VacCiencia

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EN ESTE NÚMERO

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

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

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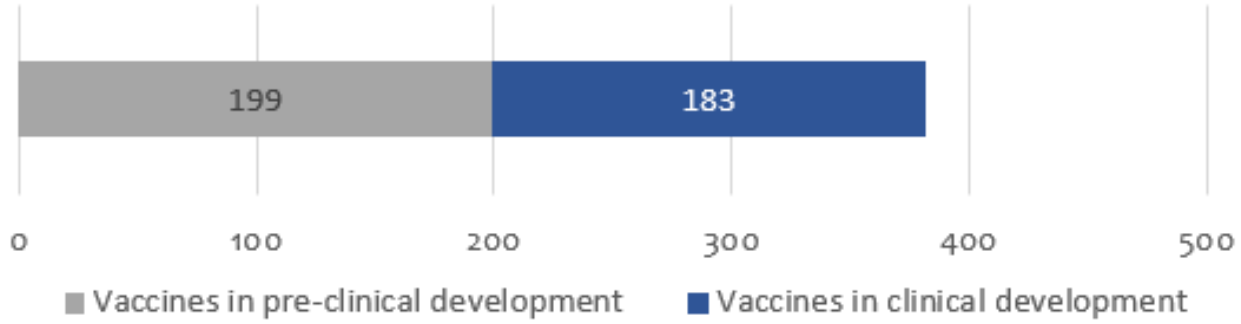
Resumen de la información publicada por la OMS sobre vacunas en desarrollo contra la COVID-19, a nivel mundial

Última actualización por la OMS: 30 de marzo de 2023.

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

183 Vacunas en evaluación clínica y 199 en evaluación preclínica



Vacunas en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	59	32%
VVnr	Viral Vector (non-replicating)	25	14%
DNA	DNA	17	9%
IV	Inactivated Virus	22	12%
RNA	RNA	43	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	7	4%
VVr + APC	VVr + Antigen Presenting Cell	2	1%
LAV	Live Attenuated Virus	2	1%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
BacAg-SpV	Bacterial antigen-spore expression vector	1	1%
		183	

Vacunas en evaluación clínica por vía de administración

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

Número de dosis de las vacunas en evaluación clínica

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

Vacunas mucosales en evaluación clínica

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

Vacunas en fase 4 de evaluación clínica

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

Vacunas en fase 3 de evaluación clínica

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

Noticias en la Web

Minsal reconoce que campaña con vacuna bivalente "no ha sido exitosa" y apunta a percepción de riesgo

18 mar. Durante la jornada se dio inicio a la campaña de vacunación de la Influenza, debido al alza en los casos diarios que se esta dando en Chile, la cual en los últimos 14 días ha registrado una incremento de un 64,6 %.

Esta iniciativa tuvo una inversión de 15 mil millones de pesos y el Minsal dispuso se 1.200 puntos para su debida realización.

En esa línea, en un nuevo reporte diario el Ministerio de Salud informó de 3 mil 826 casos nuevos de COVID-19 junto a una positividad nacional del 12,9% y un total de 14 decesos.

En ese contexto la campaña con dosis Bivalente sólo ha logrado un 30 % de población objetivo y desde la cartera de Salud esta mañana mencionaron que reconocen que la campaña no ha sido exitosa, dando como explicación que ha hecho falta una mayor comunicación de riesgo.

Así lo especificó la jefa de la cartera de Salud Ximena Aguilera.

"Yo creo que falta más la percepción de riesgo y nosotros tenemos que ser capaces de comunicar mejor esa percepción de riesgo", precisó la secretaria de Estado.

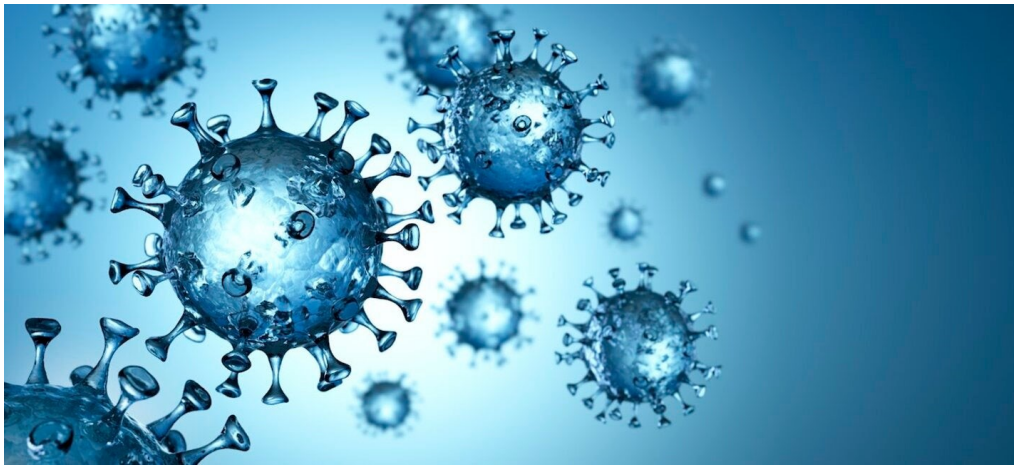
Así también dijo que "nosotros encontramos que la cobertura de vacunación que tenemos con la vacuna bivalente de COVID-19, no es todo lo exitosa que hubiésemos querido, sin embargo, está dentro del contexto de lo que se ha observado en otros países (…)".

Por otro lado, el epidemiólogo de la Universidad de Chile, Carlos Pérez, señaló que esta alza se da a raíz que la variante Ómicron es altamente transmisible, además aseguró que en las próximas semanas continuaremos viendo un alza en los contagios.

"(…) Lo importante que para todos aquellos que están con sus vacunas al día, el riesgo de tener enfermedad grave por COVID-19 y muerte, baja sustancialmente", comentó el especialista.

La microbióloga de la Universidad Andrés Bello, Claudia Saavedra, adjudicó el alza en los casos a que estamos contando con muchos más testeos, situación que no se daba hace varios meses.

"Ahora se está haciendo más testeo y eso ha hecho que aumente el número de casos, que se detecten más personas que están contagiadas (…)", indicó la experta.



Finalmente, Saavedra recalcó que con la campaña de vacunación por la Influenza espera que esto permita el paso a que más gente decida vacunarse con la dosis Bivalente y así poder completar su esquema de vacunación.

Fuente: biobiochile.cl. Disponible en https://bit.ly/3U0Gy6P

La OMS apunta en qué puede convertirse la COVID-19 en los próximos años

19 mar. Tres años han pasado ya desde el inicio de la pandemia del coronavirus SARS-CoV-2. A estas alturas de marzo en 2020 se vivían los primeros días de confinamiento en España, con muchas dudas sobre cuánto duraría y las consecuencias sociales y económicas que tendría en nuestras vidas. Después de este tiempo la COVID-19 ha acabado con la vida de 6,8 millones de personas, especialmente en los primeros meses de emergencia sanitaria, cuando no había forma de proteger al sistema inmunitario del virus.

Con las vacunas la cosa cambió y su impacto, tanto en número de contagios y de fallecimientos, se vio reducido a algunas oleadas de contagios puntuales. Los últimos meses, pese al repunte de contagios en China tras dejar atrás su política de 'COVID cero', han supuesto un punto de inflexión. Así lo aseguró recientemente la Organización Mundial de la Salud (OMS), quien ahora afirma que pronto esta pandemia será una amenaza similar a la de la gripe estacional.

