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 candidatos vacunales en desarrollo contra la COVID-19 a nivel mundial.
- Noticias más recientes en la Web sobre vacunas.
- Artículos científicos más recientes de Medline sobre vacunas.
- Patentes más recientes en Patentscope sobre vacunas.

IFV INSTITUTO FINLAY DE VACUNAS

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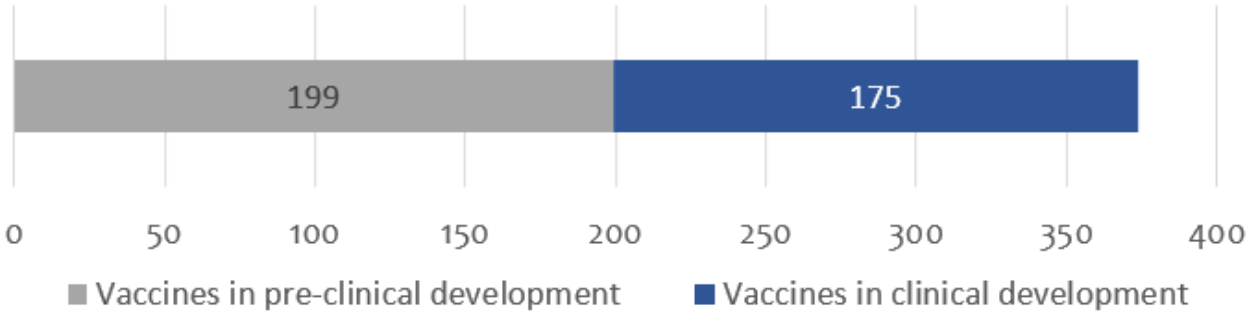
CUBA

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

Última actualización por la OMS: 13 de diciembre de 2022.

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

175 Vacunas en evaluación clínica y 199 en evaluación preclínica



Candidatos vacunales en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	56	32%
VVnr	Viral Vector (non-replicating)	23	13%
DNA	DNA	16	9%
IV	Inactivated Virus	22	13%
RNA	RNA	41	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%
		175	

Candidatos vacunales por vía de administración

Route of administration			
Oral		**5**	**3%**
Injectable		**158**	**90%**
SC	Sub cutaneous	5	3%
ID	Intra dermal	9	5%
IM	Intra muscular	144	82%
IN	Intra nasal	14	8%
AE	Aerosol	1	1%
IH	Inhaled	2	1%
TBD / No Data (ND)		**12**	**7%**

Número de dosis de los candidatos vacunales en evaluación clínica

Number of doses & schedule	Candidate vaccines (no. and %)	
1 dose	**42**	**24%**
Day 0	42	
2 doses	**98**	**56%**
Day 0 + 14	8	
Day 0 + 21	35	
Day 0 + 28	55	
3 doses	**2**	**1%**
Day 0 + 28 + 56	2	
TBD / No Data (ND)	**33**	**19%**

Candidatos vacunales mucosales en evaluación clínica

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Vía de administración	Fase
University of Oxford/Reino Unido	Vector viral no replicativo	Intranasal	1
CanSino Biological Inc./Beijing Institute of Biotechnology/China	Vector viral no replicativo	Inhalación	4
Vaxart/Estados Unidos	Vector viral no replicativo	Oral	2
Univ. Hong Kong, Xiamen Univ./Beiging Wantai Biol. Pharm./China	Vector viral replicativo	Intranasal	3
Symvivo/Canadá	ADN	Oral	1
ImmunityBio, Inc./Estados Unidos	Vector viral no replicativo	Oral y SL	1/2
Codagenix/Serum Institute of India	Virus vivo atenuado	Intranasal	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	Intranasal	1/2
Razi Vaccine and Serum Research Institute/India	Subunidad proteica	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	1
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	Subunidad proteica	1

Candidatos vacunales 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	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	ARN
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN
Medigen Vaccine Biol./Dynavax/NIAID/Taiwán/EE.UU	Subunidad proteica

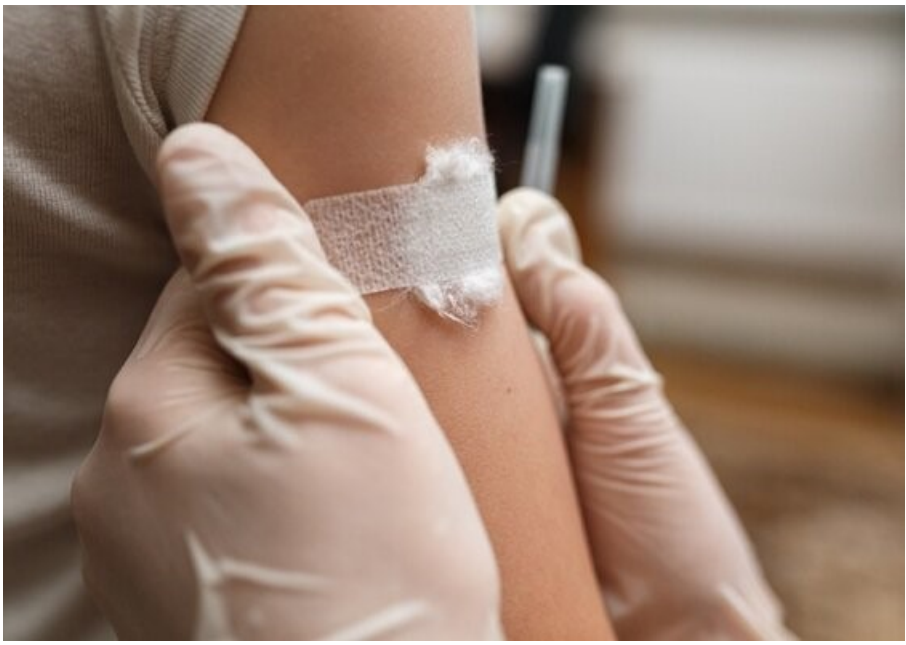
Candidatos vacunales mucosales en evaluación clínica fase 3

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
Airlangga University/Indonesia	Virus Inactivado
PT Bio Farma/Indonesia	Subunidad proteica
AIM Vaccine and Liverna Therapeutics/China	ARN
Cansino Biologics Inc.	Vector viral no replicativo
Moderna TX	ARN
China National Biotec Group Company Limited	Virus inactivado

Noticias en la Web

National study suggests new vaccine is needed to prevent childhood pneumonia

Dec 1. Vaccine-resistant pneumonia has increased since a vaccine targeting 13 serotypes of the Streptococcus pneumoniae bacteria was introduced into the Australian routine childhood immunization program.



The study looked into the effectiveness of the vaccine in preventing severe forms of pneumonia. Credit: Shutterstock

The current vaccine against bacterial pneumonia is not providing optimal protection to Australian children, a national study by medical researchers from UNSW Sydney and multiple leading research institutions has found.

Using three years of prospectively collected data from all children hospitalized with pneumonia across 11 tertiary pediatric hospitals across Australia between 2015 and 2018, the researchers found that the majority of 779 children admitted to hospitals with pneumonia had been fully vaccinated against Streptococcus pneumoniae, the most common bacteria associated with severe cases of pneumonia.

"Our study looked into the effectiveness of the vaccine in preventing severe forms of pneumonia," says Dr. Nusrat Homaira with UNSW's School of Pediatrics and Child Health.

"The vaccine currently available in Australia should provide protection against 13 serotypes—or 13 different variations—of the Streptococcus pneumoniae bacteria. But our study shows that the vaccine is not providing optimal protection against invasive pneumococcal pneumonia or severe pneumonia caused specifically by serotypes 3 and 19A, both of which should be covered by the vaccine."

Dr. Homaira says there are two main reasons why the current vaccine—called 13vPCV—isn't effective in preventing children from developing serious pneumonia illnesses.

The first is that the vaccine is less immunogenic—meaning it doesn't produce much of an immune response—against serotype 3, which is due to the biochemical property of the capsule of this serotype.

The second possible reason why the 13vPCV vaccine may not be as effective as intended is because the timeframe it is administered in doesn't cause lasting immunity.

"The dose schedule in Australia in the years that we looked at was to administer to children in three stages, at two months, four months and six months of age," Dr. Homaira says.

"But in many countries the dosing was at four months, six months and 12 months. Having the final dose at 12 months provides more lasting protection than having the last dose at six months, which may not provide coverage beyond one year of age."

Dr. Homaira says since 2018, Australia has since moved to the four, six and 12-month scheduling of doses, "so it will be important for us to see if that has an effect on the numbers of children succumbing to invasive pneumococcal pneumonia."

New formulations of the pneumococcal vaccine are becoming available which appear to promote better immune responses to serotype 3.

Looking ahead, Dr. Homaira says, "We need enhanced surveillance which will allow for routine molecular testing of lung fluid to monitor pneumococcal pneumonia and newer formulation of vaccines that will render better protection."

The research appeared recently in *Vaccine*.

Fuente: Medical Xpress. Disponible en https://bit.ly/3FY9jvr

Dos ensayos con Soberana 01 y Soberana Plus demostraron buenos resultados en Cienfuegos

1 dic. A propósito de la cercanía del Día de la Medicina Latinoamericana, el Instituto Finlay de Vacunas (IFV) reconoce, por estos días, a todas las instituciones y el personal humano que propició la realización exitosa, en Cienfuegos, de los ensayos clínicos Soberana Centro y Soberana Plus Pediatría, en un taller de cierre de resultados que tiene lugar en la central provincia.

Foto: perlavisión

La doctora en Ciencias Dagmar García Rivera, directora de Investigaciones del IFV, declaró a Granma que, en el caso de Soberana Centro, fue un ensayo con el candidato vacunal Soberana 01, que comenzó el 26 de julio de 2021 en los municipios de Palmira y Cruces, y que tuvo como objetivo demostrar la inmunogenicidad de Soberana 01 comparada con Soberana 02.

«En el momento que se hizo el ensayo ya Soberana 02 tenía autorizo de uso de emergencia, por lo que nos propusimos demostrar que la respuesta inmune que inducía Soberana 01 era similar a Soberna 02; en términos estadísticos, que era no inferior a Soberana 02», explicó la científica.

Los resultados del ensayo –destacó– demostraron que Soberana 01 no es inferior a Soberana 02 en términos de respuesta inmune, y eso es un elemento importante al cierre de todas las evidencias, tanto de seguridad como de inmunogenicidad, que se necesitan para el autorizo de Soberana 01, y de su potencial uso en la prevención de la COVID-19 o como dosis de refuerzo.

Precisó que ese ensayo transcurrió en el momento más crítico de la ola de Delta en Cienfuegos.

Soberana Plus Pediatría fue un ensayo en niños convalecientes de la pandemia, que comenzó el año pasado en dos hospitales pediátricos: el Juan Manuel Márquez, de La Habana, y el Paquito González Cueto, de Cienfuegos; y que ahora se encuentra en fase de cierre de resultados con el equipo de investigación en el territorio central.

«Buscaba demostrar en niños lo mismo que se había demostrado en adultos: que una sola dosis de refuerzo en los niños que ya habían padecido la COVID-19 era suficiente para reforzar su inmunidad, sin necesidad de aplicar el esquema heterólogo de tres dosis», detalló.

Significó García Rivera que los resultados satisfactorios de este estudio tributaron al autorizo de Soberana Plus en las edades pediátricas convalecientes, entre dos y 18 años, por lo cual estos pudieron vacunarse con dosis de refuerzo.

Fuente: Granma. Disponible en https://bit.ly/3FDxii6

BWV-201 Vaccine

Dec 2. BWV-201 Vaccine Description

Blue Water Vaccines (BWV) BWV-201 is a nasal vaccine candidate designed to provide protection against forms of non-invasive pneumococcal disease, including Acute Otitis Media (AOM) and Pneumonia Without Bacteremia. By administering the modified live bacteria intranasally, BWV-201 is designed to elicit a strong mucosal immune response, regardless of the capsular polysaccharide serotype.

Based on experiments at St. Jude Children's Research Hospital, data suggests that BWV-201 may also protect against pneumococcal pneumonia by limiting the ability of Streptococcus pneumoniae to infect the lungs. BWV's new development plan aims to assess the efficacy of BWV-201 in protecting individuals against non-invasive pneumococcal pneumonia.

Joseph Hernandez, Chairman and CEO of Blue Water Vaccines stated in a press release on December 1, 2022, "Although our primary targets of this vaccine remain AOM and pneumococcal pneumonia, data from the original publication for this vaccine suggests that BWV-201 may also protect against invasive pneumococcal disease. We look forward to sharing our strategy with all colleagues in attendance and further advancing this program into clinical trials."

Blue Water Vaccines is a biopharmaceutical company focused on developing transformational vaccines to address significant health challenges globally. BWV has licensed a novel norovirus S&P nanoparticle versatile virus-like particle vaccine platform to develop vaccines for multiple infectious diseases, including norovirus/rotavirus and malaria, among others. BWV is located at 201 E. Fifth Street, Cincinnati, OH, 45202.

BWV-201 Indication

While Streptococcus pneumoniae is commonly found in the nose and throat of healthy individuals, overgrowth and spread of the bacteria can result in pneumococcal disease. Non-invasive forms of pneumococcal disease include AOM, sinusitis, and pneumococcal pneumonia, while invasive forms include bacteremia, sepsis, and pneumococcal meningitis.

Pneumococci are common inhabitants of the respiratory tract. The bacteria may be isolated from the nasopharynx of 5–90% of healthy persons, says the U.S. CDC.

The American Academy of Pediatrics reports over 5 million cases of AOM in the U.S. annually, resulting in approximately 30 million medical care visits and over 10 million antibiotic prescriptions. In addition to antibiotic resistance, an estimated $4.3 billion USD is spent on AOM treatment each year in the U.S., indicating a severe unmet need for vaccine intervention.

Fuente: Precision Vaccinations. Disponible en https://bit.ly/3W6Yj4C

La vacuna argentina anti COVID, en fase final: cuándo va a estar lista y cuál será su efectividad

2 dic. Con el alza en el número de casos positivos de COVID en la Argentina durante las últimas semanas, volvieron las colas en los pocos vacunatorios que siguen abiertos en la Ciudad de Buenos Aires y la Provincia de la mano de un renovado interés por completar los esquemas de con los refuerzos faltantes acorde al rango de edad. En ese contexto, la Argentina sigue adelante con su propio desarrollo de una vacuna nacional de bajo precio, alta efectividad y capacidad de adaptarse velozmente a nuevas variantes.

La vacuna argentina ARVAC Cecilia Grierson (ARVAC CG) consiste en un desarrollo público-privado del que forman parte el CONICET, la Universidad Nacional de San Martín (UNSAM), y el Laboratorio Cassará, con apoyo del Ministerio de Ciencia, Tecnología e Innovación. En octubre pasado se presentaron los datos provisorios en pleno desarrollo de la fase 1 de testeos y los resultados en materia de seguridad y de producción de anticuerpos neutralizantes son alentadores.

"Lo que se mide en la Fase 1 es el nivel de seguridad e inmunogenicidad de la vacuna en un conjunto de 80 personas voluntarias sanas, entre los 18 y los 60 años, que ya contaban con un esquema de dos dosis de otras vacunas y el resultado mostró que una dosis de refuerzo de ARVAC incrementaba más de 30 veces la cantidad de anticuerpos neutralizantes contra las variantes ancestral, gamma y lo que es más importante en este contexto epidemiológico contra Omicron", explica a El Cronista la investigadora a cargo del proyecto, Juliana Cassataro.

"Estos ensayos dan una medida de la capacidad de los anticuerpos de neutralizar la infección viral ensayada en el laboratorio y eso es una medida muy confiable de la inmunogenicidad de la vacuna, es decir te pronostica si la vacuna va a andar bien o no", añade la científica que se desempeña en el Instituto de Investigaciones Biotecnológicas Dr. Rodolfo Ugalde (IIB) dependiente de la Universidad de San Martín (UNSAM) y el CONICET.

De allí que desde el Ministerio de Ciencia y Tecnología catalogan la vacuna argentina como "segura y muy inmunogénica". Al aplicarse a las personas voluntarias de la Fase 1 dos dosis con un mes de diferencia para evaluar su nivel de seguridad, no se monitoreó todavía la duración de la inmunidad frente al coronavirus Sars-Cov-2. Eso recién se estudiará durante la fase 2 y 3 cuando el universo de personas se amplíe a 2 mil voluntarios y se incluya a los adultos mayores de más de 60 años.

Ingeniería y know how local

Acorde a los cálculos del Gobierno, la Argentina podría contar con una vacuna contra la COVID a mediados

de 2023 con la particularidad de ser la única en desarrollo que incorporó la variante brasileña Gamma. Se tratará, además, de una versión que se comercializará en pesos en la Argentina, un dato no menor si se considera que las vacunas elaboradas en el extranjero de tipo monovalente hoy no bajan de los u$s 10 y aquellas que protegen contra más de una variante se están comercializando en Estados Unidos entre los u$s 26 (Moderna) y u$s 30 (Pfizer) la dosis.

Desde los Laboratorios Cassará afirman que todavía no se puede poner un precio porque está en estudio su productividad pero que sin dudas el costo estará por debajo de ese precio para la variante bivalente -contra la variable Gamma y Omicron- del virus-, lo que permitirá no solo su desarrollo nacional y el ahorro de la inversión en dólares sino además contar con stock de rápida disponibilidad.

"Para nosotros es un sueño porque se pudo conectar diversas capacidades que existen en nuestro país, pero estaban desconectadas, como es la investigación clínica, el desarrollo científico y los laboratorios farmacéuticos. No solo eso: en tiempos en los que se habla tanto de la falta de dólares, sería una forma de contribuir también a reducir la inversión en dólares que significó la compra de vacunas en el exterior y hasta de generar divisas", destaca Cassataro.

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Acorde a la información divulgada desde Ciencia, Tecnología e Innovación, la vacuna argentina ARVAC Cecilia Grierson se basa en la tecnología segura de proteína recombinante que se utiliza desde hace décadas para fabricar la vacuna contra Hepatitis B aplicable en niños recién nacidos, o contra el Virus del Papiloma humano (VPH) que se destina a adolescentes. En este caso, no obstante, solo luego que se completen las Fases 2 y 3 podrán iniciarse los testeos pediátricos.

