DEV FOUND Inventor/a HWANG IN HWAN
The present invention relates to a recombinant spike protein of the COVID-19 virus forming a trimer and a method for mass-producing the recombinant spike protein, and more specifically to a method for designing a recombinant gene expressing a recombinant spike protein of the COVID-19 virus forming a trimer for the purposes of enhancing immunogenicity and effective antigen delivery, and a method for mass-producing the recombinant spike protein in plants.

87.WO/2023/034901TUMOR AVATAR VACCINE COMPOSITIONS AND USES THEREOF
WO - 09.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/075817 Solicitante THE BROAD INSTITUTE, INC. Inventor/a FRITSCH, Edward
Disclosed herein are methods of eliciting an anti-cancer immune response by administering tumor-associated antigens, cells containing tumor-associated antigens, and/or nucleic acids encoding tumor-associated antigens, inducing immunogenic cell death in the cells expressing or containing the tumor-associated antigens, and optionally generating hyperactivated dendritic cells. Expression of tumor-associated antigens in a separate anatomical site generates a tumor avatar, which mimics the antigenic, but not immunosuppressive, environment of the tumor, with the generation of hyperactivated dendritic cells enhancing antigen presentation to elicit a robust anti-tumor T cell and antibody response. Also provided are compositions and kits containing nucleic acids and other components for use in the methods provided herein.

88.WO/2023/034991MRNA VACCINE FORMULATIONS AND METHODS OF USING THE SAME
WO - 09.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/075944 Solicitante KANSAS STATE UNIVERSITY RESEARCH FOUNDATION Inventor/a MWANGI, Waithaka
The present disclosure provides stabilized compositions and methods relating to increasing the stability, expression activity, and amount of intact nucleic acid during storage. Such disclosure is particularly applicable to immunogenic compositions comprising mRNA and can be incorporated into compositions to reduce the severity, incidence and/or transmissability of SARS-CoV-2.

89.20230065320NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST PANCREATIC CANCER AND OTHER CANCERS
US - 02.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17937165 Solicitante IMMATICS BIOTECHNOLOGIES GMBH Inventor/a Toni WEINSCHENK
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-

associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

90.4143208POLYEPITOPE ENTHALTENDE IMPFSTOFFZUSAMMENSETZUNG GEGEN HUMANES CYTOMEGALOVIRUS
EP - 08.03.2023
Clasificación Internacional C07K 14/045 Nº de solicitud 21796930 Solicitante COUNCIL QUEENSLAND INST MEDICAL RES Inventor/a KHANA RAJIV
Disclosed is a human herpesvirus immunotherapy. More particularly, disclosed is acomposition that includes one or more recombinant proteins that include a pluralityof epitopes derived from multiple human cytomegalovirus antigens, a CMV envelope5glycoprotein, and a TLR agonist.

91.4138854VERKAPPUNGSVERBINDUNGEN, ZUSAMMENSETZUNGEN UND VERFAHREN ZUR VERWENDUNG DAVON
EP - 01.03.2023
Clasificación Internacional A61K 31/7088 Nº de solicitud 21792935 Solicitante GRITSTONE BIO INC Inventor/a JOOSS KARIN
The present disclosure includes, among other things, non-natural nucleotides useful as 5' caps for RNA nucleotides. The present disclosure also includes, among other things, compositions and methods using delivery and vaccine RNA nucleotide compositions that include non-natural nucleotides as 5' caps.

92.WO/2023/031205METHODS FOR ISOLATION OF LIPID-DISC COMPOSITIONS AND USES THEREOF
WO - 09.03.2023
Clasificación Internacional C07K 14/245 Nº de solicitud PCT/EP2022/074095 Solicitante VIB VZW Inventor/a REMAUT, Han
The invention relates to the field of bacterial membrane protein structures. More specifically, the invention relates to lipid nanodiscs compartmentalized by SlyB protein oligomers isolated from the outer membrane of Gram-negative bacteria. More specifically, the invention provides for a SlyB nanodisc structure wherein the SlyB-oligomer forms the membrane scaffold protein belt, which is surrounded by outer saccharolipid moieties anchored to the SlyB proteins, and which encloses a lipid bilayer nanodomain containing one or more phospholipid layers, wherein macromolecules such as (outer) membrane protein molecules may be captured and stabilized. More specifically, methods to produce and isolate chemically defined stable SlyB nanodisc particles are disclosed herein. Finally, the invention relates to the use of said SlyB nanodiscs as a self-adjuvanting vehicle, as part of an immunogenic composition, and provides for novel means for use in eliciting an immune response against macromolecules enclosed in said SlyB nanodiscs, or for use in a vaccine composition.