"Llegamos a un punto en que podemos considerar la COVID-19 de la misma forma que consideramos la gripe estacional, es decir una amenaza para la salud, un virus que seguirá matando, pero un virus que no perturba nuestra sociedad o nuestros sistemas hospitalarios", asegura el jefe de los programas de urgencia de la OMS, Michael Ryan. La organización, además, espera poder rebajar el nivel de alerta máxima por la pandemia a lo largo de este año.

La "mejor posición" en toda la pandemia

Junto a Ryan compareció también el director general del organismo, Tedros Adhanom Ghebreyesus, quién manifestó su satisfacción por los últimos datos sobre la pandemia. "Por primera vez, el número semanal de decesos registrados en las últimas cuatro semanas fue inferior al que se registró cuando usamos por primera vez la palabra 'pandemia', hace tres años".

Una cifra que, de acuerdo con Tedros, supone estar en una "posición mucho mejor que en cualquier otro momento de la pandemia". Para este año 2023 la OMS espera poder rebajar el nivel de alerta, decretado el 30 de enero de 2020 tras la explosión de casos en China, cuando por entonces se hablaba de una neumonía de origen desconocido.

En dicha fecha se decretó la "emergencia de salud pública internacional", y poco más de un mes ésta se elevó a la categoría de pandemia. "Declaramos la emergencia sanitaria mundial para incitar a los países a tomar medidas más decisivas, pero no todos lo hicieron", concluye Tedros.

Fuente: As Actualidad. Disponible en https://bit.ly/3TZsCdp

Singapore first country in Asia to get new pneumococcal vaccine

Mar 20. Singapore will be the first country in Asia to get Pfizer's new pneumococcal vaccine, which has a broader range of protection and could replace the two that are now in use here.

The vaccines protect against the more common bacterial strains responsible for pneumococcal disease, which causes a range of infections including pneumonia, meningitis, sinus and middle-ear infection. It can lead to very severe illness and even death.

In fact, pneumonia, or inflammation of the lungs, is the third major cause of death here.

These vaccines do not protect against all causes of pneumonia, since that can be due to a range of bugs including other types of bacteria, virus or even fungi.

But they do provide protection against the more common strains of the Streptococcus pneumoniae bacteria, which is why the Government encourages and subsidises pneumococcal vaccination for Singaporean children and seniors.

For seniors, the recommendation is to get the pneumococcal conjugate PCV13 vaccine first, followed by the pneumococcal polysaccharide PPSV23 vaccine a year later.

The new vaccine, PCV20, covers seven more bacterial strains than the PCV13, also manufactured by Pfizer. The PPSV23 is by Merck Sharp & Dohme and covers 23 strains of bacteria.

Professor Julio Ramirez, chief research scientist at the Norton Infectious Diseases Institute at Norton Healthcare in the United States, who was the principal investigator in studies of the PCV13 vaccine, was brought in by Pfizer for the launch of the PCV20 here on Saturday.

He said that unlike polysaccharide vaccines, conjugate vaccines, aside from getting the body to produce antibodies that protect against infection, also prime T cells and memory B cells, which can mount a response against invasive bacteria even after the level of antibodies has waned.

Professor Ooi Eng Eong, a microbiologist at the Duke-NUS Medical School, also said the immune responses from a conjugate vaccine "would theoretically be broader and more lasting than what is elicited by polysaccharides alone".

Associate Professor Lim Poh Lian, who heads the Travellers' Health and Vaccination Clinic at Tan Tock Seng Hospital and is also a senior consultant at the National Centre for Infectious Diseases, said: "Conjugate vaccines like PCV13 or PCV20 are better able to stimulate an immune response compared to the polysaccharide vaccine PPSV23, which was the reason conjugate vaccines were developed."

Associate Professor Hsu Liyang, an infectious diseases specialist at the National University of Singapore Saw Swee Hock School of Public Health, said the newer vaccine can certainly replace the PCV13.

"It is also possible that the use of this vaccine can obviate the need for the use of the 23-valent polysaccharide vaccine," he added.

Agreeing, Prof Lim said: "For those who have not had the PCV13 and PPSV23 combination yet, having a single dose of PCV20 greatly simplifies the vaccination regimen for patients and families. Instead of trying to sequence two vaccines with all the other health visits, this vaccine allows them to just get 'one and done'."

While Dr Asok Kurup, who chairs the Chapter of Infectious Disease Physicians, agrees that the wider coverage from PCV20 can mean just a single dose for the vast majority, he said people at higher risk, such as the immunocompromised, should still get the PPSV23 as well, as it covers more strains.

The Ministry of Health (MOH) told The Straits Times that while the new vaccine has been approved for use here since November 2022, a review is on to decide "whether the vaccine should be recommended for inclusion in the national immunisation schedules".

If it is not, there will be no subsidy for its use.

Prof Lim said the Expert Committee on Immunisation is assessing the clinical- and cost-effectiveness of PCV20 and how it should be used.

Dr Kurup said that in the private sector, the PPSV23 costs just under $100 and PCV13 about $200. The price of PCV20 should be about the same as that of PCV13, he added.

An MOH spokesman said those who have been recommended to receive the PCV13 and PPSV vaccines under the National Adult Immunisation Schedule are advised to do so. The PCV20 is currently not for use in children.

The infectious diseases experts ST spoke to agree that people who have received the two pneumococcal vaccines do not need to get the PCV20 as well.

Professor Paul Tambyah, a senior infectious diseases consultant at the National University Hospital, said: "The big question to me is whether PCV20 will be replaced by PCV25."

An ongoing study for a 25-valent pneumococcal conjugate vaccine, which started in 2022, is expected to be completed by 2025.

Fuente: The Straits Times. Disponible en https://bit.ly/3ZzCUlA

Polio cases in Africa linked to new oral vaccine

Mar 20. Last week, the Global Polio Eradication Initiative (GPEI) reported seven children, six in the Democratic Republic of the Congo (DRC) and one in neighboring Burundi, had recently been paralyzed by poliovirus strains derived from a vaccine meant to prevent the disease. Unfortunately, such cases are so common—786 were reported last year in Africa, Yemen, and elsewhere—that these seven might not have stood out against the noise. But there was a key difference, GPEI said in a 16 March statement: These are the first cases linked to a new polio vaccine that was painstakingly designed to avoid just this problem.

Known as novel oral polio vaccine type 2 (nOPV2), it was rolled out 2 years ago this month, and public health experts have been closely monitoring whether its use could also spark outbreaks on rare occasions. "It's disappointing but not entirely unexpected," says Aidan O'Leary, who heads GPEI. To Simona Zipursky of the World Health Organization, who co-chairs GPEI's nOPV2 working group, the question for the past 2 years has been when, not whether, such cases would occur. "But you always hope you are wrong," she says.

Although the novel vaccine is not a magic bullet, the data from the initial rollout show it's far better than the one it has largely replaced, monovalent OPV2 (mOPV2), Zipursky and others say. The risk of sparking outbreaks with nOPV2 is "much, much lower," says Ananda Bandyopadhyay, deputy director of technology,

research, and policy for polio at the Bill & Melinda Gates Foundation and the other co-chair of the GPEI working group.