La particularidad de contar también con una vacuna hecha en la Argentina es que se puede incorporar nuevas variantes de la COVID en un plazo de no más de cuatro meses a nivel del laboratorio. De esta manera, se podría adaptar su principio activo para hacer frente a nuevas olas con variantes que escapen a la respuesta inmunológica de las vacunas vigentes.

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Cuándo estará lista la vacuna argentina

"Acorde a nuestro plan de producción, en enero de 2023 estaremos entregando el dossier con toda la información técnicas y los análisis clínicos en animales y humanos de la Fase 1 para que las autoridades de la ANMAT puedan avanzar en su estudio. Y en abril tendremos listos los resultados de la Fase 2 y 3 por lo que en mayo podría estar listo todo según el plan de trabajo", explica a El Cronista Jorge Cassará, a cargo del laboratorio responsable de la industrialización de la vacuna.

Cassará presenta los laboratorios que llevan dos generaciones en su familia como "una pyme de perfil tecnológico" que hace tiempo se encuentra vinculada al sistema científico argentino y desde 1990 al campo de la biotecnología. De hecho, durante el pico de la pandemia, se ocupó de desarrollar los primeros test de diagnósticos simplificado en el país. Se utilizaron hasta 4 millones de ellos.

A fines de 2020, la Agencia de Promoción Científica y Tecnológica, bajo la órbita del ministerio que hoy comanda Filmus, los puso en contacto con la UNSAM. Allí, el equipo que lidera Cassataro trabajaba en un modelo de proteínas recombinantes similar a la tecnología que Cassará utiliza para sus vacunas. Fue el punto inicial de una sinergia que se tradujo en la primera vacuna de fabricación nacional, ARVAC Cecilia Grierson.

El financiamiento del desarrollo de la vacuna y su testeo en la Fase 1 estuvo a cargo de Cassará y rondó los u$s 3,5 millones. Se trabajó a gran velocidad al punto que a fines de ese año ya estaban los primeros estudios en animales y para abril de 2022 se autorizaron los estudios de Fase 1 en personas que se monitorearán durante un año pese a que ya se avanzó a la siguiente etapa con los resultados ya en mano.

La segunda y tercera fases correrán por cuenta del Estado y podría triplicar el monto de inversión original en dólares. Luego cobrará regalías por cada vacuna vendida.

"Es un orgullo para la ciencia argentina disponer de una vacuna nacional diseñada por nuestras científicas y científicos y producida por una empresa privada, lo que significa llevar la investigación y el desarrollo al servicio de las personas", detalló el ministro Daniel Filmus. Desde el Gobierno se ilusionan también con exportar estas vacunas a diversos países con quienes ya se dialoga al respecto y se trabaja a diversas velocidades.

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México es el país con el que se avanzó más en el trabajo en conjunto al punto que se hará un testeo en paralelo de la Fase 2 y 3 que no formará parte del estudio en Argentina, pero cuyos datos servirán como contraste. En el futuro, se podrían estudiar desarrollos en conjunto de la vacuna, ya sea para el envasado o para la producción del antígeno puesto que el país posee capacidad instalado y know how para hacerlo.

También con Chile se avanza en esta dirección desde la época de Sebastián Piñera y luego del recambio presidencial y la llegada de Gabriel Boric a La Moneda se busca entablar nuevamente las conversaciones. En un segundo nivel aparecen Colombia -con un proyecto propio en marcha ya y a la espera de tener esos resultados para avanzar con Cassará- y Brasil, con una tecnología diferente.

Por último, a partir de las gestiones de Cancillería y una serie de misiones a Arabia Saudita, se inició un contacto con una empresa privada que operaría como nexo con el Reino. De concretarse, sería una gran oportunidad para acceder a toda la región a través de una eventual alianza ya que Riad tiene en carpeta la construcción de una planta de producción propia de vacunas desde la pandemia.

Fuente: Cronista. Disponible en https://bit.ly/3FZvykP

Subvariantes, vacunas, barbijos y testeos: todo lo que hay que saber para enfrentar la COVID-19 hoy

4 dic. Luego de casi tres años desde que inició la pandemia, el coronavirus vuelve a ser protagonista en las vidas de los argentinos. Esta semana el Ministerio de Salud informó 3323 nuevos casos activos en el país. Los números alertaron a los especialistas: se trata de un 51% más que el período anterior.

Ante este panorama, la preocupación en la población volvió a aparecer y la demanda en los centros de vacunación se incrementó notablemente. “La situación es para encender una alarma, por ahora solo para

que la población esté alerta y no deje de cuidarse. La inmunidad es posible, por eso es que hay que seguir las recomendaciones del Ministerio y darse todas las dosis de vacuna", aseveró en diálogo con este medio el doctor Edgardo Bottaro, médico infectólogo y coordinador médico de Helios Salud.

En la misma línea, el médico infectólogo Pablo Bonvehí (MN 62648), sostuvo que "hay que tener precaución, observar muy de cerca lo que sucede, si los casos impactan en la hospitalización y en la mortalidad. Cabe hacer una vigilancia estrecha sobre todo en los casos graves. Muy probablemente tenga que ver con los sublinajes de la variante Ómicron. Se ha demostrado que las dosis de refuerzo protegen, por eso es importante que quienes no las hayan recibido se las apliquen en cuanto puedan".

El pasado jueves, la ministra de Salud, Carla Vizzotti, afirmó que los casos de coronavirus vienen creciendo en los últimas tres semanas en el país aunque "no es predominante y no se está traduciendo en hospitalizaciones y muertes", pero exhortó a la población a que concurra a aplicarse los refuerzos de la vacuna para seguir ampliando la inmunidad.

Frente al aumento de casos de coronavirus en el país, la ministra de Salud de la Nación, Carla Vizzotti, destacó la importancia de recibir los refuerzos de la vacuna y aseguró que el riesgo de desborde del sistema de salud "es muy lejano".

"Las últimas tres semanas comenzamos a ver un aumento, todavía es un aumento leve no una situación que predomine por sobre otros virus respiratorios. Este año tuvimos un pico muy precoz de gripe, ahora también estamos cursando un aumento de casos de gripe tipo B y circularon todos los demás virus todo el año", añadió.

En declaraciones a Radio 10, la ministra sostuvo que este incremento de contagios "no es predominante y no se está traduciendo en hospitalizaciones y muertes", y lo vinculó al hecho de que "el 82% de la población tiene al menos dos dosis" de la vacuna contra el COVID-19, pero sostuvo que "la preocupación ahora es un poco sobre la falta de percepción de riesgo y el pensar que ya pasó" la pandemia.

"El desafío es transmitir que vamos a seguir así con la mayor cantidad de personas vacunadas. Independientemente que no tengamos riesgo de desborde del sistema de salud, lo que buscamos es tener el menos impacto posible, salvar la mayor cantidad de vidas posibles y eso es a través de las vacunas", aseveró.

Para saber cómo actuar frente a este aumento significativo de casos de COVID-19, aquí un repaso por las dudas más frecuentes.

Qué nuevas subvariantes de Ómicron ya circulan en el país

El dato puede ser el punto de partida de una realidad preocupante de cara al futuro de la pandemia en la Argentina: ya circulan las subvariantes más contagiosas de Ómicron: la BQ.1.1 y la XBB.116.

Según información publicada en el último Boletín Epidemiológico Nacional (número 628), correspondiente a la semana número 46 o SE46 (13 al 19 de noviembre), ya circulan estas dos subvariantes de Ómicron. Llamativamente no se había hablado de esto en las semanas anteriores, pese a que hoy el último boletín precisa: “En SE41 se registra 1 caso de Ómicron BQ.1.1 y 1 caso de Ómicron XBB.116".

Se trata de los linajes BQ.1.1 y XBB.116, identificados por su mayor transmisibilidad. Su presencia en el territorio nacional fue advertida en el último Boletín Epidemiológico Nacional, emitido por el Ministerio de Salud de la Nación (Getty Images).

Es decir que estas dos subvariantes de preocupación ya circulaban en Argentina desde hace 5 semanas atrás, pero no habían aparecido en los Boletines Epidemiológicos anteriores de octubre y noviembre o, más precisamente, del 9 al 15 de octubre que es la semana 41.

En los boletines anteriores se detalló siempre la predominancia porcentual de las subvariantes de Ómicron BA.4 y BA.5 del coronavirus, pero nada se había dicho, pese al tiempo transcurrido, de B.Q.1.1 y XBB.1.

“El patrón de alta transmisión observado para Ómicron ha facilitado la aparición de mutaciones adicionales que definen diferentes sublinajes clasificados dentro la misma variante. A la fecha, se han reportado globalmente 5 diferentes linajes principales de Ómicron: BA.1, BA.2, BA.3, BA.4 y BA.5 y sus linajes descendientes (BA.1.1, BA.2.12.1, entre otros). En la actualidad, los linajes descendientes de BA.5 Ómicron continúan siendo dominantes a nivel mundial”, afirma el último BEN 628.

Y completa: “En Argentina, la situación actual de variantes de SARS-CoV-2 se caracteriza por una circulación exclusiva de la variante Ómicron. En relación a los linajes de Ómicron, en SE37 la proporción de BA.4, BA.5 y Ómicron compatible con BA.4/BA.5 es de 35,37%, 39,02% y 10,98%, mientras que BA.2 se sitúa en 7,32% (todas las muestras registradas para SE37 cuentan con identificación de linaje). Adicionalmente, en SE41 se registra 1 caso de Ómicron BQ.1.1 y 1 caso de Ómicron XBB.116. En relación al resto de las variantes del virus, en SE 4 y SE 15 del 2022, se informaron 2 casos de variante Lambda, sin identificación de casos adicionales a la fecha”.

La nueva subvariante BQ.1.1 preocupa por su gran contagiosidad (REUTERS).

En su último informe de vigilancia genómica sobre las variantes circulantes del COVID-19 en EEUU, los CDC indicaron que las subvariantes BQ.1 y BQ.1.1 de Ómicron representaron casi la mitad de los casos de coronavirus en el país durante la semana que terminó el 19 de noviembre, en comparación con 39,5% en la semana anterior. La proporción de BQ.1 y BQ.1.1 aumentó al 49,7%, alrededor de dos meses después de ser detectadas por primera vez. BQ.1.1 representó casi el 24,2% de las variantes circulantes y se estimó que BQ.1 fue responsable del 25,5% de los casos registrados.

Una nueva investigación acaba de sacar a la luz que 3 subvariantes de Ómicron que circulan actualmente, incluidas dos que representan casi el 50% de las infecciones por COVID-19 notificadas en los EEUU., son mejores para evadir los anticuerpos neutralizantes generados por vacunas e infecciones que las versiones anteriores de Ómicron. Los hallazgos se publicaron en la revista *Cell Host & Microbe*.

Los científicos probaron anticuerpos neutralizantes en muestras de suero sanguíneo de profesionales de la salud que fueron vacunados y recibieron refuerzos o que, recientemente, se infectaron con alguna de las subvariantes en circulación. Según detectaron, tres de ellas se destacaron por su resistencia a la respuesta inmune de anticuerpos. Son: BQ.1, BQ.1.1 y BA.2.75.2.

Barbijo, ¿sí o no?

El incremento inesperado de casos de coronavirus volvió a activar los protocolos para evitar un rebrote intenso. El uso del tapabocas fue fundamental desde el 2020 y la recomendación actual de los profesionales de la salud es utilizarlo en las "zonas rojas" como transportes públicos, espacios cerrados y lugares con mucha gente cerca.

La página web oficial de Buenos Aires Ciudad publicó una serie de preguntas frecuentes sobre el uso del barbijo. "El uso se debe dar cuando concurran a lugares públicos esenciales donde las medidas de distanciamiento social sean difíciles de mantener como supermercados, farmacias, bancos, transporte público, etc", señala el portal.

Cuándo testearse

"Actualmente en la Ciudad de Buenos Aires no se realizan testeos COVID-19 de manera espontánea. En caso de presentar síntomas compatibles con el virus, hay que dirigirse a la unidad febril más cercana para que el profesional de la salud evalúe la situación particular. En caso de que se crea necesario, se realizará el testeo correspondiente", explicaron a Infobae desde el Ministerio de Salud de la Ciudad de Buenos Aires.

Aunque a partir de las nuevas variantes y las vacunas la pandemia modificó sus características, los cuidados se fueron relajando. Los mandatos, en cambio, resultan prácticamente inalterables: la ventilación, la higiene de manos y el uso de barbijo en lugares cerrados con presencia de mucha gente (Getty Images)

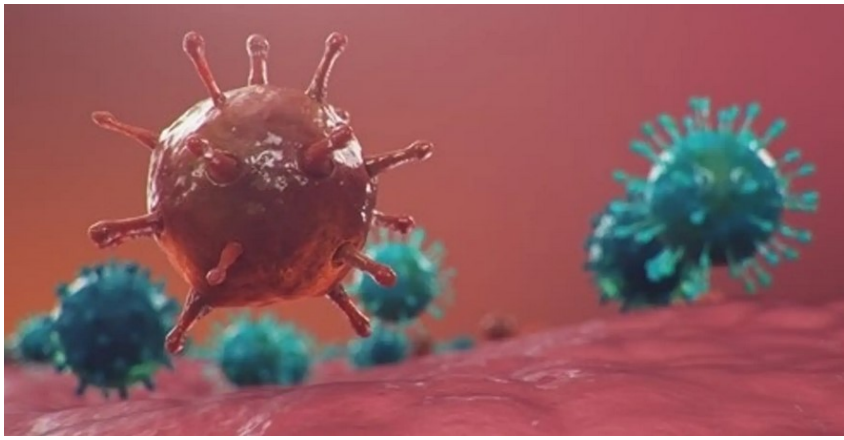
"Lo ideal sería que la persona que empieza con síntomas (los que ya conocemos) vea si se puede testear. El tema es que ahora los testeos están limitados, tanto en el ámbito público como en el privado, con lo cual no siempre es posible hacerlo. El testeo permite tomar medidas epidemiológicas del asilamiento de esa persona, como está previsto, durante cinco días y luego de eso, otros cinco días con actividad con uso de barbijo", remarcó Bonvehí.

En la Provincia de Buenos Aires la recomendación es que "todas las personas sintomáticas que sean mayores de 50 años, tengan condiciones de riesgo, trabajen en establecimientos de salud o instituciones de larga estadía, o requieran internación por infección respiratoria aguda" se testeen. Vale destacar que cada jurisdicción tiene sus propios lineamientos sobre el sistema o los protocolos de testeo.

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

Un estudio descifra los orígenes de Ómicron, la variante más contagiosa de la COVID-19

4 dic. La variante Ómicron de la COVID-19 ha desbancado a sus predecesoras y actualmente es la dominante en todo el mundo. En concreto sus linajes BA.4 y BA.5 son las responsables de los últimos contagios a nivel global.



Un estudio descifra los orígenes de Ómicron, la variante más contagiosa del Covid | FUNDACIÓN JIMÉNEZ DÍAZ/ Europa Press

Ómicron fue detectada por primera vez hace un año en Sudáfrica y, desde entonces, se ha extendido por todo el mundo a gran velocidad. Todavía no está claro cómo, cuándo y dónde se originó este virus.

Ahora, un estudio publicado en la revista científica '*Science*' por investigadores de la Charité - Universitätsmedizin de Berlín (Alemania) y una red de instituciones africanas ha mostrado que los predecesores de Ómicron existían en el continente africano mucho antes de que se identificaran los primeros casos, lo que sugiere que esta variante surgió gradualmente a lo largo de varios meses en diferentes países de África.

Los orígenes de la variante Ómicron

Desde el comienzo de la pandemia, el coronavirus ha cambiado constantemente. El mayor salto detectado en la evolución del SARS-CoV-2 hasta la fecha fue observado por los investigadores hace un año, cuando se descubrió una variante que difería del genoma del virus original en más de 50 mutaciones.

Detectada por primera vez en un paciente de Sudáfrica a mediados de noviembre de 2021, la variante bautizada posteriormente como Ómicron BA.1 se extendió a 87 países de todo el mundo en pocas semanas. A finales de diciembre, había sustituido a la variante Delta, anteriormente dominante en todo el mundo.

Dos teorías

A partir de entonces, las especulaciones sobre el origen de esta variante altamente transmisible se han centrado en dos teorías principales: O bien el coronavirus saltó de un humano a un animal donde evolucionó antes de infectar de nuevo a un humano como ómicron, o bien el virus sobrevivió en una persona con un sistema inmunitario comprometido durante un periodo de tiempo más largo y ahí es donde se produjeron las mutaciones.

Sin embargo, un nuevo análisis de muestras de COVID-19 recogidas en África antes de la primera detección de Ómicron pone ahora en duda estas dos hipótesis.

Los científicos empezaron por desarrollar una prueba especial de PCR para detectar específicamente la variante BA.1 de Ómicron. A continuación, analizaron más de 13.000 muestras respiratorias de pacientes con COVID-19 que se habían tomado en 22 países africanos entre mediados de 2021 y principios de 2022.

Al hacerlo, el equipo de investigación encontró virus con mutaciones específicas de Ómicron en 25 personas de seis países diferentes que contrajeron COVID-19 en agosto y septiembre de 2021, dos meses antes de que la variante se detectara por primera vez en Sudáfrica.

Para conocer mejor los orígenes de Ómicron, los investigadores también descodificaron, o "secuenciaron", el genoma viral de unas 670 muestras. Esta secuenciación permite detectar nuevas mutaciones e identificar nuevos linajes virales. El equipo descubrió varios virus que mostraban diversos grados de similitud con ómicron, pero no eran idénticos.

"Nuestros datos demuestran que Ómicron tuvo diferentes ancestros que interactuaron entre sí y circularon por África, a veces de forma simultánea, durante meses. Esto sugiere que la variante BA.1 Ómicron evolucionó gradualmente, durante lo cual el virus se adaptó cada vez más a la inmunidad humana existente", ha comentado Jan Felix Drexler, uno de los líderes del estudio.