93.2023200517Consensus prostate antigens nucleic acid molecule encoding the same and vaccine and uses comprising the same
AU - 02.03.2023

Clasificación Internacional C07K 14/00 Nº de solicitud 2023200517 Solicitante Inovio Pharmaceuticals, Inc. Inventor/a Ferraro, Bernadette

94.4143834MEDIZINISCHES VERWALTUNGSSYSTEM UND VERFAHREN DAFÜR
EP - 08.03.2023
Clasificación Internacional G16H 10/60 Nº de solicitud 21722872 Solicitante HEALTHBEACON PLC Inventor/a JOYCE JIM
The present application relates to a medical management system (100) and method for managing and tracking medical and/or clinical events associated with a patient such as vaccine administration, medicament administration, drug trial, and the like. The medical management system (100) comprises a pathogen care management platform (110), which is communicatively coupled to at least one electronic device (150 1-n) and at least one pathogen care device (120 1-n). The electronic device (150 1-n) is configured to identify the patient prior to a medical and/or clinical event, while the pathogen care device (120 1-n) is configured to detect a deposit of a pathogen care item associated with the medical event. The PCM platform (110) is configured to receive the information generated by at least one electronic device (150 1-n) and at least one pathogen care device (120 1-n) and accordingly update a digital health data record of the user.

95.202111036849RECOMBINANT CONSTRUCT, IMMUNOGENIC COMPOSITION AGAINST DENGUE VIRUS AND IMPLEMENTATION THEREOF
IN - 03.03.2023
Clasificación Internacional A61K / Nº de solicitud 202111036849 Solicitante TRANSLATIONAL HEALTH SCIENCE AND TECHNOLOGY INSTITUTE (THSTI) Inventor/a DAS, Supratik
The present disclosure provides recombinant immunogenic compositions against Dengue serotypes. In particular, the present disclosure discloses the recombinant construct comprising a nucleic acid fragment encoding a dengue envelope protein(E) having an amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 22, SEQ ID NO: 24, SEQ ID NO: 26, SEQ ID NO: 28, SEQ ID NO: 34, SEQ ID NO: 36, SEQ ID NO: 54, SEQ ID NO: 56, SEQ ID NO: 58 or SEQ ID NO: 60. The disclosure also provides a two-step purification method to obtain soluble, cleaved, well-ordered, native-like E dimers with high purity and more than 99% homogeneity. Also, efficacious and safe subunit vaccine immunogens (immunogenic composition) comprising the E dimers are disclosed, which can elicit high immunization titers against dengue virus and other flaviviruses in a subject.

96.4142828MIKRONADELANORDNUNG
EP - 08.03.2023
Clasificación Internacional A61M 5/158 Nº de solicitud 21796676 Solicitante TICONA LLC Inventor/a KIM YOUNG SHIN
A microneedle assembly that is capable of delivering a drug compound (e.g., vaccine) and/or detecting the presence of an analyte is provided. The assembly comprises at least one microneedle extending outwardly from a support. The microneedle includes a polymer composition containing a thermoplastic polymer having a melting temperature of about 250°C or more. The polymer composition exhibits a melt viscosity of about 100 Pa-s or less and a tensile elongation of about 5% or less.

97.4143150VIRUSBEHANDLUNGSVERFAHREN UND ZUGEHÖRIGE PHARMAZEUTISCHE ZUSAMMENSETZUNGEN, IMPFSTOFFZUSAMMENSETZUNGEN, DESINFEKTIONSZUSAMMENSETZUNGEN UND WIRKSTOFFENTDECKUNGSVERFAHREN
EP - 08.03.2023
Clasificación Internacional C04B 103/67 Nº de solicitud 21782292 Solicitante CASHMAN DANIEL PATRICK Inventor/a CASHMAN DANIEL PATRICK
Pharmaceutical compositions comprising at least one calcium chelating agent such as disodium ethylenediamine tetraacetate (Na2EDTA) as an active pharmaceutical ingredient, are described that are useful for treating an infection by single stranded RNA virus, such as SARS-COV-2, are described. Development of the compositions was assisted by using a novel dmg discovery method which utilizes the characterization of a common molecular mechanism in a cohort of an unforeseen clinical co-morbidly patterns identified as outliers. Reverse engineering of the outlier cohort yielded unrecognized calcium requirements for infection by SARS-CoV-2 provided a common molecular mechanism in the outlier group that enabled formulation of the new pharmaceutical compositions.

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