Cheap and easy to use, Albert Sabin's OPV is hands down the best vaccine for eliminating polio in poor settings where clean water and sanitation are lacking. Children shed the weakened virus from the vaccine in their stool for a short time after they receive the oral drops, conferring immunity even on those who are not vaccinated. The problem is that in areas where polio vaccination rates are low, in rare cases the vaccine virus can continue to spread among un- or underimmunized people for months, accumulating enough mutations to revert to its paralytic form. This happens most often with poliovirus type 2, one of three serotypes. For years now, GPEI has been chasing its tail, quashing one type 2 outbreak with mOPV2 only to seed new outbreaks.

In 2011, an international team of researchers, funded by the Gates foundation, began working on a technical fix. Starting with the same type 2 Sabin vaccine virus, they tweaked its genome in several places to make it less likely to revert. The hope was that nOPV2 would not seed new outbreaks—or at least do so much less frequently than mOPV2. Clinical and preclinical data looked good—the vaccine was just as safe and effective as mOPV2 and much more genetically stable, Bandyopadhyay says. But because these reversions are rare events, the new vaccine's true worth could not be known until it was used widely under close scrutiny.

Since March 2021, GPEI and its country partners have administered almost 600 million doses of the new vaccine to respond to outbreaks in 28 countries—until now, without a hitch. The seven cases of paralysis arose from two separate "emergences"—in other words, two vaccine viruses reverted independently, in South Kivu and Tanganyika provinces in the DRC, and then began to spread. The one case in Burundi, in Bujumbura Rural province, is linked to the South Kivu strain; that virus has also been detected in five sewage samples in a neighboring province.

"This is clearly an extremely rare event," O'Leary says. Going forward, the job is to figure out just how rare, Zipursky says. "We will continue to gather data to get a true sense of [nOPV2's] genetic stability." A preliminary analysis suggests that if mOPV2 had been used instead at this broad scale, an estimated 30 to 40 emergences would have occurred as opposed to two, Bandyopadhyay says.

Vaccine experts are now weighing the relative merits of the two oral options, and that's important, O'Leary says. But he stresses that the problem of low vaccination coverage should get equal or greater attention. Bandyopadhyay agrees. "If there is persistently poor immunization coverage in a community, there is always a risk that a live, attenuated vaccine virus will revert."

Both mOPV2 and nOPV2 have stopped many outbreaks where the vaccination campaigns are of high quality. But those can be hard to pull off in parts of the DRC and Burundi. Indeed, GPEI has identified eastern DRC, where these paralytic viral variants arose, as one of seven places globally at highest risk for polio outbreaks—and where once they start, they can be extremely hard to stop. The DRC is rocked by conflict and political instability, which makes it difficult to reach many children with vaccines. It has also been battling simultaneous disease outbreaks, all vying for priority. Routine vaccination rates are low.

"GPEI needs to dig deep and work through all the surveillance data in both countries to understand what is happening with the [nOPV2] vaccine," O'Leary says. At the same time, he says, the program needs to intensify its efforts to reach all the children being missed by that vaccine.

Fuente: Science News. Disponible en https://bit.ly/3TVErkS

Centro de Ingeniería Genética y Biotecnología: Candidato vacunal cubano contra el dengue se basa en plataforma muy segura

21 mar. El candidato vacunal que induce la respuesta inmunológica celular contra los cuatro serotipos del virus del dengue, que desarrollan el Centro de Ingeniería Genética y Biotecnología y el Instituto de Medicina Tropical Pedro Kourí, está basado en una plataforma tecnológica muy segura, señala una publicación del CIGB en Twitter.

"El candidato vacunal contra dengue que estamos desarrollando en el CIGBCuba está basado en proteínas recombinantes: una plataforma tecnológica muy segura. Tenemos un candidato tetravalente, basado en proteínas de los cuatro virus del dengue, que estamos evaluando en este momento", se lee en la publicación.

Semanas atrás, Eduardo Martínez Díaz, presidente del grupo BioCubaFarma, informó en Twitter que en el transcurso de 2023 debe estar disponible el nuevo sistema de diagnóstico rápido del dengue, en el cual trabajan especialistas del Centro de Inmunoensayo.

Añadió que hay probabilidad de contar este mismo año con el primer candidato vacunal contra esa enfermedad viral, transmitida por el mosquito Aedes aegypti.

El sistema de diagnóstico rápido permitiría determinar, ante la aparición de los primeros síntomas, si se trata de dengue y/o de una segunda infección, para aplicar un tratamiento diferenciado a los pacientes y evitar el agravamiento de la enfermedad y la muerte, explicó Martínez Díaz al diario Granma.

En enero, el presidente de BioCubaFarma declaró a la ACN que es "una vacuna compleja, porque el dengue tiene cuatro serotipos y hay que inmunizar contra cada uno de ellos al mismo tiempo para lograr la efectividad del producto (…) Pensamos que en el 2024 podamos estar haciendo los ensayos clínicos en humanos".

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

China approves its first mRNA Covid-19 vaccine

Mar 23. China has approved its first Covid-19 vaccine based on mRNA technology, months after the country lifted strict pandemic measures.

The vaccine was developed by CSPC Pharmaceutical Group, a homegrown firm based in the northern Chinese city of Shijiazhuang, it said in a Wednesday statement to the Hong Kong stock exchange. The vaccine targets the Omicron variant and was tested in China with over 5,500 people, it added.

The approval comes just weeks after China declared a "major and decisive victory" in its handling of the coronavirus outbreak that swept the country in recent months following an abrupt relaxation of its "zero-Covid" policy late last year.

"This is a positive step because there is strong scientific evidence that mRNA vaccines do much better than non-MRA vaccines," Jin Dong-yan, a professor in molecular virology at the University of Hong Kong, told CNN.

"Whether this product … is as good as other products on market is still to be determined."

CSPC said in the statement the results had demonstrated the vaccine's "safety, immunogenicity and efficacy," but it didn't offer additional details.

Until now, China has approved only inactivated vaccines made by Sinovac Biotech and Sinopharm Group, two Beijing-based drugmakers.

The inactivated vaccines have been found to elicit lower levels of antibody response compared to ones using the newer messenger RNA technology. Biotech firms Pfizer (PFE) and Moderna (MRNA) make rRNA vaccines.

Fuente: CNN. Disponible en https://cnn.it/40QWxqb

Hipra, la vacuna española contra la COVID-19, obtiene la aprobación de la EMA

23 mar. Los laboratorios Hipra han recibido confirmación de la Agencia Europea del Medicamento (EMA por sus siglas en inglés) de que la vacuna que desarrolla contra la covid ha superado la revisión continua a la que se ha sometido durante meses y, ahora, esperan autorización definitiva de comercialización.

Desde la empresa, sus responsables explican que han dado ese nuevo paso después de un largo proceso para demostrar el cumplimiento de todas las medidas sanitarias y de seguridad. La previsión es que la autorización definitiva se obtenga la próxima semana en una nueva reunión, aunque tampoco se descarta que el plazo se prolongue algunos días más.

La EMA, por el momento, ha iniciado la evaluación de la solicitud de Hipra para proceder a la comercialización de la vacuna y ha anunciado el nombre de Bimervax. La revisión continua comenzó en marzo de 2022 como proceso obligado para obtener la validación, pero el cambio de situación de la pandemia ha supuesto que los estudios se hayan llevado a cabo sin la urgencia de los primeros momentos y que las solicitudes de información hayan sido exhaustivas.