Conclusiones del estudio

Además, los datos de la PCR llevaron a los investigadores a concluir que, aunque Ómicron no se originó únicamente en Sudáfrica, primero dominó las tasas de infección allí antes de extenderse de sur a norte por todo el continente africano en sólo unas semanas.

"Esto significa que el repentino aumento de Ómicron no puede atribuirse a un salto desde el reino animal o a la aparición en una sola persona inmunodeprimida, aunque estos dos escenarios también pueden haber desempeñado un papel en la evolución del virus. El hecho de que Ómicron nos haya cogido por sorpresa se debe más bien al punto ciego de diagnóstico que existe en grandes partes de África, donde presumiblemente sólo se registra una pequeña fracción de las infecciones por SARS-CoV-2", ha destacado Drexler.

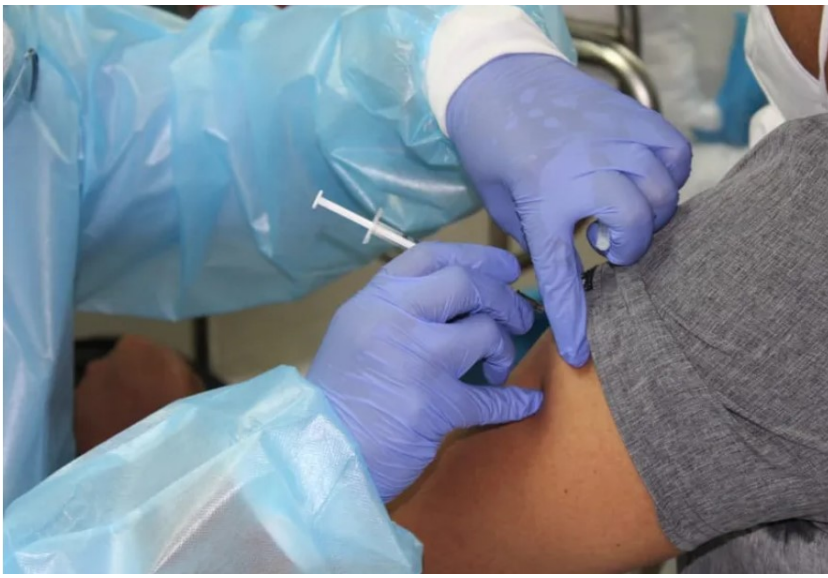
Fuente: ONDA CERO. Disponible en https://bit.ly/3PyxZhj

Vacuna bivalente contra COVID-19 será aplicada a las personas mayores de 12 años

5 dic. La vacuna bivalente de Pfizer contra la COVID-19 será aplicada a las personas mayores de 12 años de edad, informó el Ministerio de Salud de Panamá (Minsa).

Detalla que para que una persona pueda ser inoculada con la vacuna bivalente deberá contar con dos dosis de la vacuna monovalente, esperar dos semanas y después debe colocarse una sola dosis de esta nueva vacuna.

La Dirección Nacional de Farmacia y Drogas del Minsa autorizó el uso de emergencia de la "Vacuna Pfizer-BioNTech COVID-19", y se espera que las dosis lleguen a Panamá a finales de este mes de diciembre.



Se espera que las dosis lleguen a Panamá a finales de este mes de diciembre. CSS

"El Gobierno Nacional a través del equipo PanavaC-19 está muy pendiente de la situación epidemiológica del país, por lo que se espera que esta vacuna llegue al país antes de concluya el año, toda vez que Panamá sería uno de los primeros países en la región en obtenerla", indicó Elvia Lau, directora nacional de Farmacias y Drogas.

El Minsa indica que la vacuna bivalente protege contra la COVID-19 original y sus variantes como Ómicron y Delta. La misma es de 0,3 ml, que se suministra en un vial con una tapa gris y etiqueta con un borde gris y no se diluye antes de su uso.

“La nueva presentación bivalente, tiene mejor protección contra las variantes que están circulando (Original y Ómicron BA.4/BA.5, XBB, BQ1, BQ1.1 y Delta), se suministra en viales de dosis única de refuerzo, administrada al menos 2 meses después de completar un esquema primario de vacunación con cualquiera vacuna COVID-19 monovalente (1) y recibir (1) de las dosis de refuerzo más reciente. Es decir, tener mínimo 2 dosis de la vacuna COVID-19”, explica el Minsa.

Por otro lado, el Minsa reitera el llamado a la población a mantener las medidas de autocuidado o bioseguridad como el uso de mascarillas, distanciamiento físico y lavado de manos, para evitar el contagio por COVID-19. Asimismo le recuerda a la ciudadanía que actualmente se coloca en todo el país la vacuna Pfizer contra la COVID-19 de manera gratuita, también si presenta síntomas acudir a realizarse la prueba de hisopado y de salir positivo solicitar los tratamientos que el Estado panameño ha adquirido para combatir este virus.

“La pandemia no ha terminado, el estado de emergencia en cuanto a características sanitarias todavía está vigente, por ello se debe practicar el autocuidado y cumplir con las medidas de bioseguridad como el uso de la mascarilla donde hay aglomeración de personas y acudir a vacunarse que es gratuita”, puntualizó Lau.

Fuente: telemetro.com. Disponible en https://bit.ly/3j6QOw2

Vacuna bivalente, COVID-19: ¿Qué es y quiénes califican?

5 dic. La vacuna bivalente es una mezcla de dos componentes entre la cepa original del virus que causa COVID-19 junto a la cepa de la variante Ómicron, la cual busca brindar una amplia y mejor protección contra el coronavirus a quienes califican con el esquema completo de vacunación; dichas vacunas según la Administración de Alimentos y Medicamentos de los Estados Unidos FDA.

Las vacunas bivalentes también se les conoce como dosis de refuerzo "Actualizada" de la vacuna contra la COVID-19, la FDA asegura que la aprobación se da, debido a las variaciones del virus que causa la enfermedad; misma que va cambiando con el tiempo y por lo tanto, es necesario mantener la protección con una dosis de refuerzo.

Vacuna bivalente. Personal de salud realizando el proceso de vacunación. MINSA

El Ministro de Salud (MINSA) aclaró que estas vacunas bivalentes serán aplicadas únicamente a personas que tengan mínimo dos o tres dosis de la vacuna contra COVID-19, a finales del 2022 o a inicios del 2023 con el fin de obtener una protección de al menos un año contra las variantes del virus.

Vacunas Bivalente: Protección contra variantes

El Minsa Asegura que la vacuna bivalente tiene mejor protección contra las variantes del virus que están circulando, incluyendo la original y Ómicron BA.4/BA.5, XBB, BQ1, BQ1.1.

Mientras que la autoridad de salud pública de Estados Unidos, mencionó que el efecto de la vacuna mixta o bivalente en las personas fue similar a las vacunas principales contra la COVID-19 y mencionan que las personas inyectadas con la mencionada dosis generaron una respuesta inmunitaria más fuerte que las vacunas de primera generación.

Vacuna bivalente: ¿A quiénes les serán aplicadas?

La dosis de refuerzo con la vacuna bivalente en Panamá, les serán aplicadas a las personas mayores de 12 años así lo informó la entidad encargada de la Salud a nivel nacional; la institución aclara que el individuo deberá contar con dos dosis de la vacuna monovalente, esperar dos semanas y después debe colocarse una sola dosis de esta nueva vacuna.

Fuente: telemetro.com. Disponible en https://bit.ly/3Yz18NM

Qué síntomas presenta la tosferina, diferencias con influenza y COVID-19

5 dic. La tosferina es una infección bacterial altamente contagiosa que ocasiona una tos incontrolable que puede durar semanas o incluso meses. Esta enfermedad es causada por la bacteria Bordetella pertussis. Es una enfermedad grave que puede afectar a personas de cualquier edad.

La enfermedad se propaga fácilmente de una persona a otra, esto por medio de las partículas que se expulsan al estornudar o toser.

De acuerdo a Centros para el Control y Prevención de Enfermedades, los primeros síntomas pueden durar de 1 a 2 semanas.

Síntomas

- Moqueo o congestión nasal
- Fiebre baja
- Tos leve ocasional (puede no suceder con los bebés)
- Apnea (pausas en la respiración que pueden ser mortales) y ponerse azul o morado en el caso de bebés y niños pequeños.

Posterior a las primeras semanas, las personas con tosferina podrían presentar accesos de tos rápidos, violentos e incontrolables. Los síntomas de la infección a menudo duran 6 semanas.

Diferencias con influenza y COVID-19

El pasado domingo, el Ministerio de Salud Pública (MSP) de Ecuador alertó sobre un incremento de infecciones respiratorias causadas por la influenza estacional y otros virus respiratorios como el SARS-CoV-2 que ocasiona la COVID-19.

Tanto la influenza (gripe) como la COVID-19 son enfermedades respiratorias contagiosas, pero son provocadas por virus diferentes. No es posible diferenciar la influenza de la COVID-19 solo observando los

síntomas, porque algunos de los signos y síntomas son iguales para las dos enfermedades. Por ende, es necesario realizar exámenes.

Por otro lado, las principales diferencias con la tosferina, en el caso de la covid-19, es que esta enfermedad presenta algunos síntomas distintos como: el cansancio, la pérdida del gusto o del olfato, dolor de cabeza, molestias y dolores, diarrea, dificultad para respirar o disnea.

Continuar con prevención

El epidemiólogo Johnny Real considera que se deben reforzar las medidas de bioseguridad, como el uso de la mascarilla, lavado de manos, distanciamiento, separar vajillas y uso de utensilios para cada persona, y preferir reuniones en lugares abiertos.

Fuente: El Universo. Disponible en https://bit.ly/3Vc9uYp

Reino Unido autoriza el uso de la vacuna contra la COVID-19 de Pfizer/BioNTech en "niños de 6 meses a 4 años"

6 dic. La Agencia Reguladora de Medicamentos y Productos Sanitarios (MHRA, por sus siglas en inglés) de Reino Unido autorizó este martes el uso de la vacuna contra la COVID-19 de Pfizer/BioNTech, Comirnaty, en "lactantes y niños de 6 meses a 4 años" de edad.

En un comunicado, la agencia informó que la autorización se produjo "después de que se hubiera determinado que cumple con los estándares de seguridad, calidad y eficacia del regulador, sin que se identificaran nuevos problemas de seguridad".

La agencia agregó que la "decisión fue respaldada por la Comisión de Medicamentos Humanos, luego de una cuidadosa revisión de las evidencias" que incluye "datos de un ensayo clínico en curso en el que participaron 4.526" pesonas.

La MHRA señaló que "los efectos secundarios comunes esperados (reactogenicidad) coincidieron con lo que se puede anticipar de una vacuna en este grupo de edad" y recalcó que la vacuna se administrará en una dosis "más baja en comparación con la utilizada en personas de 5 a 11 años (3 microgramos frente a 10 microgramos)".

La agencia explicó que "se administrará en tres inyecciones en la parte superior del brazo, con las dos primeras dosis administradas con 3 semanas de diferencia, seguidas de una tercera dosis administrada al menos 8 semanas después de la segunda dosis".

No obstante, la agencia aclaró que "corresponde al Comité Conjunto de Vacunación e Inmunización (JCVI) determinar si se recomendará el uso de la vacuna en este grupo de edad como parte del programa de vacunación contra la COVID-19 de Reino Unido".

Fuente: Agencia Anadolu. Disponible en https://bit.ly/3V59wkP

Health Canada approves Novavax's COVID-19 vaccine for adolescents

8 dic. Health Canada has granted approval for a supplement to a New Drug Submission (sNDS) of Novavax's COVID-19 vaccine (Recombinant protein, Adjuvanted), Nuvaxovid (NVX-CoV2373), for use in adolescents aged 12 to 17 years.

The vaccine is indicated to be administered as a primary regimen comprising two doses for active immunisation to prevent COVID-19 in adolescents of this age group.

This approval was based on findings from the paediatric expansion of the Phase III PREVENT-19 clinical trial underway in 2,247 adolescents of this age group in 75 US sites.

The trial is designed to analyse the safety and effectiveness of the vaccine.

The effectiveness evaluation in the paediatric expansion was based on antibody titers, which were demonstrated to be greater in adolescents compared to young adult subjects.

Effectiveness was backed by clinical efficacy showing that the vaccine offered an overall 79.5% clinical protective efficacy when the Delta variant of the virus was prevalent.

Additionally, Nuvaxovid was found to be well-tolerated in the paediatric expansion, the preliminary safety data showed.

A reduced number of serious and severe adverse reactions (AR) were reported and balanced between the vaccine and placebo arms.

Novavax president and CEO Stanley Erck said: "With the winter Covid-19 surge upon us, it's more important now than ever to ensure adolescents have access to Covid-19 vaccine options, including Nuvaxovid.

"Our vaccine is developed using an innovative approach to traditional vaccine technology and may have a special role to play in adolescent vaccination based on parents' and caregivers' familiarity with protein-based vaccines used in other disease areas."

In February, the Canadian health agency approved the vaccine usage as an initial regimen in adults aged 18 years and above. Homologous boosting with the vaccine in adults was approved in November.

Fuente: Pharmaceutical Technology. Disponible en https://bit.ly/3YyApkk

BRIN develops virus-like particle to make vaccines

Dec 8. The National Research and Innovation Agency (BRIN) has developed a virus-like particle (VLP) using the silkworm genetic expression system as one of the platforms for producing vaccines.

"VLP is different from the real virus because it does not have any genetic material so it cannot be transmitted and replicated. It is what makes VLP safer compared to using live viruses in the development of vaccine production," a researcher at BRIN's Research Center for Vaccines and Drugs Doddy Irawan Setyo Utomo informed in a statement released on Wednesday.

During research, his team used silkworms as a protein expression system for the development of the VLP because that could increase protein stability, facilitate post-translational modification, and produce higher secreted protein.

It is also a sustainable and environmentally friendly protein expression system, which does not need any aseptic conditions.

The researched noted that compared to other vaccine development platforms, VLP has high immunogenicity and safety, thus it is an ideal platform for vaccine development.

Furthermore, VLP is a form of viral structural protein, thus it has inherent properties and the ability to self-assemble and mimic the morphology of the pathogen.

Hence, VLP can be used to study the mechanism of a viral infection and trigger the immune response.

Utomo said that the reason his team is using the VLP technology is because of its similar geometric structure and extraordinary uniformity, having particulate properties, ability to become multivalent, as well as possessing the same antigenic as the original virus.

VLP can also be used as a vector to display foreign antigens on its surface. The hollow interior of VLP can be filled with materials for various viral therapies.

In addition, VLP also has high stability in extreme environmental conditions, compared to dissolved antigens.

Earlier, Health Minister Budi Gunadi Sadikin said that Indonesia is still importing seven vaccine antigens, including the Measles, Rubella, Injectable Polio (IPV), Japanese encephalitis, Human Papilloma Virus (HPV), Pneumococcal Conjugate Vaccine (PCV), and Rotavirus.

The provision of imported vaccines makes up the biggest chunk of spending of the Health Ministry, he said. Hence, the Indonesian government is striving to improve domestic vaccine development technology.

Fuente: Antara Indonesian News Agency. Disponible en https://bit.ly/3BIPcyW

Soberana 02 y Soberana Plus reciben gran premio en evento internacional en Belarús

9 dic. Las vacunas cubanas anti covid-19 Soberana 02 y Soberana Plus obtuvieron el Gran Premio del evento internacional de negocios Líder del Año, en Belarús, por su contribución a la lucha mundial contra la pandemia.

De acuerdo con un reporte de Prensa Latina, Santiago Pérez, Embajador de Cuba en Minsk, significó que el galardón reconoce el impacto social de los fármacos antillanos, los cuales ostentan resultados de seguridad e inmunogénicidad en población pediátrica, adultos y adultos mayores.

Por su parte, Idania Caballero, directora de la oficina de representación del Grupo Empresarial BioCubaFarma

para los países de la Unión Euroasiática, destacó que el reconocimiento se otorga además por la novedad de la innovación del inmunógeno y su repercusión en otras naciones.

Caballero resaltó que con el Premio se exalta la labor de tres instituciones de BioCubaFarma ejemplos de alianza estratégica de larga duración en el desarrollo científico cubano, como lo son el Instituto Finlay de Vacunas, el Centro de Inmunología Molecular y el Centro Nacional de Biopreparados.

Belarús se convirtió, el 26 de julio del presente año, en el primer país de Europa en registrar la vacuna Soberana Plus contra la COVID-19, cuando el Centro de Peritaje y Pruebas del Ministerio de Salud de ese país aprobó el uso del inmunógeno.

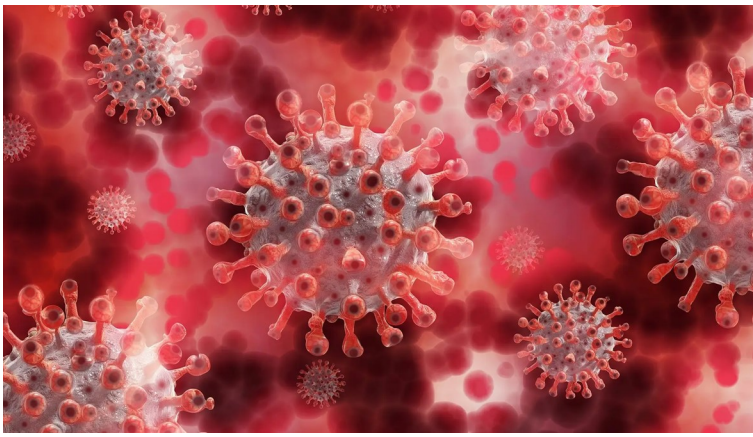
En octubre, arribó a Belarús un lote de Soberana Plus para apoyar la inmunización de la población en el enfrentamiento a la pandemia, mientras que, a la par de la llegada del cargamento, la agencia reguladora de la nación euroasiática registraba el fármaco Soberana 02 para su empleo.

Soberana 02 es la primera y única vacuna conjugada en ser autorizada para uso de emergencia contra la COVID-19, especialmente diseñada para poblaciones pediátricas. En tanto, Soberana Plus constituye la primera de refuerzo oficialmente autorizada en el mundo para convalecientes adultos y en edad pediátrica.

El Premio Internacional de Negocios Líder del Año en el territorio belaruso es concedido por decisión de un Consejo de Expertos, compuesto por representantes de comunidades empresariales, ministerios, departamentos relevantes y organizaciones públicas, contextualizó PL.

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

Prueban un fármaco "señuelo" que neutraliza la COVID-19 y podría ser eficaz contra nuevos coronavirus



11 dic. La campaña de vacunación contra la COVID-19 sigue en marcha en nuestro país. Actualmente, las vacunas siguen siendo la herramienta más eficaz en la lucha contra el virus y en España ya se se han administrado más de 103 millones de dosis, lo que se traduce en 40 millones de personas inmunizadas contra el coronavirus.

No obstante, la ciencia sigue investigando el uso de fármacos para tratar la Covid. Recientemente la Agencia Europa de Medicamentos (EMA) ha advertido sobre los tratamientos basados en anticuerpos monoclonales. La Agencia señala que es "poco probable" que estos anticuerpos monoclonales autorizados contra la COVID-19 sean eficaces frente a las nuevas variantes.

Señuelos ACE2 para neutralizar todas las variantes del virus

No ocurre lo mismo con el señuelo del receptor ACE2. Científicos del Instituto del Cáncer Dana-Farber, en Estados Unidos, han desarrollado un fármaco que neutraliza potentemente el SARS-CoV-2, y tan eficaz contra la variante Ómicron como para cualquier otra variante probada.

El fármaco está diseñado de tal manera que la selección natural para mantener la infecciosidad del virus debería mantener también la actividad del fármaco contra futuras variantes.

Según un estudio publicado en la revista 'Science Advances', no se trata de un anticuerpo, sino una molécula relacionada conocida como 'señuelo' del receptor ACE2.

A diferencia de los anticuerpos, el señuelo ACE2 es mucho más difícil de eludir para el virus SARS-CoV-2, ya que las mutaciones en el virus que le permitirían evitar el fármaco también reducirían la capacidad del virus para infectar células. Los científicos de Dana-Farber hallaron la forma de hacer que este tipo de fármaco neutralizara los coronavirus de forma más potente en animales infectados con COVID-19 y de que su administración a los pacientes fuera segura.

Por qué son más eficaces que los anticuerpos

Este informe llega en un momento en que los fármacos de anticuerpos utilizados para tratar el COVID-19 han perdido su eficacia porque la proteína viral de la espiga ha mutado para escapar a la acción de los anticuerpos.

Los investigadores, dirigidos por el primer autor James Torchia, y el autor principal Gordon Freeman, identificaron características que hacen que los señuelos ACE2 sean especialmente potentes y duraderos. Por ejemplo, descubrieron que cuando incluían una parte de la proteína ACE2 denominada dominio similar a la colectrina, el fármaco se adhería más fuertemente al virus y tenía una vida más larga en el organismo.

Sus experimentos demostraron que los señuelos ACE2 tienen una potente actividad contra el virus porque desencadenan un cambio irreversible en la estructura del virus: "revientan" la parte superior de la proteína viral de la espiga para que no pueda unirse al receptor ACE2 de la superficie celular e infectar las células.

El virus SARS-CoV-2 está cubierto de proyecciones denominadas proteínas espiga que permiten al virus infectar las células. La proteína espiga se une al receptor ACE2 de la superficie celular y luego se repliega, introduciendo la espiga en la célula, lo que permite la entrada del virus.

Los señuelos ACE2 atraen al virus para que se una al señuelo en lugar de a la célula, "reventando" el pico e inactivando el virus antes de que pueda entrar en las células. Esto explica la sorprendente potencia del fármaco: no sólo funciona como un inhibidor competitivo, sino que inactiva permanentemente el virus.

Dado que la unión a ACE2 es necesaria para la infección, las variantes pueden cambiar pero deben seguir uniéndose a ACE2, lo que hace que el fármaco sea persistentemente activo contra todas las variantes.

Los investigadores afirman que, además de tratar las variantes del SRAS-CoV-2 resistentes a los anticuerpos, el fármaco descrito en este estudio podría ser útil para tratar nuevos coronavirus que pudieran surgir en el futuro para infectar a los humanos. Esto se debe a que muchos coronavirus en la naturaleza preparados para entrar en la población humana también utilizan ACE2 para infectar células.

Fuente: Onda Cero. Disponible en https://bit.ly/3HJm7XU

$30 Million Supports Developing Vaccines in Africa

Dec 12. A global multinational specialty pharmaceutical company announced today that it would receive USD30 million from the Bill & Melinda Gates Foundation and the Coalition for Epidemic Preparedness Innovations (CEPI) to support its capabilities to manufacture vaccines for Africa. This is important news since 99% of all vaccines administered in Africa are currently imported.

The new funding from CEPI and the Gates Foundation will support a ten-year agreement between Aspen

Pharmacare Holdings Limited and Serum Institute of India Pvt Ltd. (SII) that aims to expand the sourcing of affordable vaccines manufactured in Africa. SII is the world's largest vaccine manufacturer by the number of doses produced and sold globally (1.5 billion doses).

Through the partnership with SII, Aspen will manufacture and distribute four routine vaccines in Africa Pneumococcal, Rotavirus, Polyvalent Meningococcal, and Hexavalent.

The technology transfer activities will initiate in early 2023.

In addition, the funding from CEPI and the Gates Foundation will help sustain regional vaccine manufacturing capacity at Aspen for potential future outbreak response to secure early access to African-produced vaccines in a future public health emergency.

Over the past two decades, the increased globalization of vaccine manufacturing has generated more reliable vaccine supplies at a lower cost, helping many countries reach more people with lifesaving vaccines.

Because lifesaving vaccines and treatments are not available or affordable everywhere, vaccine-preventable diseases continue to devastate Africa.

In 2021r, African leaders, civil society, the private sector, and organizations such as the African Union and the Africa Centres for Disease Control laid out a vision to expand regional manufacturing capacity, including an ambitious plan to produce 60% of the continent's vaccines locally by 2040.

And the launch of the Partnership for African Vaccine Manufacturing, as well as a call for supranational funders and procurement agencies to source at least 30% of their requirements from African manufacturers.

Previously, Bill Gates, co-chair of the Bill & Melinda Gates Foundation, reaffirmed the foundation's long-term commitment to Africa and to working directly with countries to support breakthrough solutions in health, agriculture, gender equality, and other critical areas.

"The big global challenges we face are persistent. But we have to remember, so are the people solving them," said Mr. Gates in a press release issued on November 17, 2022.

"Our foundation will continue to support solutions in health, agriculture, and other critical areas—and the systems to get them out of the labs and to the people who need them."

Fuente: Precision Vaccinations. Disponible en https://bit.ly/3HJmEJo

La autorización de la vacuna española de COVID-19 se retrasa hasta 2023

13 dic. No habrá vacuna española de COVID-19 en 2022. A pesar de que Diana Morant, ministra de Ciencia, dijera en julio que esperaba la autorización “en pocos días”, habrá que esperar al menos hasta enero de 2023 para que el producto del laboratorio catalán Hipra reciba el visto bueno de la Agencia Europea del Medicamento (EMA, en sus siglas en inglés).

La realidad es que el comité de medicamentos de uso humano (CHMP) de esta agencia no ha incluido en

su agenda de diciembre la evaluación de la vacuna de Hipra. De esta forma, deberá esperar, al menos, a la próxima reunión, que no se producirá hasta enero.

Desde la compañía se explica que ya aportaron el dosier completo del producto y las respuestas a las preguntas adicionales con dudas de la EMA, por lo que en este momento se encuentran a la espera de que la autoridad europea decida evaluar el producto español.

Ya el mes pasado, el laboratorio de la familia Nogareda vio como la EMA no incluía en la agenda esta evaluación, debido a que la compañía había tenido que aclarar cuestiones que eran dudosas para el organismo comunitario.

En consecuencia, se complica aún más el uso de esta vacuna como dosis de refuerzo en la campaña de vacunación invernal en toda Europa, con especial énfasis en administrar las nuevas versiones para la variante ómicron, fundamentalmente de las versiones de ARN mensajero de empresas como Pfizer/ BioNTech y Moderna.

Una vez que la EMA lo aconseje, será la Comisión Europea la que deberá dar su autorización definitiva para comercializar el producto, en un periodo que suele ser muy corto en el caso de las vacunas del Covid. La EMA podría convocar una reunión extraordinara antes de final de año para evaluar la versión española, pero es altamente improbable que suceda en la medida en que ya existen vacunas en comercialización frente al coronavirus.

La ventaja actual de Hipra es que la Comisión Europea llegó a un acuerdo para adquirir hasta 250 millones de dosis si la vacuna se aprobaba, a distribuir entre los países interesados en utilizarla. El producto del laboratorio (hasta ahora especializado en veterinaria) está basado en proteína recombinante y se presenta como booster o dosis de refuerzo.

Fuente: Cinco Días. Disponible en https://bit.ly/3PI83QE

Nasal vaccines promise to stop the COVID-19 virus before it gets to the lungs – an immunologist explains how they work

Dec 14. The Pfizer-BioNTech and Moderna mRNA vaccines have played a large role in preventing deaths and severe infections from COVID-19. But researchers are still in the process of developing alternative approaches to vaccines to improve their effectiveness, including how they're administered. Immunologist and microbiologist Michael W. Russell of the University at Buffalo explains how nasal vaccines work, and where they are in the development pipeline.

How does the immune system fight pathogens?

The immune system has two distinct components: mucosal and circulatory.

The mucosal immune system provides protection at the mucosal surfaces of the body. These include the mouth, eyes, middle ear, the mammary and other glands, and the gastrointestinal, respiratory and urogenital tracts. Antibodies and a variety of other anti-microbial proteins in the sticky secretions that cover these surfaces, as well as immune cells located in the lining of these surfaces, directly attack invading pathogens.

The circulatory part of the immune system generates antibodies and immune cells that are delivered through the bloodstream to the internal tissues and organs. These circulating antibodies do not usually reach the mucosal surfaces in large enough amounts to be effective. Thus mucosal and circulatory compartments of the immune system are largely separate and independent.

What are the key players in mucosal immunity?

The immune components people may be most familiar with are proteins known as antibodies, or immunoglobulins. The immune system generates antibodies in response to invading agents that the body identifies as “non-self,” such as viruses and bacteria.

Antibodies bind to specific antigens: the part or product of a pathogen that induces an immune response. Binding to antigens allows antibodies to either inactivate them, as they do with toxins and viruses, or kill bacteria with the help of additional immune proteins or cells.

The mucosal immune system generates a specialized form of antibody called secretory IgA, or SIgA. Because SIgA is located in mucosal secretions, such as saliva, tears, nasal and intestinal secretions, and breast milk, it is resistant to digestive enzymes that readily destroy other forms of antibodies. It is also superior to most other immunoglobulins at neutralizing viruses and toxins, and at preventing bacteria from attaching to and invading the cells lining the surfaces of organs.

There are also many other key players in the mucosal immune system, including different types of anti-microbial proteins that kill pathogens, as well as immune cells that generate antibody responses.

How does the COVID-19 virus enter the body?

Almost all infectious diseases in people and other animals are acquired through mucosal surfaces, such as by eating or drinking, breathing or sexual contact. Major exceptions include infections from wounds, or pathogens delivered by insect or tick bites.

The virus that causes COVID-19, SARS-CoV-2, enters the body via droplets or aerosols that get into your nose, mouth or eyes. It can cause severe disease if it descends deep into the lungs and causes an overactive, inflammatory immune response.

This means that the virus’s first contact with the immune system is probably through the surfaces of the nose, mouth and throat. This is supported by the presence of SIgA antibodies against SARS-CoV-2 in the secretions of infected people, including their saliva, nasal fluid and tears. These locations, especially the tonsils, have specialized areas that specifically trigger mucosal immune responses.

Some research suggests that if these SIgA antibody responses form as a result of vaccination or prior infection, or occur quickly enough in response to a new infection, they could prevent serious disease by confining the virus to the upper respiratory tract until it is eliminated.

How do nasal vaccines work?

Vaccines can be given through mucosal routes via the mouth or nose. This induces an immune response through areas that stimulate the mucosal immune system, leading mucosal secretions to produce SIgA antibodies.

There are several existing mucosal vaccines, most of them taken by mouth. Currently only one, the flu vaccine, is delivered nasally.

In the case of nasal vaccines, the viral antigens intended to stimulate the immune system would be taken up by immune cells within the lining of the nose or tonsils. While the exact mechanisms by which nasal vaccines work in people have not been thoroughly studied, researchers believe they work analogously to oral mucosal vaccines. Antigens in the vaccine induce B cells in mucosal sites to mature into plasma cells that secrete a

form of IgA. That IgA is then transported into mucosal secretions throughout the body, where it becomes SIgA.

If the SIgA antibodies in the nose, mouth or throat target SARS-CoV-2, they could neutralize the virus before it can drop down into the lungs and establish an infection.

What advantage do mucosal vaccines have against COVID-19?

I believe that arguably the best way to protect an individual against COVID-19 is to block the virus at its point of entry, or at least to confine it to the upper respiratory tract, where it might inflict relatively little damage.

Breaking chains of viral transmission is crucial to controlling epidemics. Researchers know that COVID-19 spreads during normal breathing and speech, and is exacerbated by sneezing, coughing, shouting, singing and other forms of exertion. Because these emissions mostly originate from saliva and nasal secretions, where the predominant form of antibody present is SIgA, it stands to reason that secretions with a sufficiently high level of SIgA antibodies against the virus could neutralize and thereby diminish its transmissibility.

Existing vaccines, however, do not induce SIgA antibody responses. Injected vaccines primarily induce circulating IgG antibodies, which are effective in preventing serious disease in the lungs. Nasal vaccines specifically induce SIgA antibodies in nasal and salivary secretions, where the virus is initially acquired, and can more effectively prevent transmission.

Nasal vaccines may be a useful supplement to injected vaccines in hot spots of infection. Since they don't require needles, they might also help overcome vaccine hesitancy due to fear of injections.

How close are researchers to creating a nasal COVID-19 vaccine?

There have been over 100 oral or nasal COVID-19 vaccines in development around the world.

Most of these have been or are currently being tested in animal models. Many have reported successfully inducing protective antibodies in the blood and secretions, and have prevented infection in these animals. However, few have been successfully tested in people. Many have been abandoned without fully reporting study details.

According to the World Health Organization, 14 nasal COVID-19 vaccines are in clinical trials as of late 2022. Reports from China and India indicate that nasal or inhaled vaccines have been approved in these countries. But little information is publicly available about the results of the studies supporting approval of these vaccines.

Fuente: The Conversation. Disponible en https://bit.ly/3W5ypyo

Cuba's homegrown Abdala vaccine can be administered in Mexico

Dec 15. Cuba's homegrown Abdala vaccine against COVID-19 can be used as a booster shot or first dose in Mexico, due to its 92-percent effectiveness and because it is similar to those administered here, a senior official said on Thursday.

Eduardo Clark, general director of Mexico City's Digital Agency for Public Innovation, revealed such details after informing that Cuba's vaccine will be administered to 400,000 people next week.

This expert told reporters that it can be used as a universal booster shot (a single dose) and also in new vaccination schedules (three doses).

He added that Abdala will be administered in the new vaccination campaign after 400,000 doses arrived in this city, and said that the vaccine was approved by the Federal Committee for Protection from Sanitary Risks (COFEPRIS in Spanish) exactly a year ago.

He explained that it will be the first time that the Cuban-made vaccine will be administered in this city and the rest of the country, and revealed that there are four million doses.

All vaccines, including Abdala, have to be classified, not only antigens, but all medicines imported or produced in Mexico. All serious drugs are endorsed by COFEPRIS, he said.

Clark recalled that all the documentation about the Abdala vaccine was sent to COFEPRIS a year ago, so this is not something new.

Fuente: Prensa Latina. Disponible en https://bit.ly/3Yy7vRq

Qué es el virus del camello, la enfermedad que aterroriza a Francia y podría dejarla sin 5 jugadores para la final con Argentina

16 dic. Dos jugadores del equipo de Deschamps ya se perdieron la semifinal por el virus del MERS, cuya incidencia es alta en la zona de la Península Arábiga. Ahora, hay otros 3 afectados de cara a la gran final contra Argentina de este domingo.

Tras clasificarse para la final del Mundial de Qatar 2022 al derrotar a Marruecos por 2 a 0 en semis, un nuevo virus preocupa a la Selección de Francia a días del partido definitorio: se trata del "virus del camello", un tipo de afección respiratoria que ya dejó a dos jugadores de 'Les Bleus' afuera de las semifinales.

En el encuentro contra los africanos, Didier Deschamps no pudo contar tanto con el volante Adrien Rabiot como con el defensor Dayot Upamecano, ausentes tras confirmarse que padecían la enfermedad.

Ahora, este jueves se conoció que el delantero Kingsley Coman también parece haber contraído el virus, mientras que hoy mismo se informó la dupla de defensores centrales de los galos, Raphaël Varane y Ibrahima Konaté, también están afectados.

Así lo informó este viernes RMC sports, medio que indicó que Konaté no se siente bien y al parecer se quedaría afuera de la práctica de hoy, mientras que Varane se encuentra mejor y participaría del entrenamiento.

A raíz de esto, los cinco jugadores están en duda para la gran final contra Argentina este domingo a partir de las 12:00 horas. Según asegura el diario Sport, "el virus del camello", el coronavirus MERS-CoV, parece ser el culpable detrás de estas gripes que complican a 'Les Bleus'.

El entrenador francés, Didier Deschamps, se refirió al virus que afecta a los galos e intentó justificar las complicaciones con el descenso de las temperaturas sufrido en Qatar en los últimos días: "Las temperaturas han bajado. Hay aire acondicionado completo. Hay estados febriles".

Además señaló que están procurando tener "todos los cuidados posibles para que el virus no se propague al resto del plantel".

Además, sumó que debido a los "organismos tensos" y la "fatiga", los jugadores se encuentran debilitados: "A Dayot le sucedió justo después del partido contra Inglaterra, no es casualidad", ejemplificó.