Un sanitario con una vacuna de la marca española Hipra. Hospital Regional de Málaga vía Europa Press.

Hipra cuenta desde agosto con un contrato con la Comisión Europea que da derecho a los países que la conforman a adquirir hasta un máximo de 250 millones de dosis. Esta vacuna es de proteína recombinante adyuvada y se conserva a temperatura de refrigeración de entre 2 y 8 grados, lo que facilita su almacenaje y distribución. Desde los laboratorios se ha explicado que la tecnología utilizada permite una importante versatilidad para su adaptación a nuevas variantes del virus.

Fuente: 20 Minutos Salud. Disponible en https://bit.ly/3KmnqwT

SAGE updates COVID-19 vaccination guidance

Mar 28. Following its 20-23 March meeting, WHO's Strategic Advisory Group of Experts on Immunization (SAGE) revised the roadmap for prioritizing the use of COVID-19 vaccines, to reflect the impact of Omicron and high population-level immunity due to infection and vaccination.

The roadmap continues SAGE's prioritization of protecting populations at the greatest risk of death and severe disease from SARS-CoV-2 infection and its focus on maintaining resilient health systems. The roadmap newly considers the cost-effectiveness of COVID-19 vaccination for those at lower risk – namely healthy children and adolescents – compared to other health interventions. The roadmap also includes revised recommendations on additional booster doses and the spacing of boosters. The current COVID-19 vaccines' reduction of post-COVID conditions is also considered but the evidence on the extent of their impact is inconsistent.

"Updated to reflect that much of the population is either vaccinated or previously infected with COVID-19, or both, the revised roadmap reemphasizes the importance of vaccinating those still at-risk of severe disease, mostly older adults and those with underlying conditions, including with additional boosters," stated SAGE Chair Dr Hanna Nohynek. "Countries should consider their specific context in deciding whether to continue vaccinating low risk groups, like healthy children and adolescents, while not compromising the routine vaccines that are so crucial for the health and well-being of this age group."

The revised roadmap outlines three priority-use groups for COVID-19 vaccination: high, medium, and low. These priority groups are principally based on risk of severe disease and death, and consider vaccine performance, cost-effectiveness, programmatic factors and community acceptance.

The high priority group includes older adults; younger adults with significant comorbidities (e.g. diabetes and heart disease); people with immunocompromising conditions (e.g. people living with HIV and transplant recipients), including children aged 6 months and older; pregnant persons; and frontline health workers.

For the high priority group, SAGE recommends an additional booster of either 6 or 12 months after the last dose, with the timeframe depending on factors such as age and immunocompromising conditions. All the COVID-19 vaccine recommendations are time-limited, applying for the current epidemiological scenario only, and so the additional booster recommendations should not be seen as for continued annual COVID-19 vaccine boosters. The aim is to serve countries planning for the near- to mid-term.

The medium priority group includes healthy adults – usually under the age of 50-60 – without comorbidities and children and adolescents with comorbidities. SAGE recommends primary series and first booster doses for the medium priority group. Although additional boosters are safe for this group, SAGE does not routinely recommend them, given the comparatively low public health returns.

The low priority group includes healthy children and adolescents aged 6 months to 17 years. Primary and booster doses are safe and effective in children and adolescents. However, considering the low burden of disease, SAGE urges countries considering vaccination of this age group to base their decisions on contextual factors, such as the disease burden, cost effectiveness, and other health or programmatic priorities and opportunity costs.

The public health impact of vaccinating healthy children and adolescents is comparatively much lower than the established benefits of traditional essential vaccines for children – such as the rotavirus, measles, and

pneumococcal conjugate vaccines – and of COVID-19 vaccines for high and medium priority groups. Children with immunocompromising conditions and comorbidities do face a higher risk of severe COVID-19, so are included in the high and medium priority groups respectively.

Though low overall, the burden of severe COVID-19 in infants under 6 months is still higher than in children aged 6 months to 5 years. Vaccinating pregnant persons – including with an additional dose if more than 6 months have passed since the last dose – protects both them and the fetus, while helping to reduce the likelihood of hospitalization of infants for COVID-19.

Countries that already have a policy in place for additional boosters should assess the evolving need based on national disease burden, cost effectiveness and opportunity costs.

Separate to the roadmap, SAGE also updated their recommendations on bivalent COVID-19 vaccines, now recommending that countries can consider using BA.5 bivalent mRNA vaccine for the primary series.

Other meeting highlights include:

Polio

SAGE evaluated the data on the novel oral polio vaccine type 2, recommending that it should be the preferred choice for response to circulating vaccine-derived poliovirus type 2 (cVDPV2) wherever possible. It also recommended that to rapidly boost immunity levels in hard to reach or conflict-prone areas, the interval between vaccines can be as low as 1 week, compared to the regular 4-week interval.

In areas of persistent poliovirus circulation, SAGE recommended that countries supplement outbreak response with additional campaigns using inactivated polio vaccines (full or fractional doses).

Regional reports on measles

The increase in the size and number of measles outbreaks exemplifies the repercussions of the pandemic's seismic impact on routine immunization. In 2021, coverage with the first dose of measles vaccine was at its lowest level since 2008, with 25 million children missing out.

With measles cases increasing in all WHO regions in 2022, challenges include difficulties with delivering vaccines in conflict-affected settings, weak health systems, competing priorities, and inadequate financing. Surveillance quality declined globally during the pandemic, although there are signs of recovery in several countries.

SAGE noted the need to review policies on age eligibility for measles vaccination to enable catch-up, accelerate the development and use of new technologies and innovations, and review the evidence for vaccination of infants below six months and during pregnancy.

Status of new tuberculosis vaccines

Tuberculosis (TB) is a leading cause of death and a vaccine that prevents disease in adolescents and adults is urgently needed. A substantial effort for vaccine development is underway, with several candidates in late -stage clinical trials and the potential for multiple vaccines to receive regulatory authorization within 3 years.

A process has been initiated to systematically determine research evidence needs that will allow for vaccines policy and vaccine introduction decisions. In this context, SAGE made proposals to build the evidence base regarding a promising TB vaccine candidate for adults and adolescents, M72/AS01E.

Malaria

Introducing the RTS,S malaria vaccine has resulted in a substantial reduction in severe malaria and all-cause mortality among age eligible children. There is high demand for the vaccine, with at least 28 countries expressing interest in introducing the vaccine. Of these, 15 countries have already submitted a formal application for support to Gavi, and more than 15 additional applications are expected later this year. Supply remains highly constrained. SAGE recommends flexibility in the immunization schedule and supports reducing the minimum interval between doses 3 and 4 to 6 months to optimize impact.

Identifying priority pathogens for new vaccines

WHO is in the process of defining regional priority targets for new vaccine development for non-epidemic pathogens. Early results indicate that tuberculosis, HIV, and pathogens that exhibit high levels of antimicrobial resistance (e.g. Klebsiella pneumoniae) are important across all regions. Streptococcus pyogenes (Group A streptococcus), Shigella, and respiratory syncytial virus (RSV) were identified as important by 4 or more regions, as was Plasmodium falciparum by the African region.

Fuente: World Health Organization. Disponible en https://bit.ly/3lZseir

WHO experts revise COVID-19 vaccine advice, say healthy kids and teens low risk

Mar 29. The World Health Organization's vaccine experts have revised their global Covid-19 vaccination recommendations, and healthy kids and teenagers considered low priority may not need to get a shot.