"Nos adaptamos a la situación sin volvernos paranoicos. Tomamos nuestras precauciones con Dayot y Adrien", cerró al respecto. En este sentido, el medio francés Le Parisien informó que se le impuso a la prensa el uso de barbijo tras el cierre de la fase de grupos y los cuartos de final contra Inglaterra.

El virus del camello: ¿De qué se trata y dónde surgió?

El "virus del camello" es, en realidad, el causante del síndrome respiratorio de Medio Oriente, mejor conocido por sus siglas en inglés: MERS. Surgido en Arabia Saudita, se trata de un tipo de coronavirus que causó una epidemia entre el 2012 y el 2015 e incluso fue calificada por la Organización Mundial de la Salud (OMS) como una amenaza "con propensión a pandemia".

Por su parte, la CDC recomienda acercarse con aviso previo a un centro médico en caso de desarrollar síntomas compatibles con MERS "dentro de los 14 días posteriores a un viaje a países en, o cerca de, la Península Arábiga".

Este virus parece ser el que afecta a los galos a tan solo días de la final contra Argentina, la cual definirá si estos mantienen el título de campeones del mundo o no. Sin embargo, en busca de apaciguar las preocupaciones, el defensor y primer autor del gol contra Marruecos, Theo Hernández, se refirió a la afección de sus colegas: "Adri está enfermo, pero no es complicado. Espero que esté disponible para la final. ¿Preocuparse? No. Para nada", enfatizó.

El virus del camello: todos los síntomas del MERS-CoV

El MERS-CoV se caracteriza por su alta peligrosidad, pero baja transmisibilidad: la epidemia iniciada en 2012 en la Arabia Saudita rural infectó a más de 1000 individuos en 24 naciones distintas hasta el 2015 y mató a 400 de estas, por lo que la mortalidad se calcula en un tercio de los positivos.

Los síntomas más leves del MERS son:

- Fiebre
- Tos
- Dificultad para respirar
- Diarrea (inusual)
- Nauseas o vómitos (inusual)

Los síntomas más graves del MERS son:

- Neumonía
- Insuficiencia renal

"Alrededor de 3 o 4 de cada 10 personas reportadas con MERS han muerto", advierte la CDC, remarcando que "la mayoría de las personas que fallecieron tenían una condición médica preexistente que debilitó su sistema inmunológico o una condición médica subyacente que aún no se había descubierto".

Fuente: Cronista. Disponible en https://bit.ly/3BK5I7v

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Estrategia de búqueda: *Vaccine in the title or abstract AND 20221201:20221211 as the publication date 92 records*

1.WO/2022/253191TLR7 AGONIST CONJUGATED PEPTIDE-BASED NOVEL CORONAVIRUS NANOEMULSION VACCINE AND PREPARATION THEREOF
WO - 08.12.2022
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/CN2022/096041 Solicitante SHANGHAI INSTITUTE OF MATERIA MEDICA, CHINESE ACADEMY OF SCIENCES Inventor/a ZHANG, Xinxin

The present invention relates to a novel coronavirus vaccine using a TLR7 agonist conjugated peptide as an antigen and an emulsion as an adjuvant. An antigen polypeptide of the conjugated peptide is a polypeptide derived from an S protein of SARS-CoV-2, and the adjuvant is an oil-in-water nanoemulsion containing squalene. The conjugated peptide nanoemulsion vaccine preparation of the present invention is thermally stable, and can induce a high level of protective humoral immune response in a cynomolgus monkey, and the neutralizing antibody titer of antiserum after immunization of cynomolgus monkey is high, such that invasion of wild-type strain and mutant novel coronavirus can be blocked. The vaccine of the present invention has a nearly complete protection effect on the upper and lower respiratory tracts of the cynomolgus monkey in a cynomolgus monkey SARS-CoV-2 challenge test. The nanoemulsion vaccine of the present invention is fast and convenient to prepare, and can realize large-scale production in a short term for coping with the novel coronavirus outbreak.

2.20220387569INDUCED PLURIPOTENT STEM CELL-BASED CANCER VACCINES
US - 08.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17827957 Solicitante Khloris Biosciences, Inc. Inventor/a Stephen D. Wolpe
In one embodiment, the present application discloses a mammalian autologous vaccine or allogeneic vaccine comprising an effective amount of a mammalian induced pluripotent stem cells (iPSCs) obtained by reprogramming of somatic cells from a patient; wherein the autologous vaccine or the allogeneic vaccine expresses a gene selected from the group consisting of ASTE1, BIRC5, CDCA1, CDKN2A, DEPDC1, EGFR, ERBB2, FOXM1, GPC3, HJURP, HSPA8, HSP90B1, IDH1, IDO1, IGF2BP3, IMPS, KIF20A, KIF20B, MELK, MGAT5, NUF2, PMEL, RAS, TAF1B, TOMM34, TTK, TP53, VEGFR1 and VEGFR2; and wherein the autologous vaccine or the allogeneic vaccine induces an immune response from the patient for the treatment of cancer.

3.WO/2022/256277INDUCED PLURIPOTENT STEM CELL-BASED CANCER VACCINES
WO - 08.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/031491 Solicitante KHLORIS BIOSCIENCES, INC. Inventor/a WOLPE, Stephen, D.
In one embodiment, the present application discloses a mammalian autologous vaccine or allogeneic vaccine comprising an effective amount of a mammalian induced pluripotent stem cells (iPSCs) obtained by reprogramming of somatic cells from a patient; wherein the autologous vaccine or the allogeneic vaccine expresses a gene selected from the group consisting of ASTE1, BIRC5, CDCA1, CDKN2A, DEPDC1, EGER, ERBB2, F0XM1, GPC3, HJURP, HSPA8, HSP90B1, IDH1, ID01, IGF2BP3, IMP3, KIF20A, KIF20B, MEEK, MGAT5, NUF2, PMEL, RAS, TAF1B, TOMM34, TTK, TP53, VEGFR1 and VEGFR2; and wherein the autologous vaccine or the allogeneic vaccine induces an immune response from the patient for the treatment of cancer.

4.20220387577A NOVEL VACCINE AGAINST HEAMOPHILUS PARASUIS
US - 08.12.2022
Clasificación Internacional A61K 39/102 Nº de solicitud 17775411 Solicitante Intervet Inc. Inventor/a Antonius Arnoldus Christiaan Jacobs
The invention pertains to a serine protease antigen which induces antibodies against a protein having at least 69% sequence identity with the *Heamophilus parasuis* protein according to SEQ ID No: 1, for use in a prophylactic method to protect a pig against an infection with *Haemophilus parasuis* by administering a vaccine to the pig, wherein the vaccine comprises the serine protease antigen. The invention also pertains to a vaccine, a method to manufacture such a vaccine and a method to protect a pig against *H. parasuis.*

5.20220387574ATTENUATED SALMONELLA GALLINARUM MUTANT STRAINS AND USES THEREOF

US - 08.12.2022
Clasificación Internacional A61K 39/112 Nº de solicitud 17824608 Solicitante SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION Inventor/a Hyuk-Joon KWON
The present disclosure relates to *Salmonella Gallinarum* mutant strains and uses thereof. A vaccine composition according to an aspect has no risk of recovering pathogenicity, has no residual pathogenicity due to detoxification of an endotoxin, and does not cause lesions and bacterial re-isolation, thereby exhibiting significantly improved safety compared to the existing fowl typhoid vaccines. In addition, since the vaccine composition induces a high-level immune response even when administered to young chicks, it may be used regardless of age, and as the vaccine strain may be used as a live vaccine having an excellent protective capability by itself, the vaccine composition may be useful for preventing and alleviating fowl typhoid.

6.20220378900A NOVEL VACCINE AGAINST HEAMOPHILUS PARASUIS
US - 01.12.2022
Clasificación Internacional A61K 39/102 Nº de solicitud 17775428 Solicitante Intervet Inc. Inventor/a Antonius Arnoldus Christiaan Jacobs
The invention pertains to a protein having at least 69% sequence identity with the protein according to SEQ ID No: 1 or an immunogenic fragment of this protein, for use in a prophylactic method to protect a pig against an infection with *Haemophilus parasuis* by administering a vaccine to the pig, the vaccine comprising the protein or the immunogenic fragment thereof as an antigen. The invention also pertains to a vaccine, a method to manufacture such a vaccine and a method to protect a pig against *H. parasuis.*

7.20220378899A NOVEL VACCINE AGAINST HEAMOPHILUS PARASUIS
US - 01.12.2022
Clasificación Internacional A61K 39/102 Nº de solicitud 17775425 Solicitante Intervet Inc. Inventor/a Antonius Arnoldus Christiaan Jacobs
The invention pertains to a protein having at least 69% sequence identity with the protein according to SEQ ID No: 1 or an immunogenic fragment of this protein, for use in a prophylactic method to protect a pig against an infection with *Haemophilus parasuis* serotype 4 and an infection with *Haemophilus parasuis* serotype 5, by administering a vaccine to the pig, the vaccine comprising the protein or the immunogenic fragment thereof as an antigen. The invention also pertains to a vaccine, a method to manufacture such a vaccine and a method to protect a pig against *H. parasuis.*

8.WO/2022/253193APPLICATION OF NOVEL CORONAVIRUS VACCINE PEPTIDE AND NANOEMULSION PREPARATION THEREOF IN PREVENTION OF NOVEL CORONAVIRUS WILD AND MUTANT STRAINS
WO - 08.12.2022
Clasificación Internacional C07K 14/165 Nº de solicitud PCT/CN2022/096047 Solicitante SHANGHAI INSTITUTE OF MATERIA MEDICA, CHINESE ACADEMY OF SCIENCES Inventor/a GONG, Likun
Disclosed are an application of a coronavirus SARS-CoV-2 vaccine polypeptide, a polypeptide composition and a nanoemulsion preparation thereof in the prevention of coronavirus SARS-CoV-2 wild and mutant strain infections. Specifically, provided is a coronavirus SARS-CoV-2 vaccine polypeptide having an amino acid sequence derived from an S protein of SARS-CoV-2 wild and mutant strains, the vaccine polypeptide can enable the body to generate high-level and durable humoral immune responses against SARS-CoV-2 and to produce high titers of RBD-binding antibodies and neutralizing antibodies that block the binding of RBD to ACE2. The vaccine polypeptide can be used to prevent infections of SARS-CoV-2 wild strain and B.1.1.7, B.1.351, B.1.617, B.1.1.529 and other mutant strains.

9.202141021918ADJUVANTED INACTIVATED RECOMBINANT RABIES VIRUS VECTORED CORONAVIRUS VACCINE FORMULATIONS

IN - 02.12.2022
Clasificación Internacional A61K / Nº de solicitud 202141021918 Solicitante BHARAT BIOTECH INTERNATIONAL LIMITED Inventor/a VADREVU, Krishna Mohan
The invention discloses an adjuvanted inactivated recombinant rabies virus vectored coronavirus vaccine formulation comprising SEPIVAC SWE or MemVax as adjuvant/s. The invention provides vaccine compositions, formulation 1 comprising combination of inactivated recombinant rabies virus vectored antigen and SEPIVAC SWE as an adjuvant and formulation 2 comprising combination of inactivated recombinant rabies virus vectored antigen and MemVax as an adjuvant. The said adjuvanted inactivated recombinant rabies virus vectored (rDNA-CoroRab) vaccine formulation prepared using SEPIVAC SWE or MemVax induces robust humoral, and cell mediated responses against SARS-CoV-2 compared to antigen alone and provides long term immunity.

10.WO/2022/254459ADJUVANTED INACTIVATED RECOMBINANT RABIES VIRUS VECTORED CORONAVIRUS VACCINE FORMULATIONS
WO - 08.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/IN2022/050504 Solicitante BHARAT BIOTECH INTERNATIONAL LIMITED Inventor/a VADREVU, Krishna Mohan
The invention discloses an adjuvanted inactivated recombinant rabies virus vectored coronavirus vaccine formulation comprising SEPIVAC SWE or MemVax as adjuvant/s. The invention provides vaccine compositions, formulation 1 comprising combination of inactivated recombinant rabies virus vectored antigen and SEPIVAC SWE as an adjuvant and formulation 2 comprising combination of inactivated recombinant rabies virus vectored antigen and MemVax as an adjuvant. The said adjuvanted inactivated recombinant rabies virus vectored (rDNA-CoroRab) vaccine formulation prepared using SEPIVAC SWE or MemVax induces robust humoral, and cell mediated responses against SARS-CoV-2 compared to antigen alone and provides long term immunity.

11.20220378905COMPOSITE-TYPE NANO-VACCINE PARTICLE
US - 01.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17662969 Solicitante NEUCOLOGY BIOMEDICAL INC. Inventor/a CHUNG CHIN SUN
The present invention discloses a composite-type nano-vaccine particle, which comprises an active ingredient selected from spike RBD protein of COVID-19, two adjuvants as aluminium salt nanoparticle and synthetic oligonucleotides, and an amphiphilic alginate-based nanocarrier encapsulating the active ingredient and the two adjuvants. The composite-type nano-vaccine particle has a particle size ranging from 300 nm to 1400 nm in diameter.

12.WO/2022/249104METHODS OF PRODUCING TUMOR VACCINES AND USES THEREOF
WO - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/IB2022/054911 Solicitante BEYOND AIR, INC. Inventor/a AVNIEL, Amir
Methods of producing tumor vaccine and uses thereof are provided. Accordingly there is provided a method of producing a tumor vaccine, the method comprising ex-vivo exposing a tumor sample to gaseous nitric oxide (gNO); suspending said tumor sample in a medium or buffer subsequent to said exposing, so as obtain tumor cells in suspension; and titrating a pH of said suspension to 6-8. Also provided is provided a method of producing a tumor vaccine, the method comprising ex-vivo exposing a tumor sample to gaseous nitric oxide (gNO); and culturing said tumor sample in a medium comprising antibiotic at a concentration of at least 2 fold higher than the gold standard concentration for culturing primary cells of the same type as said tumor sample. Also provided are vaccines obtainable by the method and uses thereof.

13.WO/2022/250518VACCINE FOR PREVENTION OR TREATMENT OF VIRAL INFECTION
WO - 01.12.2022
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/KR2022/007697 Solicitante LEMONEX INC. Inventor/a WON, Cheol Hee
The present invention relates to a nucleic acid molecule of RBD-(L)n-X sequence (in the sequence, RBD is a sequence of at least partial region including the receptor binding domain of the spike protein, L is a linker sequence, n is 0 or 1, and X is the nucleotide sequence of SEQ ID NO: 1) and a viral vaccine composition containing the nucleic acid molecule. Preferably, the molecule can be used in a vaccine composition against various viral infections.

14.WO/2022/247743COMPOUNDS AND THEIR USE AS VACCINE ADJUVANTS
WO - 01.12.2022
Clasificación Internacional C07D 471/04 Nº de solicitud PCT/CN2022/094090 Solicitante FULGENT GENETICS, INC. Inventor/a LU, Lu
Provided herein are a series of compounds and their use as an adjuvant. Provided herein are the compounds, a composition comprising the compounds, and the use thereof. These compounds can be used as an adjuvant for a vaccine, and compared to the conventional aluminum adjuvant, the compounds can significantly improve the cellular and humoral immune responses to a vaccine. The compounds as an adjuvant can increase a broad-spectrum protection against various corona viruses such as SARS virus, influenza viruses, and HIV viruses, and significantly enhance persistence of immunoprotection of vaccines.

15.20220378893RECOMBINANT MPT PROTEIN DERIVED FROM MPT63 AND MPT64 AND USE THEREOF
US - 01.12.2022
Clasificación Internacional A61K 39/04 Nº de solicitud 17736708 Solicitante INDUSTRY-UNIVERSITY COOPERATION FOUNDATION HANYANG UNIVERSITY ERICA CAMPUS Inventor/a Chul-Su Yang
The present disclosure is the first to identify a host cell protein and its function with which MPT63 and MPT64, secreted antigens of *Mycobacterium tuberculosis*, interact, and to construct a recombinant MPT protein including each domain of MPT63 and MPT64 interacting with the host cell protein, and the recombinant MPT protein may be applied to a use for the prevention and treatment of tuberculosis by confirming that the recombinant MPT protein targets the *Mycobacterium tuberculosis*-infected macrophages and increases the ROS level and inflammatory cytokine expression in macrophages, thereby inducing the death of *Mycobacterium tuberculosis*. And MPT protein of the present disclosure can improve the vaccine effect by the BCG vaccine so that it can be used as a tuberculosis vaccine and/or vaccine adjuvant either alone or together with known tuberculosis vaccines.

16.20220378901APPLICATION OF PSEUDOMONAS AERUGINOSA VACCINE IN RESPIRATORY DISEASE
US - 01.12.2022
Clasificación Internacional A61K 39/104 Nº de solicitud 17637028 Solicitante Sichuan University Inventor/a Zhenling WANG
The present invention provides use of a *Pseudomonas aeruginosa* vaccine in the manufacture of a medicament for the prevention and treatment of respiratory system disease. The *Pseudomonas aeruginosa* vaccine of the present invention can effectively prevent and treat pulmonary infection caused by multidrug-resistant *Pseudomonas aeruginosa* and COPD complicated with *Pseudomonas aeruginosa* infection by activating the specific immune response of the body. The *Pseudomonas aeruginosa* vaccine of the present invention can reduce the bacterial load in the immunized subject through the established immunization procedures, thereby providing a technical solution that can effectively prevent pulmonary

infection with *Pseudomonas aeruginosa,* which avoids the technical problems caused by the use of antibiotics such as poor effectiveness, difficulty in curing and proneness to drug resistance in the prior art to a certain degree.

17.20220387516FIBROBLAST-DERIVED UNIVERSAL IMMUNOLOGICAL COMPOSITION
US - 08.12.2022
Clasificación Internacional A61K 35/33 Nº de solicitud 17755275 Solicitante FIGENE, LLC Inventor/a Pete O'HEERON
Described are means of generating immunological compositions that are universally applicable for induction of immunity to neoplasia regardless of histological origin of tissue. Certain methods concern fibroblasts that are manipulated or dedifferentiated in a manner to induce expression of tumor associated antigens including cancer testis antigens. These cells are used as a source of antigenic stimuli for creation of a cellular vaccine, and/or an exosome vaccine, and/or a lysate-based vaccine.