The updated roadmap is designed to prioritize COVID-19 vaccines for those at greatest risk of death and severe disease, according to the World Health Organization's Strategic Advisory Group of Experts on Immunization (SAGE).

It is being issued to reflect the Omicron stage of the pandemic and because of countries' high population immunity levels due to vaccines and infection, the group announced following a recent meeting.

The new streamlined recommendations focus on high-, medium- and low-risk groups.

SAGE recommends additional booster doses of COVID-19 vaccine for high-priority groups such as older people, immunocompromised people of all ages, front-line health workers and pregnant people six or 12 months after their last booster dose.

For those at medium risk, the group recommends primary vaccinations and first booster doses but does not recommend routine additional boosters. This group includes children and adolescents with health risks and healthy adults under the age of about 60.

For healthy kids six months to 17 years old, the group said countries should consider vaccinating based on factors such as disease burden and cost-effectiveness.

"The public health impact of vaccinating healthy children and adolescents is comparatively much lower than

the established benefits of traditional essential vaccines for children – such as the rotavirus, measles, and pneumococcal conjugate vaccines," SAGE said in a press release.

The group said its vaccine guidance is based on current epidemiological conditions and could change if the pandemic evolves.

It also comes as countries are making their own choices about vaccine recommendations based on their vaccine supply and progress.

US officials, for example, are weighing whether to offer people who are at high risk of severe Covid-19 the chance to get another bivalent booster. The United Kingdom and Canada have already begun allowing certain people to get another bivalent booster.

Experts also acknowledged competing health priorities when it comes to vaccinations.

"As we all know, the Covid pandemic has taken a heavy toll on immunization programs," SAGE Chair Dr. Hanna Nohynek said on Tuesday.

"It's been a tremendous effort, and many countries have done very well reaching high coverages, but it is still requiring efforts to reduce the inequities, and we need to reach the high-priority groups, and we need to close the coverage gaps."

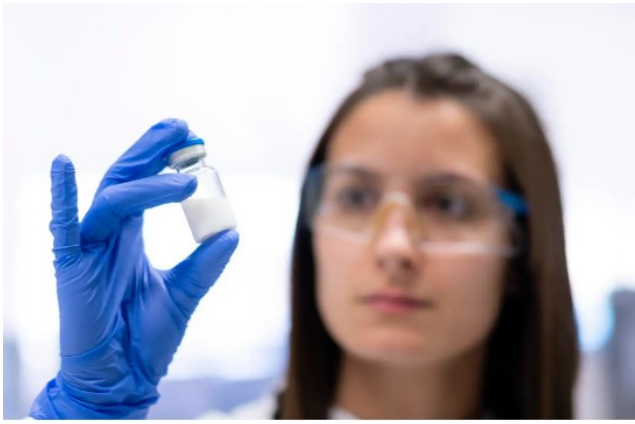
Nohynek said there was a need for children to catch up on routine vaccines they missed during the Covid-19 pandemic.

She pointed to rising cases of measles across all of WHO's regions, saying that immunization programs around the world must be strengthened and restored. Measles is a known "tracer," or a sign that other vaccine-preventable diseases are in communities.

Polio is also circulating in several countries, so WHO's vaccine advisers recommend improving immune vaccine coverage and supplementing with a dose of injectable polio vaccine when there is "persistent poliovirus circulation."

Fuente: CNN Health. Disponible en https://cnn.it/40wButv

Así funciona la vacuna de Hipra: estas son sus ventajas



30 mar. El Comité de Medicamentos de Uso Humano de la Agencia Europea de Medicamentos (EMA) ha autorizado la vacuna española Hipra contra la COVID-19, conocida comercialmente como 'Bimervax', para poner como dosis de refuerzo a las personas mayores de 16 años que hayan sido inoculadas con una vacuna de Pfizer o Moderna.

La vacuna de Hipra está elaborada por la proteína de espiga del SARS-CoV-2 de las variantes Alfa y Beta del virus, que se han empleado para juntarlas en una sola proteína en el laboratorio. Dicha proteína se halla en la superficie del virus que causa el coronavirus, el SARS-CoV-2 y que el propio virus usa para entrar en las células del organismo.

Asimismo, la vacuna también posee un "adyuvante", es decir, cuenta con una sustancia que ayuda a reforzar la respuesta inmunitaria del fármaco.

¿Cómo funciona la vacuna?

Según explican desde la EMA, cuando se inocula con Hipra, el sistema inmunitario de la persona identifica esta proteína combinada como un agente extraño y genera defensas naturales, anticuerpos y células T (inmunitarias), contra ella. Esto hace que si más tarde la persona entra en contacto con el coronavirus, su sistema inmunitario ya está preparado para enfrentarse a él, puesto que reconocerá la proteína de la espiga del virus.

De esta manera, los anticuerpos y las células T defienden contra el SARS-CoV-2, impidiendo que se adentre en las células del organismo y destruyendo las células que hayan sido infectadas.

Por otro lado, la Agencia Europea de Medicamentos confirma que la Hipra "será objeto de un estrecho seguimiento y se someterá a varias actividades que se aplican específicamente a las vacunas contra la COVID-19", en el marco del plan de vigilancia de la seguridad de las vacunas contra el coronavirus.

Por su parte, desde Hipra tienen que ir ofreciendo periódicamente actualizaciones sobre la seguridad de su vacuna. Y las autoridades europeas también elaborarán análisis independientes de la vacuna para conseguir "más información sobre la seguridad y los beneficios a largo plazo en la población general".

Ventajas de Hipra

Desde Hipra defienden que su vacuna tiene una mayor eficacia frente a todas las variantes, incluidas la BA.2 y BA4/BA.5. Además, sostienen que la vacuna es capaz de adaptarse a las próximas variantes.

Asimismo, insisten en que amplía el abanico de protección diferente al que usan Pfizer y Moderna de ARNm. También alegan que es más barata, más duradera, fácil de almacenar, debido a que no requiere congelación, y menos reactogénica, es decir, que presenta unos efectos adversos más leves como son el dolor en el lugar de la inyección, dolor de cabeza, cansancio o malestar.

Fuente: Onda Cero. Disponible en https://bit.ly/3M3UZ8b

Third dose of anti-Covid-19 booster to be approved in Cuba

Mar 30. The Cuban Ministry of Public Health suggested approving a third booster dose against COVID-19, starting next month, local press reported today.

This process will be phased and will include the population between 19 and 69 years of age.

According to Granma newspaper, it will begin once the period established for the application of the second booster is completed.

Health authorities in Cuba plan to determine the annual periodicity of the anti-Covid-19 vaccination, to be included in the National Immunization Program.

To date, 10 million 731 thousand 335 people have received at least one dose of one of the Cuban immunogens Soberana 02, Soberana Plus and Abdala.

Of these, 9 million 450 thousand 488 have already received the second dose and 9 million 148 thousand 870 have received the third dose.

A total of 90.7 percent of the Cuban population has been fully vaccinated and a total of 8,712,929 people have received booster doses.