18.WO/2022/251293ASSIGNING PEPTIDES TO PEPTIDE GROUPS FOR VACCINE DEVELOPMENT
WO - 01.12.2022
Clasificación Internacional G16B 20/00 Nº de solicitud PCT/US2022/030826 Solicitante AMAZON TECHNOLOGIES, INC. Inventor/a PRICE, Layne Christopher
Techniques are described and relate to assigning peptides to peptide groups for vaccine development. In an example, a peptide property of a peptide is determined, where this peptide is from different peptides that are to be assigned to different groups of vaccine. A determination is also made that the peptide is to be assigned to a first group from the different groups based at least in part on the peptide property. The first group has a first group property that is based at least in part on peptide properties of first peptides to be assigned to the first group. The first group property is within a similarity range relative to a second group property of a second group from the different groups. Information is generated and indicates that the peptide is assigned to the first group.

19.20220383996ASSIGNING PEPTIDES TO PEPTIDE GROUPS FOR VACCINE DEVELOPMENT
US - 01.12.2022
Clasificación Internacional G16H 10/60 Nº de solicitud 17332719 Solicitante Amazon Technologies, Inc. Inventor/a Layne Christopher Price
Techniques are described and relate to assigning peptides to peptide groups for vaccine development. In an example, a peptide property of a peptide is determined, where this peptide is from different peptides that are to be assigned to different groups of vaccine. A determination is also made that the peptide is to be assigned to a first group from the different groups based at least in part on the peptide property. The first group has a first group property that is based at least in part on peptide properties of first peptides to be assigned to the first group. The first group property is within a similarity range relative to a second group property of a second group from the different groups. Information is generated and indicates that the peptide is assigned to the first group.

20.WO/2022/256310PROTECTIVE VACCINE ANTIGEN AGAINST STREPTOCOCCAL INFECTION
WO - 08.12.2022
Clasificación Internacional A61K 39/02 Nº de solicitud PCT/US2022/031571 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a GONZALEZ, David J.
Group A Streptococcus (GAS) is associated with an estimated half-million deaths per year and 21 severe autoimmune sequelae. Despite the ubiquity of GAS infection, no vaccine currently exists. Provided herein is a Streptococcus S protein or an equivalent thereof used as a vaccine, along with the related compositions and methods.

21.WO/2022/256188METHODS AND COMPOSITION FOR INDUCING AN IMMUNE RESPONSE BY A RECOMBINANT VACCINIA VIRUS

WO - 08.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/030297 Solicitante UNIVERSITY OF ROCHESTER Inventor/a WARD, Brian, M.
A method for inducing an immune response to an antigen in a subject is disclosed. The method comprises the step of administering to the subject an effective amount of a recombinant vaccinia virus in which the coding sequence for the extracellular virion protein F13 has been replaced with the coding sequence for MC021, a molluscum contagiosum virus homolog of F13, wherein the recombinant vaccinia virus comprises a nucleic acid encoding an immunogenic epitope of the antigen.

22.20220378910METHODS OF INDUCING NEOEPITOPE-SPECIFIC T CELLS WITH A PD-1 AXIS BINDING ANTAGONIST AND AN RNA VACCINE
US - 01.12.2022
Clasificación Internacional A61K 39/395 Nº de solicitud 17854649 Solicitante Genentech, Inc. Inventor/a Lars MUELLER
The present disclosure provides methods for inducing neoepitope-specific CD8+ T cells in an individual or for inducing trafficking of neoepitope-specific CD8+ T cells to a tumor in an individual using an RNA vaccine or using an RNA vaccine in combination with a PD-1 axis binding antagonist. Also provided herein are PD-1 axis binding antagonists and RNA vaccines that include one or more polynucleotides encoding one or more neoepitopes resulting from cancer-specific somatic mutations present in a tumor specimen obtained from the individual for use in methods of inducing neoepitope-specific CD8+ T cells in an individual or for inducing trafficking of neoepitope-specific CD8+ T cells to a tumor in an individual.

23.20220378896VACCINE COMPOSITIONS AND METHODS FOR REDUCING TRANSMISSION OF STREPTOCOCCUS PNEUMONIAE
US - 01.12.2022
Clasificación Internacional A61K 39/09 Nº de solicitud 17602414 Solicitante St. Jude Children's Research Hospital Inventor/a Jason W. Rosch
Compositions and methods are provided for reducing the mammalian transmission of *Streptococcus pneumoniae* (*S. pneumoniae*) through the administration to mammalian subjects of vaccine compositions comprising at least one immunogenic polypeptide comprising a *S. pneumoniae* protein or a fragment or variant thereof that is required for or involved in transmission of the bacteria between mammalian hosts. These vaccine compositions also serve to reduce the incidence rate of at least one invasive disease caused by *S. pneumoniae*. Methods are also provided for identifying additional genetic factors involved in mammalian transmission of *S. pneumoniae.*

24.WO/2022/253134METHOD FOR IMPROVING IMMUNOGENICITY/ANTIGENIC TRIMER STABILITY OF ECD ANTIGEN OF SARS-COV-2 MUTANT STRAIN
WO - 08.12.2022
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2022/095609 Solicitante SINOCELLTECH LTD Inventor/a XIE, Liangzhi
The present invention relates to the field of molecular vaccinology, and provides a method for improving the immunogenicity/antigenic trimer stability of an extracellular domain (ECD) antigen of a SARS-CoV-2 mutant strain, and an ECD immunogenic protein/peptide, having improved immunogenicity/antigenic trimer stability, of the SARS-CoV-2 mutant strain. The present invention comprises, but is not limited to, an ECD of a spike protein (S protein) of a SARS-CoV-2 strain, a B.1 strain, a B.1.1.7 strain or a B.1.351 strain having a genome sequence number of GenBank Accession No. MN908947.3; by introducing a homotrimer formed by a mutation site and a trimerization-assisted structure, the immunogenicity/antigenic trimer stability of the ECD antigen is improved. A vaccine further comprises a pharmaceutically acceptable adjuvant. A vaccine composition exhibits excellent immunogenicity in mice and Macaca

fascicularis, and can maintain long-term humoral and cellular immune responses. A recombinant trimer protein vaccine can be used for preventing diseases related to SARS-CoV-2 infections.

25.20220387581ORAL ADMINISTRATION OF CORONAVIRUS SPIKE PROTEIN FOR ALTERING CYTOKINE LEVELS AND PROVIDING PASSIVE IMMUNITY TO NEWBORN PIGS
US - 08.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud 17805396 Solicitante MAZEN ANIMAL HEALTH INC. Inventor/a John Howard
Plants and plant produced compositions which include Coronavirus S proteins are disclosed. These may be used as vaccines, boosters or immune modulators. The compositions have been shown to reduce the inflammatory cytokine response by altering cytokine levels when administered to an animal. The compositions may be used as an immune modulator to reduce/ameliorate or prevent the cytokine storm often associated with Coronavirus or other virus infection. The compositions may also be used to produce additive protection when administered with any vaccine composition to increase vaccine effectiveness. The compositions when used as vaccines have been shown to protect newborn animals through passive immunity.

26.WO/2022/251406COMBINED AGONIST ADJUVANT FOR CORONAVIRUS VACCINE
WO - 01.12.2022
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/031002 Solicitante THE REGENTS OF THE UNIVERSITY OF MICHIGAN Inventor/a WONG, Pamela
The disclosure is directed to compositions and methods for inducing an immune response against a coronavirus, which involve a coronavirus vaccine and an adjuvant composition. The adjuvant composition comprises a nanoemulsion, an agonist of retinoic acid-inducible gene I (RIG-I), and/or an agonist of a toll-like receptor.

27.20220387584MEVALONATE PATHWAY INHIBITOR AS HIGHLY-EFFICIENT VACCINE ADJUVANT
US - 08.12.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17664134 Solicitante Tsinghua University Inventor/a Yonghui Zhang
Disclosed are inhibitors of mevalonate pathway as an efficient vaccine adjuvant and use thereof. In particular, the inhibitor is an acetoacetyl-CoA transferase inhibitor, a HMG-CoA synthase inhibitor, a HMG-CoA reductase inhibitor, a mevalonate kinase inhibitor, a phosphomevalonate kinase inhibitor, a mevalonate-5-pyrophosphate decarboxylase inhibitor, an isopentenyl pyrophosphate isomerase inhibitor, a farnesyl pyrophosphate synthase inhibitor, a geranylgeranyl pyrophosphate synthase inhibitor or a geranylgeranyl transferase (I, II) inhibitor. Also disclosed is an immunogenic composition comprising inhibitors of mevalonate pathway as an adjutant.

28.WO/2022/256695ORAL ADMINISTRATION OF CORONAVIRUS SPIKE PROTEIN FOR ALTERING CYTOKINE LEVELS AND PROVIDING PASSIVE IMMUNITY TO NEWBORN PIGS
WO - 08.12.2022
Clasificación Internacional A61K 38/16 Nº de solicitud PCT/US2022/032227 Solicitante MAZEN ANIMAL HEALTH INC. Inventor/a HOWARD, John
Plants and plant produced compositions which include Coronavirus S proteins are disclosed. These may be used as vaccines, boosters or immune modulators. The compositions have been shown to reduce the inflammatory cytokine response by altering cytokine levels when administered to an animal. The compositions may be used as an immune modulator to reduce/ameliorate or prevent the cytokine storm often associated with Coronavirus or other virus infection. The compositions may also be used to produce additive protection when administered with any vaccine composition to increase vaccine effectiveness.

The compositions when used as vaccines have been shown to protect newborn animals through passive immunity.

29.20220378904HMPV MRNA VACCINE COMPOSITION
US - 01.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 17737581 Solicitante ModernaTX, Inc. Inventor/a Lori Panther
Provided herein are vaccine composition comprising a chemically-modified messenger ribonucleic acid (mRNA) encoding a hMPV fusion (F) glycoprotein and a chemically-modified mRNA encoding a hPIV3 F glycoprotein formulated in a cationic lipid nanoparticle formulation, and related method for inducing an antigen-specific immune response.

30.20220380425ANGPTL3 BASED VACCINE FOR THE TREATMENT OF LIVER DISEASE
US - 01.12.2022
Clasificación Internacional C07K 14/515 Nº de solicitud 17624114 Solicitante CADILA HEALTHCARE LIMITED Inventor/a Mukul JAIN
The present invention relates to a vaccine capable to induce the formation of antibodies directed to angiopoietin-like 3 in vivo. More specifically, the present invention relates to a use of a vaccines which are able to influence the angiopoietin-like 3 mediated immune response for the treatment of liver diseases such as non-alcoholic steatohepatitis and non-alcoholic fatty liver disease and hyperlipidaemia, hypercholesterolemia, or atherosclerosis including the complications lead to the cardiovascular diseases (CVD) which causes morbidity and mortality.

31.202217040419CORONAVIRUS VACCINE
IN - 02.12.2022
Clasificación Internacional A61K / Nº de solicitud 202217040419 Solicitante CUREVAC AG Inventor/a RAUCH, Susanne
The present invention is directed to a nucleic acid suitable for use in treatment or prophylaxis of an infection with a coronavirus, preferably with a Coronavirus SARS-CoV-2, or a disorder related to such an infection, preferably COVID-19. The present invention is also directed to compositions, polypeptides, and vaccines. The compositions and vaccines preferably comprise at least one of said nucleic acid sequences, preferably nucleic acid sequences in association a lipid nanoparticle (LNP). The invention is also directed to first and second medical uses of the nucleic acid, the composition, the polypeptide, the combination, the vaccine, and the kit, and to methods of treating or preventing a coronavirus infection, preferably a Coronavirus infection.

32.202227059757A VACCINE AGAINST SARS-COV-2 AND PREPARATION THEREOF
IN - 02.12.2022
Clasificación Internacional A61K / Nº de solicitud 202227059757 Solicitante ZYDUS LIFESCIENCES LIMITED 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.

33.20220380410Live Attenuated Universal Influenza Virus Vaccines, Methods and Uses Thereof
US - 01.12.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17616137 Solicitante Pentavalent Bio Sciences Pvt Ltd Inventor/a Bhavani Venkataswamachari Peddayelachagiri

The present invention provides a modified influenza viruses comprising haemagglutinin and a headless haemagglutinin. The haemagglutinin is provided by a source exogenous to the virus and the headless haemagglutinin is encoded by the viral genome. The present disclosure also provides modified influenza viruses comprising a headless haemagglutinin. The present disclosure also provides vaccine compositions comprising the modified influenza viruses. The vaccine compositions of the present disclosure can elicit broad neutralizing antibodies and provide cross-protection across various influenza strains. Methods, compositions and cells for propagating the modified influenza viral strains related to vaccines is also provided.

34.20220387580VACCINE FOR USE IN THE PROPHYLAXIS AND/OR TREATMENT OF A DISEASE
US - 08.12.2022
Clasificación Internacional A61K 39/21 Nº de solicitud 17732127 Solicitante INPROTHER APS Inventor/a Peter HOLST
The present invention relates to an adenoviral vector capable of encoding a virus-like particle (VLP), said VLP displaying an inactive immune-suppressive domain (ISD). The vaccine of the invention shows an improved immune response from either of both of the response pathways initiated by CD4 T cells or CD8 T cells.

35.WO/2022/256360TUMOR CELL VACCINES
WO - 08.12.2022
Clasificación Internacional A61P 35/00 Nº de solicitud PCT/US2022/031697 Solicitante NEUVOGEN, INC. Inventor/a FERRARO, Bernadette
The present disclosure provides an allogeneic whole cell cancer vaccine platform that includes compositions and methods for treating and preventing cancer. Provided herein are compositions containing a therapeutically effective amount of cells from one or more cancer cell lines, some or all of which are modified to (i) inhibit or reduce expression of one or more immunosuppressive factors by the cells, and/or (ii) express or increase expression of one or more immunostimulatory factors by the cells, and/or (iii) express or increase expression of one or more tumor-associated antigens (TAAs), including TAAs that have been mutated, and which comprise cancer cell lines that natively express a heterogeneity of tumor associated antigens and/or neoantigens, and/or (iv) express one or more tumor fitness advantage mutations, including but not limited to acquired tyrosine kinase inhibitor (TKI) resistance mutations, EGFR activating mutations, and/or (v) express modified ALK intracellular domain(s), and/or express one or more driver mutations. Also provided herein are methods of making and preparing the vaccine compositions and methods of use thereof.

36.WO/2022/251101COMPOSITIONS AND METHODS RELATED TO SURGE-ASSOCIATED SARS-COV-2 MUTANTS
WO - 01.12.2022
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/030511 Solicitante NFERENCE, INC. Inventor/a SOUNDARARAJAN, Venkataramanan
Compositions for use as a vaccine against SARS-CoV-2 infection are disclosed, which comprise either a polypeptide that comprises at least one surge-associated mutation (e.g., deletion) in its amino acid sequence or a nucleic acid (e.g., mRNA) that encodes said polypeptide. Also disclosed are formulations that include these compositions, antibodies or their antigen-biding fragments directed to these polypeptides, methods of making such antibodies, methods of vaccinating subjects against SARS-CoV-2 infection, and methods of selecting an antibody, convalescent plasma, or vaccine against SARS-CoV-2 infection.

37.20220378898Attenuated Bordetella Strains
US - 01.12.2022

Clasificación Internacional A61K 39/02 Nº de solicitud 17650487 Solicitante Institut Pasteur de Lille Inventor/a Camille Locht
A mutated *Bordetella* strain comprising at least a mutated ptx gene, a deleted or mutated dnt gene and a heterologous ampG gene is provided. The attenuated mutated *Bordetella* strain can be used in an immunogenic composition or a vaccine for the treatment or prevention of a *Bordetella* infection. Use of the attenuated *Bordetella* strain for the manufacture of a vaccine or immunogenic composition, as well as methods for protecting mammals against infection by *Bordetella* are also provided.

38.202217040433MULTIVALENT HVT VECTOR VACCINE
IN - 02.12.2022
Clasificación Internacional C07K / Nº de solicitud 202217040433 Solicitante INTERVET INTERNATIONAL B.V. Inventor/a LANGEREIS, Martijn, Alexander
The present invention describes a recombinant herpesvirus of turkeys (rHVT) that can be used as a vector vaccine for poultry against infection and disease from multiple poultry pathogens. Specifically the rHVT expresses an infectious bursal disease virus (IBDV) viral protein 2 (VP2) gene and a Newcastle disease virus (NDV) fusion (F) protein gene from a first and a second expression cassette inserted in the unique small (Us) region, and expresses an avian influenza virus (AIV) haemagglutinin (HA) gene from a third expression cassette inserted in the unique long (UL) region of the genome of said rHVT either between the UL40 and UL41 genes, or between the UL44 and UL45 genes. This rHVT can be used to vaccinate poultry against MDV, IBDV, NDV and AIV.

39.2022037883933-SUBSTITUTED PIPERIDINE COMPOUNDS FOR CBL-B INHIBITION, AND USE THEREOF
US - 01.12.2022
Clasificación Internacional A61K 35/17 Nº de solicitud 17864307 Solicitante Nurix Therapeutics, Inc. Inventor/a Arthur T. SANDS
Compounds, compositions, and methods for use in inhibiting the E3 enzyme Cbl-b in the ubiquitin proteasome pathway are disclosed. The compounds, compositions, and methods can be used to modulate the immune system, to treat diseases amenable to immune system modulation, and for treatment of cells in vivo, in vitro, or ex vivo. Also disclosed are pharmaceutical compositions comprising a Cbl-b inhibitor and a cancer vaccine, as well as methods for treating cancer using a Cbl-b inhibitor and a cancer vaccine; and pharmaceutical compositions comprising a Cbl-b inhibitor and an oncolytic virus, as well as methods for treating cancer using a Cbl-b inhibitor and an oncolytic virus.