Fuente: Prensa Latina News. Disponible en https://bit.ly/3M731NC

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20230316:20230331 as the publication date 88 records*

1.WO/2023/040121VACCINE SYSTEM FOR PREVENTING OR TREATING CANCER ON THE BASIS OF MULTIPLE CANCER CELLS AND/OR TUMOR TISSUE WHOLE CELL COMPONENTS, AND PREPARATION THEREFOR AND APPLICATION THEREOF
WO - 23.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/CN2021/142691 Solicitante SUZHOU ERSHENG BIOPHARMACEUTICAL CO., LTD. Inventor/a LIU, Mi
A vaccine system for preventing or treating cancer on the basis of multiple cancer cells and/or tumor tissue whole cell components, and a preparation method therefor and an application thereof. A water-soluble component and a non-water-soluble component of the whole cell components mixed with a plurality of cells are delivered by using nano-scale or micron-sized particles for preparing a vaccine for preventing and treating cancer. Both the water-soluble portion and the non-water-soluble portion are loaded in a nano-vaccine or a micro-vaccine, so that a variant protein or polypeptide generated by cancer in the cell components is loaded in the nano-vaccine or the micro-vaccine. Among the whole cell components, these substances, which have immunogenicity and are produced due to illness and mutation, can be used for preventing and treating cancer. Therefore, the nano-vaccine and/or micro-vaccine system of the whole cell components of different cell sources can be used for preparing a drug for preventing and/or treating cancer.

2.WO/2023/040073INTELLIGENT VACCINE NEBULIZATION SYSTEM, AND USAGE METHOD
WO - 23.03.2023
Clasificación Internacional G16H 40/67 Nº de solicitud PCT/CN2021/135893 Solicitante QINGDAO FUTURE MEDICAL TECHNOLOGY CO., LTD. Inventor/a WANG, Qixu
An intelligent vaccine nebulization system, and a usage method, which are characterized in that the intelligent vaccine nebulization system comprises an intelligent vaccine nebulization apparatus, a mist storage tank and a cloud server, wherein the intelligent vaccine nebulization apparatus comprises a host case body, and an intelligent main control module and functional modules on the host case body. The functional modules comprise an identity information input module, a vaccine information input module, a vaccine temporary storage module, a quantitative pipetting module, an aerosol output module, a mist storage tank management module, a human-computer interaction module and a communication interface. The intelligent main control module is connected to the functional modules, and exchanges information with the cloud server, so as to guarantee strict and accurate vaccination and management. Control is performed by the intelligent main control module, and by means of the steps of identity information and vaccine information input, vaccine temporary storage, quantitative pipetting, aerosol output, mist storage tank management, etc., access to the cloud server for vaccine recipients and nebulization-related

information records thereof is achieved, such that automatic, efficient and convenient vaccine nebulization and vaccination can be achieved.

3.WO/2023/044388VACCINE COMPOSITIONS
WO - 23.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/076494 Solicitante EMERGENT PRODUCT DEVELOPMENT GAITHERSBURG INC. Inventor/a LATA, James Paul
The present invention relates to a vaccine composition comprising an influenza Type A hemagglutinin stabilized stem nanoparticle (HA-ss-np); an aluminum hydroxide; a synthetic oligodeoxynucleotide adjuvant containing at least one CpG motif (CpG ODN); and a phosphate salt, wherein the HA-ss-np is not substantially adsorbed to the aluminum hydroxide, and wherein at least a portion of the CpG ODN is adsorbed to the aluminum hydroxide in the composition. The present disclosure also provides a method of inducing an immunological response against an influenza virus in a subject in need thereof, comprising administering an immunologically effective amount of the vaccine composition described herein. The present disclosure further provides a method of inducing an immunological response against an influenza virus in a subject in need thereof, comprising administering a dose of about 20 μg to about 300 μg of an HA-ss-np in a vaccine composition, wherein the vaccine composition further comprises an aluminum hydroxide; CpG ODN; and a phosphate salt, and wherein the HA-ss-np is not substantially adsorbed to the aluminum hydroxide, and wherein at least a portion of the CpG ODN is adsorbed to the aluminum hydroxide. Also provided herein is a method of producing a vaccine composition, comprising combining HA-ss-np with an adjuvant mixture, wherein the adjuvant mixture comprises a diluent solution comprising a phosphate salt; aluminum hydroxide; and CpG ODN, wherein the adjuvant mixture comprises CpG ODN-adsorbed aluminum hydroxide, and wherein the HA-ss-np is not substantially adsorbed to the aluminum hydroxide.

4.20230090746ATTENUATED SALMONELLA SYNTHESIZING ANTIGENS FOR VACCINATING AGAINST HELICOBACTER PYLORI
US - 23.03.2023
Clasificación Internacional A61K 39/02 Nº de solicitud 17798181 Solicitante UNIVERSITY OF FLORIDA RESEARCH FOUNDATION, INCORPORATED Inventor/a Roy CURTISS
Helicobacter pylori is a leading cause of gastric mucosal inflammation, peptic ulcers, and gastric adenocarcinoma. Emerging antimicrobial-resistant *H. pylori* has hampered the successful eradication of frequent chronic infections. Additionally, due to the absence of effective vaccines against *H. pylori,* a safe vaccine is highly demanded. Disclosed herein are innovative Protective Immunity Enhanced *Salmonella* Vaccine (PIESV) vector strains to deliver and express multiple *H. pylori* antigen genes Immunization of mice with a vaccine delivering the HpaA, NapA (also termed Hp-NAP), UreA and UreB antigens, provided sterile protection against *H. pylori* SS1 infection in 7 out of 10 tested mice. Compared to the control groups that had received PBS or a PIESV with an empty vector, immunized mice exhibited specific and significant cellular recall responses and antigen-specific IgG2c, IgG1, total IgG and gastric IgA antibody titers. Importantly, the mice immunized with the vaccine candidate showed a significant reduction in a load of an unidentified Gram-positive rod-shaped bacteria in their stomach compared to the control groups. In conclusion, a *Salmonella* Typhimurium-based live vaccine delivering four antigens shows promise as a safe and effective vaccine against *H. pylori* infection.

5.WO/2023/047419A VACCINE FOR CORONAVIRUS AND INFLUENZA VIRUS, AND METHOD FOR PREPARATION THEREOF
WO - 30.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/IN2022/050855 Solicitante BHARAT BIOTECH INTERNATIONAL LIMITED Inventor/a ELLA, Krishna Murthy

The invention discloses vaccine for coronavirus and influenza virus and method for preparation thereof. More specifically, the invention discloses seasonal viral vaccine i. e. coronavirus and influenza virus vaccine for prophylaxis of novel coronavirus (SARS-CoV-2) infection (COVID-19) and Influenza virus in mammals and method for preparation of such vaccine. The invention discloses the stable combination vaccine compositions of killed-inactivated SARS-CoV-2, Influenza virus (A and B strains) as antigens. The present invention further discloses method of adaptation and growth seasonal influenza (A and B) strains in cell culture and methods of inactivation and purification of influenza virus bulk antigen. The present invention also discloses SARS-CoV-2 vaccine formulation with inactivated Influenza viruses and use of the same to elicit immune response against the SARS-CoV-2 and Influenza viruses in mammals and humans.

6.20230083313PEPTIDE SEARCH SYSTEM FOR IMMUNOTHERAPY
US - 16.03.2023
Clasificación Internacional G16B 40/00 Nº de solicitud 17898662 Solicitante NEC Laboratories America, Inc. Inventor/a Renqiang Min
A system for binding peptide search for immunotherapy is presented. The system includes employing a deep neural network to predict a peptide presentation given Major Histocompatibility Complex allele sequences and peptide sequences, training a Variational Autoencoder (VAE) to reconstruct peptides by converting the peptide sequences into continuous embedding vectors, running a Monte Carlo Tree Search to generate a first set of positive peptide vaccine candidates, running a Bayesian Optimization search with the trained VAE and a Backpropagation search with the trained VAE to generate a second set of positive peptide vaccine candidates, using a sampling from a Position Weight Matrix (sPWM) to generate a third set of positive peptide vaccine candidates, screening and merging the first, second, and third sets of positive peptide vaccine candidates, and outputting qualified peptides for immunotherapy from the screened and merged sets of positive peptide vaccine candidates.

7.WO/2023/038834A PEPTIDE SEARCH SYSTEM FOR IMMUNOTHERAPY
WO - 16.03.2023
Clasificación Internacional G16B 30/00 Nº de solicitud PCT/US2022/042172 Solicitante NEC LABORATORIES AMERICA, INC. Inventor/a MIN, Renqiang
A system for binding peptide search for immunotherapy is presented. The system includes employing (101) a deep neural network to predict a peptide presentation given Major Histocompatibility Complex allele sequences and peptide sequences, training (103) a Variational Autoencoder (VAE) to reconstruct peptides by converting the peptide sequences into continuous embedding vectors, running (105) a Monte Carlo Tree Search to generate a first set of positive peptide vaccine candidates, running (105) a Bayesian Optimization search with the trained VAE and a Backpropagation search with the trained VAE to generate a second set of positive peptide vaccine candidates, using (107) a sampling from a Position Weight Matrix (sPWM) to generate a third set of positive peptide vaccine candidates, screening and merging (109) the first, second, and third sets of positive peptide vaccine candidates, and outputting (111) qualified peptides for immunotherapy from the screened and merged sets of positive peptide vaccine candidates.

8.WO/2023/048530ANTI-CANCER VACCINE COMPOSITION COMPRISING PEPTIDES DERIVED FROM TUMOR-ASSOCIATED ANTIGEN, AND ADJUVANT CONSISTING OF LIPOPEPTIDE AND IMMUNOACTIVE SUBSTANCE, AND USE THEREOF
WO - 30.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/KR2022/014368 Solicitante CHA VACCINE RESEARCH INSTITUTE CO., LTD Inventor/a YUM, Jung Sun
The present invention pertains to: an anti-cancer vaccine composition comprising [peptides derived from a tumor-associated antigen (TAA)] and [an adjuvant consisting of a lipopeptide and an immunoactive

substance]; and a use thereof. Specifically, the peptides derived from a tumor-associated antigen specifically bind to a human leucocyte antigen (HLA), a combination of the peptides having the above characteristics is mixed with the adjuvant in an optimal ratio to prepare a vaccine composition, and the vaccine composition is used for preventing or treating cancer.

9.20230078668Methods Of Vaccine Administration
US - 16.03.2023
Clasificación Internacional A61K 39/235 Nº de solicitud 17986286 Solicitante Zoetis Services LLC Inventor/a Cassius McAllister Tucker
This invention relates to a method of treating a dog for canine diseases comprising administering to the dog therapeutically effective amounts of a vaccine, wherein the vaccine comprises viral antigens, a bacterin, or both, and wherein the vaccine is administered subcutaneously or orally according to the schedules provided herein.

10.WO/2023/037387FREEZE-DRIED VIRAL COMBINATION VACCINE COMPOSITIONS AND PROCESS FOR PREPARATION THEREOF
WO - 16.03.2023
Clasificación Internacional Nº de solicitud PCT/IN2022/050805 Solicitante SERUM INSTITUTE OF INDIA PRIVATE LIMITED Inventor/a DHERE, Rajeev Mhalasakant
: FREEZE-DRIED VIRAL COMBINATION VACCINE COMPOSITIONS AND PROCESS FOR PREPARATION THEREOF The present disclosure relates to field of lyophilized/freeze-dried viral combination composition/formulation and methods for manufacturing and obtaining the composition comprising at least three live attenuated virus selected from a group of Coronavirus, Measles virus and Rubella virus; and stabilizers comprising of at least one carbohydrate, at least one amino acid and at least one hydrolyzed protein. The said lyophilized/freeze-dried viral combination composition/formulation is a vaccine composition that preserves the desired characteristics of each virus, including stability and immunogenicity. The composition can be safely administered subcutaneously as a combination vaccine composition such that the immunogenicity of each of the measles, rubella and SARS-CoV-2 is not inferior to that observed for each of the three viruses when administered as individual vaccines and is found to be equivalent or improved as compared to immunogenicity of SARS-CoV-2 vaccine given intranasally. The purification process is devoid of chromatography steps.

11.20230086736MICROEMULSION-BASED VACCINE DELIVERY SYSTEM, PREPARATION METHOD THEREFOR AND USE THEREOF
US - 23.03.2023
Clasificación Internacional A61K 9/107 Nº de solicitud 17909199 Solicitante Sichuan University Inventor/a Xun SUN
The present disclosure provides a microemulsion-based vaccine delivery system, and further provides a preparation method and an application thereof. Using the microemulsion absorbing a series of metal ion compounds, and adding an antigen in a preparation process, antigen entrapment can be realized and a stable vaccine preparation is obtained. The prepared vaccine can effectively be taken up by an antigen-presenting cell and effectively delivered to lymph nodes to induce an antigen-specific immune response, and the same has a wide application prospect.

12.WO/2023/048111VACCINE INCLUDING NONENCAPSULATED STRAIN AS ANTIGEN
WO - 30.03.2023
Clasificación Internacional A61K 39/09 Nº de solicitud PCT/JP2022/034873 Solicitante NATIONAL AGRICULTURE AND FOOD RESEARCH ORGANIZATION Inventor/a WATANABE Atsushi
A problem addressed by the present invention is to provide a vaccine effective in preventing infection by Streptococcus spp. that cause mastitis in livestock, etc. Specifically, the present invention provides a

vaccine that contains a nonencapsulated strain of a Streptococcus spp. as an antigen, in particular a vaccine for preventing mastitis caused by Streptococcus uberis infection.

13.WO/2023/043868CORONAVIRUS VACCINE, YEAST STRAINS, METHODS OF DETECTION, METHODS OF TREATMENT AND USES THEREOF
WO - 23.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/043578 Solicitante CONSEJO NACIONAL DE INVESTIGACIONES CIENTÍFICAS Y TÉCNICAS (CONICET) Inventor/a IDROVO HIDALGO, Tommy
The invention refers to a vaccine and a method to obtain coronavirus antibodies, yeast strains, methods of detection, methods of treatment and uses thereof. A coronavirus vaccine comprising the deglycosylated RBD domain of the coronavirus spike protein and one or more adjuvants, wherein the RBD domain is produced in P. pastoris. Among others, the amino acid sequence of the RBD domain may be the sequence set forth in SEQ ID NO. 1 or SEQ ID NO. 2, wherein the vaccine may further comprise one or more adjuvants.