40.202248065431VACCINE AGAINST ACINETOBACTER BAUMANNII BASED ON CELLULAR COMPONENTS DEFICIENT IN LIPOPOLYSACCHARIDE
IN - 02.12.2022
Clasificación Internacional A61K / Nº de solicitud 202248065431 Solicitante VAXDYN S.L Inventor/a MCCONNELL, Michael James
The invention refers to a composition comprising inactivated cells deficient in LPS fromthe genus Acinetobacter and/or outer membrane vesicles form the same and their usefor the manufacture of a medicament preferably a vaccine for the prevention of diseasesproduced by organisms of the genus Acinetobacter.

41.202203789O2BACTERIAL MEMBRANE VESICLES, AND SEPARATION AND PREPARATION SYSTEM AND METHOD THEREFOR
US - 01.12.2022
Clasificación Internacional A61K 39/104 Nº de solicitud 17637051 Solicitante Sichuan University Inventor/a Zhenling WANG

The present invention belongs to the field of microbiology, and particularly relates to membrane vesicles (MVs) isolated from bacteria, and an isolation and preparation system and method for the membrane vesicles, and applications of the membrane vesicles. The bacteria of the present invention comprise Gram-positive bacteria and Gram-negative bacteria. The invention uses ionizing irradiation to irradiate bacteria, and isolates and purifies the produced membrane vesicles. The membrane vesicles prepared can be used as a vaccine, a vaccine adjuvant and/or a pharmaceutical carrier. In addition, the present invention provides a biological composition comprising the membrane vesicles and inactivated bacteria. In addition, the present invention also provides a preparation system, and isolation and purification system for bacterial membrane vesicles and the corresponding method. The membrane vesicles obtained by using the system and method have high yield, high purity and easy to be industrialized.

42.297414CORONAVIRUS VACCINE
IL - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 297414 Solicitante PFIZER INC. Inventor/a

43.20220387614DOSAGE AND ADMINISTRATION OF A BACTERIAL SACCHARIDE GLYCOCONJUGATE VACCINE
US - 08.12.2022
Clasificación Internacional A61K 47/64 Nº de solicitud 17773637 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a Roberto ADAMO
The present invention provides a glycoconjugate for administration to a subject in a method comprising the steps of: (i) administering a first dose of glycoconjugate; (ii) subsequently administering a second dose of glycoconjugate; wherein the amount of glycoconjugate in the first dose or first and second doses are atypically low, and also related aspects.

44.WO/2022/250416IMMUNO-ONCOLOGY THERAPEUTIC COMPOSITION USING ADJUVANT INCLUDING LIPOPEPTIDES AND POLY (I:C)
WO - 01.12.2022
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/KR2022/007348 Solicitante CHA VACCINE RESEARCH INSTITUTE CO., LTD Inventor/a YUM, Jung Sun
An immuno-oncology therapeutic composition containing, as an active ingredient, an adjuvant including lipopeptides and poly (I:C) provided in one aspect of the present invention can induce a large therapeutic effect on a variety of carcinomas, and can be effectively used for anticancer therapy by significantly enhancing anticancer effects through combined administration with conventional anticancer drugs, such as chemical anticancer drugs, anticancer vaccines, and immune checkpoint inhibitors, having different mechanisms.

45.20220389391F-GENOTYPE MUMPS VIRUS ATTENUATED STRAIN AND CONSTRUCTION METHOD THEREFOR AND APPLICATION THEREOF
US - 08.12.2022
Clasificación Internacional C12N 7/00 Nº de solicitud 17755663 Solicitante SHANGHAI KING-CELL BIOTECHNOLOGY CO. LTD. Inventor/a Dayong TIAN
Provided are an F-genotype mumps virus attenuated strain, a construction method therefor and an application thereof. The attenuated strain is a mumps virus with the accession number of CCTCC NO: V201950. Further provided are a vaccine composition containing the F-genotype mumps virus attenuated strain as an active ingredient and a preparation method thereof.

46.20220387461CANCER VACCINE
US - 08.12.2022
Clasificación Internacional A61K 31/7004 Nº de solicitud 17640395 Solicitante VICTORIA LINK LTD Inventor/a Ian Francis HERMANS

The invention relates to a combination of a TLR-9 agonist and a conjugate of Formula (I) or pharmaceutically acceptable salt thereof. (Formula (I))

47.297419CORONAVIRUS VACCINE
IL - 01.12.2022
Clasificación Internacional A61K 31/7088 Nº de solicitud 297419 Solicitante BIONTECH SE Inventor/a

48.WO/2022/253260DETECTION KIT FOR NEUTRALIZING ANTIBODY FOR NOVEL CORONAVIRUS AND MUTANT STRAIN THEREOF
WO - 08.12.2022
Clasificación Internacional G01N 33/68 Nº de solicitud PCT/CN2022/096541 Solicitante NANJING GENSCRIPT BIOTECH CO., LTD. Inventor/a QIN, Xijian
A kit for detecting an antibody for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and/or a mutant strain thereof, and the use of the kit in sample detection and evaluation. Specifically, the joint detection kit for a neutralizing antibody for the novel coronavirus and a mutant strain thereof can detect the levels of neutralizing antibodies for different novel coronavirus strains in the same sample, the effectiveness of a vaccine or antibody drug on the treatment and prevention for different virus strains can be analyzed on the basis of differences obtained by comparing detected values of the different neutralizing antibodies for the novel coronavirus, and an infection source of the infected population can also be analyzed in an assisted manner.

49.20220378887TUMOR IMMUNOTHERAPY POLYPEPTIDE AND APPLICATION THEREOF
US - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17774872 Solicitante GENOIMMUNE THERAPEUTICS CO., LTD. Inventor/a Si QIU
Provided are a polypeptide for tumor immunotherapy and use thereof. The polypeptide includes at least one polypeptide in a first peptide group, and optionally, at least one polypeptide in a second peptide group, the first peptide group includes polypeptides having amino acid sequences set forth in SEQ ID NO: 1 to SEQ ID NO: 6, and first derivative peptides thereof, and the second peptide group includes polypeptides having amino acid sequences set forth in SEQ ID NO: 7 to SEQ ID NO: 15, and second derivative peptides thereof. Further provided are an isolated nucleic acid, a construct, an expression vector, a host cell, a pharmaceutical composition, an antigen-presenting cell, an immune effector cell, a tumor vaccine, use of the polypeptide in the preparation of drugs for preventing or treating tumors, and a method for treating a patient suffering from tumors.

50.20220378911Use of Triplex CMV Vaccine in CAR T Cell Therapy
US - 01.12.2022
Clasificación Internacional A61K 39/395 Nº de solicitud 17572496 Solicitante City of Hope Inventor/a Don J. Diamond
A method for treating a patient comprising: (a) providing a composition comprising a population of T cells expressing both a chimeric antigen receptor (CAR) and a T cell receptor specific for a cytomegalovirus (CMV) antigen; (b) administering the composition to the patient; and (c) administering to the patient a viral vector encoding: (i) CMV pp65 and (ii) a fusion protein comprising exon 4 of CMV protein IE1 (e4) and exon 5 of CMV protein 1E2 (e5) either prior to or subsequent to administering the composition comprising a population of T cells to the patient is described.

51.3371315PHAGEMIDVEKTOR
DK - 05.12.2022
Clasificación Internacional C12N 15/86 Nº de solicitud 16790687 Solicitante Imperial College Innovations Limited Inventor/a ASAVARUT, Paladd

The invention provides hybrid and recombinant phagemid vectors for expressing a transgene in a target cell transduced with the vector. A recombinant phagemid particle comprises at least one transgene expression cassette which encodes an agent which exerts a biological effect on the target cell, characterised in that the phagemid particle comprises a genome which lacks at least 50% of its bacteriophage genome. The invention extends to the use of such phagemid expression systems as a research tool, and for the delivery of transgenes in a variety of gene therapy applications, DNA and/or peptide vaccine delivery and imaging techniques. The invention extends to in vitro, in vivo or in situ methods for producing viral vectors, such as recombinant adeno- associated viruses (rAAV) or lentivirus vectors (rLV), and to genetic constructs used in such methods.

52.WO/2022/254209STABLE COMPOSITION
WO - 08.12.2022
Clasificación Internacional A61K 9/51 Nº de solicitud PCT/GB2022/051392 Solicitante IMPERIAL COLLEGE INNOVATIONS LIMITED Inventor/a SHMOOL, Talia Amira
The present invention relates to a composition comprising at least one payload molecule and an ionic liquid (IL). The present invention is characterised in that the composition further comprises at least one of a solvent; an excipient matrix; and/or a delivery vehicle. The invention extends to a method of producing the composition, a pharmaceutical composition or a vaccine comprising the composition, and medical uses thereof.

53.20220387567COMPOSITIONS AND METHODS FOR TREATING DISEASES AND DISORDERS ASSOCIATED WITH ABERRANT REGULATION OF PROTEINS
US - 08.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17441662 Solicitante University of Virginia Patent Foundation Inventor/a Donald F. Hunt
Compositions that include anti-cancer, anti-tumor, and anti-microbial infection peptides are provided. In some embodiments, the compositions include 1-10 or more synthetic peptides that are between 8 and 50 amino acids long and include an amino acid sequence as disclosed herein. Also provided are in vitro populations of dendritic cells that include the compositions, in vitro populations of T cells capable of being activated uponbeing brought into contact with the populations of dendritic cells, antibodies and antibody-like molecules that specifically bind to complexes of an MHC class I molecule and the peptides, methods for using the disclosed compositions for treating and/or preventing cancer and/or microbial infections, methods for making cancer vaccines and anti-microbial vaccine, methods for screening peptides for inclusion in immunotherapy compositions, methods for determining a prognosis of a patient with a cancer and/or a microbial infection, kits that include the disclosed peptides, and methods for treating and/or preventing diseases, disorders, and/or conditions associated with hyperphosphorylation of MHC I peptides and/or MHC II peptides, inadequate PP2A activity, and/or undesirable CIP2A activity.

54.20220387579VACCINE COMPOSITIONS HAVING IMPROVED STABILITY AND IMMUNOGENICITY
US - 08.12.2022
Clasificación Internacional A61K 39/155 Nº de solicitud 17750612 Solicitante Novavax, Inc. Inventor/a Gale SMITH
Disclosed herein are nanoparticles 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.

55.20220387573COMBINATION THERAPY
US - 08.12.2022

Clasificación Internacional A61K 39/00 Nº de solicitud 17620271 Solicitante ETHERNA IMMUNOTHERAPIES NV Inventor/a Marina Cools
The present invention in general relates to combinations of mRNA molecules encoding CD40, caTLR4 and CD70 with mRNA molecules encoding tumor-associated antigens for use as therapeutic vaccine in the treatment of metastatic cancer patients primarily with stable malignant melanoma disease, but also extending into other cancer types and to patient whose disease has shown partial response on prior therapy. Said uses may further encompass the administration of checkpoint inhibitors. The present invention further provides administration schemes for such therapies focusing on administration of the therapeutic into lymph nodes, so called intra-nodal therapy.

56.WO/2022/247817NUCLEIC ACID-POLYPEPTIDE NANO-PHARMACEUTICAL COMPOSITION FOR TREATING AND PREVENTING HUMAN PAPILLOMA VIRUS INFECTION
WO - 01.12.2022
Clasificación Internacional A61K 47/55 Nº de solicitud PCT/CN2022/094631 Solicitante SIRNAOMICS, INC. Inventor/a LU, Alan
Disclosed is a nucleic acid-polypeptide nano-pharmaceutical composition for treating and preventing human papilloma virus infection. A small interfering nucleic acid siRNA molecule used for inhibiting and treating various diseases caused by a HPV infection can block the virus replication life cycle by means of targeted inhibition of the expression of the HP16/18 key gene, reduce a viral infection and finally remove viruses. A pharmaceutical composition based on the siRNA molecule comprises a siRNA molecule and another molecule, specifically a siRNA molecule for inhibiting PD-1/PD-L1, a small molecule compound against a HPV infection, a therapeutic mRNA/neoantigen vaccine, etc. The siRNA molecule and other anti-HPV drugs are coupled by means of a specific chemical bond to form a new coupled molecule, and the composition further comprises a pharmaceutically acceptable polypeptide polymer nano-introduction carrier, and the carrier is preferably a histidine-lysine polypeptide polymer nanocarrier.

57.297070CORONAVIRUS VACCINE
IL - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 297070 Solicitante PEPTC VACCINES LIMITED Inventor/a

58.20220387578PEPTIDE VACCINE BASED ON A NEW UNIVERSAL INFLUENZA A HEMAGGLUTININ HEAD DOMAIN EPITOPE AND HUMAN MONOCLONAL ANTIBODIES BINDING THERETO
US - 08.12.2022
Clasificación Internacional A61K 39/145 Nº de solicitud 17611564 Solicitante VANDERBILT UNIVERSITY Inventor/a James E. CROWE, Jr.
The present disclosure is directed to peptide antigens derived from a previously undefined epitope on influenza A virus hemagglutinin and methods for use thereof.

59.20220389068NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LUNG CANCER, INCLUDING NSCLC, SCLC AND OTHER CANCERS
US - 08.12.2022
Clasificación Internacional C07K 14/47 Nº de solicitud 17871615 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG
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.

60.WO/2022/251034MULTICOMPONENT CHEMICAL COMPOSITION OF A PEPTIDE-BASED NEOANTIGEN VACCINE
WO - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/US2022/030037 Solicitante AMAZON TECHNOLOGIES, INC. Inventor/a SCHMITZ, Frank Wilhelm
Provided herein are immunogenic compositions comprising tumor-specific neoantigen long peptides, tumor-specific neoantigen short peptides, and adjuvant, optionally a helper peptide, and optionally a tumor-specific peptide. The disclosure also provides methods of using these immunogenic compositions for treating cancer.

61.20220389388AVIAN ENTEROIDS
US - 08.12.2022
Clasificación Internacional C12N 5/071 Nº de solicitud 17624428 Solicitante THE UNVIVERSITY COURT OF THE UNIVERSITY OF EDINBURGH Inventor/a Apolonia VERVELDE
There is provided an in vitro three dimensional cell construct for use as a model of the avian intestine derived from avian intestinal tissue comprising avian cells organised into intestinal villi and crypts. Suitably the construct comprises an exterior surface that mimics the apical surface of a chicken intestine. Also provided are methods of making the cell construct and use of the construct as an in vitro intestinal model system to examine an agent including, but not limited to a microbe, a vaccine, a pharmaceutical, a feed additive, a toxin, a pre-biotic, post-biotic, pre pro post biotic, therapeutic, a cell, gene construct, protein, immune-modulator, an intestinal effector agent, a candidate intestinal effector agent, cell signalling inhibitor, or cell signalling activator.

62.WO/2022/246526RECOMBINANT CHIMERIC PROTEIN, USE THEREOF, AND COMPOSITION
WO - 01.12.2022
Clasificación Internacional C07K 14/44 Nº de solicitud PCT/BR2022/050150 Solicitante FUNDAÇÃO OSWALDO CRUZ Inventor/a GAZZINELLI, Ricardo, Tostes
The present invention relates to a recombinant chimeric protein containing immunogenic regions from the trans-sialidase (TS) protein and amastigote surface protein-2 (ASP-2) from Trypanosoma cruzi and a composition containing said protein that displayed vaccine potential in a murine model. The invention also comprises the use of the chimeric protein for manufacturing vaccines.

63.20220387566PEPTIDES AND T CELLS FOR USE IN IMMUNOTHERAPEUTIC TREATMENT OF VARIOUS CANCERS
US - 08.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17358806 Solicitante Immatics Biotechnologies GmbH Inventor/a Andrea MAHR
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

64.297736HUMAN CYTOMEGALOVIRUS POLYEPITOPE VACCINE COMPOSITION
IL - 01.12.2022

Clasificación Internacional A61K 31/711 Nº de solicitud 297736 Solicitante THE COUNCIL OF THE QUEENSLAND INSTITUTE OF MEDICAL RESEARCH Inventor/a RAJIV KHANNA

65.WO/2022/256427MINICELLS FROM HIGHLY GENOME REDUCED ESCHERICHIA COLI: CYTOPLASMIC AND SURFACE EXPRESSION OF RECOMBINANT PROTEINS AND INCORPORATION IN THE MINICELLS
WO - 08.12.2022
Clasificación Internacional C12N 1/20 Nº de solicitud PCT/US2022/031807 Solicitante UNIVERSITY OF VIRGINIA PATENT FOUNDATION Inventor/a ZEICHNER, Steven, L.
Provided are bacterial minicells derived from genome reduced (GR) having a reduced number of expressed genes and/or is a bacterium having one or more mutated min genes. In some embodiments, the minicell has a recombinant protein present in and/or on the surface of the minicell. In some embodiments, the recombinant protein is an antigen and in some embodiments, the minicell induces an enhanced immune response against the antigen when administered to a subject. In some embodiments, the bacterium has an autotransporter (AT) expression vector encoding the recombinant protein to express the recombinant protein on the surface of the bacterium and/or the minicell derived therefrom. Also provided are vaccine compositions that include bacterial minicells, methods for producing antibodies, methods for vaccinating subjects, and expression vectors encoding heterologous proteins.

66.WO/2022/256637SYNTHETIC DNA VACCINE IMMUNOGENIC IMPROVEMENTS
WO - 08.12.2022
Clasificación Internacional A61K 31/417 Nº de solicitud PCT/US2022/032138 Solicitante WEINER, David Inventor/a WEINER, David
Disclosed herein is a composition comprising one or more viral antigen or a recombinant nucleic acid sequence that encodes one or more viral antigen with enhanced immunogenicity in vivo. Also disclosed herein is a method of generating an immune response in a subject by administering the composition to the subject. The disclosure also provides a method of preventing and/or treating a viral infection in a subject using said composition and methods.

67.20220378895NOVEL IMMUNOGENS AND METHODS FOR DISCOVERY AND SCREENING THEREOF
US - 01.12.2022
Clasificación Internacional A61K 39/09 Nº de solicitud 17571079 Solicitante Children's Medical Center Corporation Inventor/a Richard Malley
The present application is generally directed to methods for identifying immunogens from organisms and pathogens, and in particular for identifying immunogens which when administered as vaccines elicit a cellular and/or humoral immune response. The present application is also directed to pneumococcal T-cell immunogens, and vaccine compositions comprising one or a combination of pneumococcal immunogens and methods for treating or preventing pneumococcal infections using the vaccines thereof. The present invention also encompasses use of the pneumococcal immunogens for diagnostic purposes to identify a subject with a pneumococcal infection.

68.297476TRANSDERMAL ACTIVE AGENT DELIVERY DEVICES HAVING CORONAVIRUS VACCINE COATED MICROPROTRUSIONS
IL - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 297476 Solicitante Emergex USA Corporation Inventor/a Mahmoud AMERI

69.297335LARGE SEQUENCE PAN-CORONAVIRUS VACCINE COMPOSITIONS
IL - 01.12.2022

Clasificación Internacional A61K 39/00 Nº de solicitud 297335 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a

70.297575MULTIVALENT PNEUMOCOCCAL VACCINE COMPOSITIONS COMPRISING POLYSACCHARIDE-PROTEIN CONJUGATES
IL - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 297575 Solicitante BIOLOGICAL E LIMITED Inventor/a

71.297049INDIVIDUALIZED THERAPEUTIC ANTICANCER VACCINE
IL - 01.12.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 297049 Solicitante NYKODE THERAPEUTICS ASA Inventor/a

72.WO/2022/246597IMIDAZOPYRIDINE DERIVATIVES AS STING AGONISTS
WO - 01.12.2022
Clasificación Internacional C07D 403/14 Nº de solicitud PCT/CN2021/095496 Solicitante FOREVER MILLETS LIMITED Inventor/a HSIEH, Ming
Described herein, inter alia, are imidazopyridine derivatives (I), pharmaceutically acceptable salts and tautomers thereof, compounds, combinations and medicaments containing said compounds and processes for their preparation. In embodiments, the imidazopyridine derivatives can be used as regulators of a stimulator of interferon genes (STING) and a related signal path thereof, and can effectively treat and/or relieve multiple types of diseases, including but not limited to malignant tumors, inflammations, autoimmune diseases, infectious diseases and as vaccine adjuvants.

1.20220395565ATTENUATED SALMONELLA GALLINARUM MUTANT STRAINS AND USES THEREOF
US - 15.12.2022
Clasificación Internacional
A61K 39/112
Nº de solicitud 17824452
Solicitante SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION
Inventor/a Hyuk-Joon KWON
The present disclosure relates to Salmonella Gallinarum mutant strains and uses thereof. A vaccine composition according to an aspect has no risk of reverting to pathogenicity, has no residual pathogenicity due to detoxification of an endotoxin, and does not cause lesions and bacterial re-isolation, thereby exhibiting significantly improved safety compared to the existing fowl typhoid vaccines. In addition, since the vaccine composition induces a high-level immune response even when administered to young chicks, it may be used regardless of age, and as the vaccine strain may be used as a live vaccine having an excellent protective capability by itself, the vaccine composition may be useful for preventing and alleviating fowl typhoid.

2.4100051BEHANDLUNG VON HPV-ASSOZIIERTEN ERKRANKUNGEN
EP - 14.12.2022
Clasificación Internacional
A61K 39/12
Nº de solicitud 21702684
Solicitante ISA PHARMACEUTICALS B V
Inventor/a BEENAKKER THOMAS JOHANNES MARIA
The invention provides methods for treating infections, disorders or diseases caused by a human papillomavirus other than HPV-16 by determining the HPV type of the patient, providing a synthetic-long-

peptide based therapeutic vaccine for treatment of said patient and administering said therapeutic vaccine to said patient. The invention further provides novel immunogenic compositions and therapeutic vaccines against human papillomaviruses other than HPV-16 and uses thereof.
3.20220395571MRNA VACCINE AND METHOD OF INDUCING ANTIGEN-SPECIFIC IMMUNE RESPONSES IN INDIVIDUALS
US - 15.12.2022
Clasificación Internacional
A61K 39/215
Nº de solicitud 17836990
Solicitante Abnova (Taiwan) Corporation
Inventor/a WILBER HUANG
An mRNA vaccine includes one or more polynucleotides and a pharmaceutically acceptable vector. Each polynucleotide includes a coding region. The coding region includes a gene of interest and a ligand sequence which encodes a CD40 ligand.

4.WO/2022/261355SELF-AMPLIFYING RNA-BASED VLP VACCINES
WO - 15.12.2022
Clasificación Internacional
A61K 39/12
Nº de solicitud PCT/US2022/032876
Solicitante CHIMERON BIO CORPORATION
Inventor/a CHENDRIMADA, Jolly, Mazumdar
The present disclosure provides compositions comprising an sa-RNA VLP vaccine (e.g. the VLP vaccine) that is capable of delivering a self-amplifying RNA to a target cell in a patient, and subsequently elicit an immune response in the patient, which immune response is sufficient to prevent or significantly decrease the duration of an infection by an infectious agent, such as SARS-CoV-2.
5.WO/2022/261230SELF-ASSEMBLING VIRAL SPIKE-EABR NANOPARTICLES
WO - 15.12.2022
Clasificación Internacional
A61K 9/51
Nº de solicitud PCT/US2022/032702
Solicitante CALIFORNIA INSTITUTE OF TECHNOLOGY
Inventor/a HOFFMANN, Magnus, Ag.
Disclosed herein include methods, compositions, and kits suitable for use in vaccination. There are provided, in some embodiments, nucleic acid compositions (e.g., mRNA vaccine, DNA vaccine) comprising a polynucleotide encoding a fusion protein. The fusion protein can comprise an antigenic polypeptide (AP) and an endosomal sorting complex required for transport (ESCRT)-recruiting domain (ERD). A plurality of fusion proteins can be capable of self-assembling into an enveloped nanoparticle (ENP) secreted from a cell in which the fusion proteins are expressed. There are provided, in some embodiments, populations of ENPs.
6.20220395570CORONAVIRUS VACCINE
US - 15.12.2022
Clasificación Internacional
A61K 39/215
Nº de solicitud 17818699
Solicitante CureVac AG
Inventor/a Susanne RAUCH

The present invention is directed to a nucleic acid suitable for use in treatment or prophylaxis of an infection with a coronavirus, preferably with a Coronavirus SARS-CoV-2, or a disorder related to such an infection, preferably COVID-19. The present invention is also directed to compositions, polypeptides, and vaccines. The compositions and vaccines preferably comprise at least one of said nucleic acid sequences, preferably nucleic acid sequences in association a lipid nanoparticle (LNP). The invention is also directed to first and second medical uses of the nucleic acid, the composition, the polypeptide, the combination, the vaccine, and the kit, and to methods of treating or preventing a coronavirus infection, preferably a Coronavirus infection.

7.20220396809ENGINEERED NEWCASTLE DISEASE VIRUS VECTOR AND USES THEREOF
US - 15.12.2022
Clasificación Internacional
C12N 15/86
Nº de solicitud 17831894
Solicitante University of Guelph
Inventor/a Sarah Wootton
An engineered Newcastle Disease Virus (NDV) vector is provided. In particular, the present disclosure provides methods of treating or preventing a disease such as cancer, or an infectious disease, or methods for eliciting an immune response, with the engineered NDV vector. The engineered NDV vector provided herein is useful as an immunogenic composition, an oncolytic agent, or a vaccine.

8.WO/2022/259191RELEASE ASSAY FOR DETERMINING POTENCY OF SELF-AMPLIFYING RNA DRUG PRODUCT AND METHODS FOR USING
WO - 15.12.2022
Clasificación Internacional
C12Q 1/6804
Nº de solicitud PCT/IB2022/055356
Solicitante GLAXOSMITHKLINE BIOLOGICALS SA
Inventor/a KONG, Qiongman
A potency release assay for measuring the potency of drug product composition comprising self-amplifying mRNA (SAM) that encodes at least one immunogenic polypeptide or at least one therapeutic peptide and a non-viral delivery system is described. In one embodiment the drug product is a vaccine comprising SAM and a non-viral delivery system such as SAM/lipid nanoparticle (LNP) delivery system, a Cationic Nanoemulsion (CNE) delivery system, or another SAM delivery system. It is demonstrated that the potency of a SAM drug product can be assessed in an in vitro system, at the RNA amplification stage (agnostic assay), by measuring the amount of double-stranded RNA (dsRNA) in cells which have been transfected with the SAM in the drug product. Thus, dsRNA can be used as a surrogate endpoint for potency. It is demonstrated that there is a very high correlation between total dsRNA in a cell culture transfected with the SAM and the potency of the SAM based drug product.
9.3035958SVINE-CIRCOVIRUS TYPE 2 (PCV2) SUBUNIT-VACCINE
DK - 12.12.2022
Clasificación Internacional
A61K 39/12
Nº de solicitud 14761742
Solicitante Boehringer Ingelheim Animal Health USA Inc.
Inventor/a HAIWICK, Gregory

Vaccination methods to control PCV2 infection with different PCV2 subtypes are disclosed. Specifically, a PCV2 subtype b (PCV2b) ORF2 proteins or immunogenic compositions comprising a PCV2b ORF2 protein are used in a method for the treatment or prevention of an infection with PCV2 of a different subtype, the reduction, prevention or treatment of clinical signs caused by an infection with PCV2 of a different subtype, or the prevention or treatment of a disease caused by an infection with PCV2 of a different subtype.
10.4101447NANT-KREBSIMPFSTOFF
EP - 14.12.2022
Clasificación Internacional
A61K 31/337
Nº de solicitud 22182406
Solicitante NANT HOLDINGS IP LLC
Inventor/a SOON-SHIONG PATRICK
Cancer is treated using coordinated treatment regimens that uses various compounds and compositions that drive a tumor from the escape phase of cancer immunoediting to the elimination and equilibrium phase of cancer immunoediting.
11.20220396548IONIZABLE LIPIDS FOR NUCLEIC ACID DELIVERY
US - 15.12.2022
Clasificación Internacional
C07C 309/69
Nº de solicitud 17620575
Solicitante Precision NanoSystems ULC
Inventor/a Nikita JAIN
The present document describes compounds, or pharmaceutically acceptable salt thereof, of a core formula (I) where R1 features an amine group, particularly useful in the formulation of lipid particles including nucleic acid therapeutic agents, or proteins, or both, and for delivery of nucleic acid and protein therapeutics to cells in vivo or ex vivo, including anticancer and vaccine applications.

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12.20220395500SMALL MOLECULE ACTIVATORS OF INTERFERON REGULATORY FACTOR 3 AND METHODS OF USE THEREOF
US - 15.12.2022
Clasificación Internacional
A61K 31/496
Nº de solicitud 17307851
Solicitante Neuralexo, Inc.
Inventor/a Susan Stevens
Small molecule activators of interferon regulatory factor (IRF), such as IRF3, and methods of use are provided. In particular, compositions and methods for upregulating interferon regulatory factor 3 (IRF3) activity, such as in the brain following stroke to provide potent protection against ischemic brain injury, to improve a therapeutic time window for providing treatments to stroke patients and/or for enhancement of vaccine platforms are disclosed.

13.4100038REKOMBINANTE EXPRESSIONSPLATTFORM, KONSTRUKTE UND VERFAHREN ZUR EXPRESSION VON SCHWER EXPRIMIERBAREN PROTEINEN (DTE-PS)
EP - 14.12.2022

Clasificación Internacional
A61K 38/00
Nº de solicitud 21751070
Solicitante PREMAS BIOTECH PRIVATE LTD
Inventor/a ARORA KAJAL
The present invention provides a versatile yeast-based recombinant expression platform for the enhanced expression of full length or truncated target "Difficult to Express" proteins (DTE-Ps) of diverse origin and families. Constructs, methods and kits involved in expressing such DTE-Ps through the said system are also provided. The recombinant expression platform of the present invention is robust, scalable and can have applications in fields like vaccine development, drug discovery, metabolism, diagnostics, therapeutics and healthcare.
14.WO/2022/257237NOVEL CORONAVIRUS SARS-COV-2 BROAD-SPECTRUM POLYPEPTIDE ANTIGEN AND SPECIFIC NEUTRALIZING ANTIBODY AND USE THEREFOR
WO - 15.12.2022
Clasificación Internacional
C07K 14/165
Nº de solicitud PCT/CN2021/107615
Solicitante YANGZHOU UNIVERSITY
Inventor/a YE, Jianqiang
Provided are a novel coronavirus SARS-CoV-2 broad-spectrum polypeptide antigen and a specific neutralizing antibody and use therefor, belonging to the field of virus immune detection technology. The novel coronavirus SARS-CoV-2 broad-spectrum polypeptide antigen having an amino acid sequence as shown in SEQ ID NO: 1 reacts with SARS-CoV-2 human positive serum to specifically bind to antibodies against novel coronavirus. Based on the peptide sequence, a triple SARS-CoV-2 broad-spectrum polypeptide tandem fusion protein is prepared by means of PCR, prokaryotic expression and protein purification techniques to simulate a trimer mode of a SARS-CoV-2 S protein in a natural state. By using the fusion protein as an antigen to immunize a mouse, the specific neutralizing antibody against SARS-CoV-2 can be produced. The neutralizing antibody has good application prospects in SARS-CoV-2 anti-infection treatment, vaccine development and detection kit development.
15.20220395568VACCINES AND RELATED METHODS FOR TREATMENT OF PSEUDOMONAS BACTERIAL INFECTIONS
US - 15.12.2022
Clasificación Internacional
A61K 39/104
Nº de solicitud 17775468
Solicitante Marshall University Research Corporation
Inventor/a Hongwei D. YU
Methods of treating a Pseudomonas bacterial infection and/or eliciting an immune response in a subject are provided and include administering to the subject a vaccine including a modified Pseudomonas bacterium missing or deficient in alpha-1,3-rhamnosyltransferase and/or one or more other virulence factors. Vaccines comprising a modified Pseudomonas bacterium missing or deficient in alpha-1,3-rhamnosyltransferase are further provided.

16.WO/2022/260960VIRUS-LIKE PARTICLE VACCINE FOR CORONAVIRUS
WO - 15.12.2022
Clasificación Internacional
A61K 39/215

Nº de solicitud PCT/US2022/032201
Solicitante ICOSAVAX, INC.
Inventor/a KANESA-THASAN, Niranjan
The present disclosure relates to targeting SARS-CoV-2, in particular, prevalent strains of SARS-CoV-2, and methods of using such vaccines to induce neutralizing antibody levels against SARS-CoV-2.
17.4100049BEHANDLUNG MIT ANTIGENIMPFUNG UND BINDUNGSAGENZIEN, DIE AN PD-L1 UND CD137 BINDEN
EP - 14.12.2022
Clasificación Internacional
A61K 39/00
Nº de solicitud 21704436
Solicitante BIONTECH SE
Inventor/a SAHIN UGUR
The present disclosure relates to methods and compositions for inducing an immune response in a subject comprising providing to the subject a peptide or protein vaccine and a binding agent, such as a bispecific antibody, binding to PD-L1 and CD137, such as human PD-L1 and human CD137, e.g., by coadministering to the subject a peptide or protein used for vaccination or a polynucleotide, in particular RNA, encoding a peptide or protein used for vaccination, and a binding agent binding to PD-L1 and CD137 or a polynucleotide, in particular RNA, encoding a binding agent binding to PD-L1 and CD137. The present disclosure further relates to medical preparations useful in the methods disclosed herein.
18.WO/2022/260964ANTHRAX VACCINE
WO - 15.12.2022
Clasificación Internacional
A61K 39/07
Nº de solicitud PCT/US2022/032212
Solicitante PFENEX INC.
Inventor/a CHEN, Hubert
Provided herein is an immunogenic composition, comprising: 5 mcg to 100 mcg B. anthracis rPA (recombinant protective antigen) or mrPA (mutant rPA) protein and liposome-embedded MPLA (monophosphoryl lipid A) adjuvant. An immunogenic composition comprising 60 mcg to 600 mcg B. anthracis mrPA (mutant rPA) protein, wherein the composition is free of adjuvant, i.e., with no added adjuvant, is also provided. Also described is a method for inducing an immune response to B. anthracis, the method comprising administering the immunogenic composition to the subject.
19.WO/2022/259215TOBAMOVIRUS PSEUDOVIRIONS FOR STABILISING SINGLE STRANDED RNA
WO - 15.12.2022
Clasificación Internacional
C07K 14/005
Nº de solicitud PCT/IB2022/055404
Solicitante UNIVERSITY OF CAPE TOWN
Inventor/a MEYERS, Ann Elizabeth
Provided herein is a method for stabilising a single stranded RNA (ssRNA) by encapsidation of the ssRNA with a tobamovirus coat protein to obtain a pseudovirion (PsV), the method comprising expressing a tobamovirus coat protein and the ssRNA comprising a tobamovirus encapsidation origin (OriA), wherein the expressed tobamovirus coat protein interacts with the OriA sequence on the ssRNA to initiate encapsidation of the ssRNA by the tobamovirus coat protein, thereby forming a pseudovirion. The PsVs produced according to the method can be used as a diagnostic control composition, where the ssRNA is a sequence detected by a molecular diagnostic assay. The pseudovirions may also be used as a vaccine

to elicit an immune response in a subject, and in pharmaceutical compositions to be administered to a subject.
20.20220395554LAG3 BINDING PEPTIDES
US - 15.12.2022
Clasificación Internacional
A61K 38/10
Nº de solicitud 17854227
Solicitante Leidos, Inc.
Inventor/a Gabriel M. Gutierrez
This disclosure provides peptides which bind to LAG3, such as SAPWEPLHWPEDWWQGTGEW (SEQ ID NO:1), and can be used to block the interaction of LAG 3 with other molecules such as MHC-II, FGL1, and α-synuclein. These peptides can be used for various therapeutic purposes, such as inhibiting the progression of a hyperproliferative disorder, including cancer, or inhibiting the progression of a synucleinopathy, inhibiting the progression of sepsis, inhibiting the progression of an infectious disease, and enhancing a response to a vaccine.

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