14.WO/2023/040127USE OF CANCER VACCINE SYSTEM BASED ON WHOLE CELL COMPONENTS IN PREPARATION OF DRUGS FOR CROSS-PREVENTION OR TREATMENT OF HETEROGENEOUS CANCERS
WO - 23.03.2023
Clasificación Internacional A61P 35/00 Nº de solicitud PCT/CN2021/143434 Solicitante SUZHOU ERSHENG BIOPHARMACEUTICAL CO., LTD Inventor/a LIU, Mi
Provided is the application of a cancer vaccine system based on whole-cell components in the preparation of drugs for the cross-prevention or treatment of heterogeneous cancers, wherein the vaccine system uses nano-size or micro-size particles to deliver water-soluble components and/or non-water-soluble components of whole-cell components. As the water-soluble portion and/or the non-water-soluble portion are both loaded inside and/or on the surface of the nano-size or micro-size particles, variant proteins or polypeptides produced by cancers in the cell components are therefore also loaded inside and/or on the surface of the nano-size or micro-size particles. The immunogenic substances produced by mutation in the whole-cell components can be used for preventing and treating cancers. Therefore, the vaccine system based on whole cell components can prepare drugs for the cross-prevention and/or treatment of heterogeneous cancers.

15.WO/2023/037320MUCOSAL MESSENGER RNA VACCINE
WO - 16.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/IB2022/058528 Solicitante INTRON BIOTECHNOLOGY, INC. Inventor/a YOON, Seong Jun
The present invention is related to a mucosal mRNA vaccine. More specifically, the present invention relates to novel mucosal mRNA vaccine based on a peptide-conjugated, mRNA loaded nanoparticle with enhanced vaccine efficacy, and a method of preparing the same.

16.WO/2023/036191VACCINE FOR NOVEL CORONAVIRUS SARS-COV-2 DELTA VARIANT AND APPLICATION
WO - 16.03.2023
Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CN2022/117601 Solicitante LIVZON MABPHARM INC. Inventor/a LIN, Jingjing
A vaccine for a novel coronavirus SARS-CoV-2 Delta variant and an application, the vaccine comprising a fusion protein, and the fusion protein comprising: (1) an interferon or a functional fragment thereof; (2) a novel coronavirus SARS-CoV-2 delta strain S protein or a functional fragment thereof; and (3) an immunoglobulin Fc region. The vaccine can improve the immunogenicity and neutralizing antibody titer for

mutant novel coronavirus antigens by means of the fusion-expressed IFN; it ensures efficient production of neutralizing antibodies, and can significantly improve the defense against mutant strains.

17.WO/2023/048532NOVEL REOVIRUS-BASED VACCINE PLATFORM AND USE THEREOF
WO - 30.03.2023
Clasificación Internacional G16B 5/00 Nº de solicitud PCT/KR2022/014373 Solicitante VIROCURE, INC. Inventor/a YOO, Haeng Jun
The present invention relates to a novel reovirus-based vaccine platform and has been completed by finding that a part of the S1 gene of reovirus can be replaced by various exogenous epitope-coding genes whereby the recombinant reovirus thus constructed infects target cells not only to induce the expression of the epitopes, but also to activate immune functions of immune cells against the epitopes, thus enabling effective prevention and treatment of corresponding epitope-related diseases. Using the reovirus-based vaccine platform of the present invention, vaccines carrying various epitopes can be prepared through relatively simple genetic manipulation technology and can be administered in various modes, including oral administration. Thus, the platform can find various applications in the field of preventing and treating various cancers and infectious diseases including SARS-CoV-2 virus infection.

18.20230081457PROCESS FOR DESIGNING A RECOMBINANT POXVIRUS FOR A THERAPEUTIC VACCINE
US - 16.03.2023
Clasificación Internacional G16B 30/10 Nº de solicitud 17787980 Solicitante TRANSGENE Inventor/a Benoît Grellier
The present invention generally relates to a process for designing a recombinant poxvirus for a therapeutic vaccine, i.e. personalized cancer vaccine, said recombinant poxvirus comprising one or more expression cassettes, each for expression of a fusion of a plurality of peptides, i.e. neopeptides, characterized in that it comprises performing by processing means (**11**) of a server (**1**) the steps of : (a) selecting a first subset of candidate peptides, wherein said peptides present transmembrane scores below a TMS threshold; b) determining an optimal distribution of the candidate peptides from said first subset to the expression cassette(s) among a plurality of possible distributions, wherein said optimal distribution presents, if there are at least two expression cassettes, the lowest range between the hydropathy scores of at least two expression cassettes; (c) for each expression cassette, determining an optimal slot allocation of the candidate peptides as function of cassette slot occupancy rule so as to select the peptide fusion with the lowest TM score; (d) determining a DNA transfer sequence comprising the nucleotide sequence of the one or more expression cassette(s) for generation of said recombinant poxvirus.

19.2029106CTL EPITOPE PEPTIDE OF AFRICAN SWINE FEVER AND USE THEREOF
NL - 20.03.2023
Clasificación Internacional A61P 31/20 Nº de solicitud 2029106 Solicitante CHINA AGRICULTURAL UNIVERSITY Inventor/a Xiaohui Wei
The disclosure provides CTL epitopes of African swine fever (ASF) and applications thereof, belonging to the technical field of peptide vaccine preparation. According to the 5 disclosure, African swine fever virus (ASFV) peptides that can be stably bound to MHC class I are screened by bioinformatics methods and in vitro methods for identifying MHC Ibinding motifs. The screened peptides are capable of initiating CD8+ T cells to generate immune response and stimulating the body to specifically generate CTL. The amino acid sequence of the peptides is set forth in any one of SEQ ID No: 1-18. The peptide provided 10 by the disclosure can be used for preparing specific epitope vaccine or peptide vaccine of ASF. It has high safety and good specificity, and has potential application value in preventing and controlling African swine fever.

20.20230084183VACCINE COMPRISING EPITOPE OF HEAT SHOCK PROTEIN, AND USE THEREOF

US - 16.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17885255 Solicitante ASTON SCI. CO., LTD. Inventor/a Kyong Hwa PARK
A vaccine containing an epitope of a heat shock protein 90 and uses thereof are disclosed. The epitope(s) of heat shock protein 90 has the amino acid sequence of SEQ ID NO: 1 and/or 2. A multi-epitope vaccine containing the epitope(s) and a method for treating or preventing cancer using the same are disclosed.

21.20230090422NOVEL CORONAVIRUS S PROTEIN DOUBLE-REGION SUBUNIT NANO-VACCINE BASED ON BACTERIAL COMPLEX
US - 23.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17908916 Solicitante SUN YAT-SEN UNIVERSITY Inventor/a Hui ZHANG
The present application is related to a novel coronavirus S protein double-region subunit nano-vaccine based on a bacterial complex. In the present invention, a receptor binding domain (RBD) and a fusion peptide (FP) of a virus are used together as double antigens, and are connected to a bacterial complex (such as PF_Ferritin or Lumazine Synthase (LS)) to form a fusion protein, so as to achieve antigen multimerization; and then expression is performed by using a eukaryotic cell expression system, and a 24-mer nano-antigen or a 60-mer nano-antigen can be formed by means of self-assembly action. The solution can overcome the defect of insufficient immunogenicity of an RBD monomer. The obtained vaccine can significantly increase the level of a neutralizing antibody against a virus in a host, and the resulting antibody has the capability of strongly blocking a virus from invading a target cell.

22.20230084012VACCINE FOR USE AGAINST CORONAVIRUS AND VARIANTS THEREOF
US - 16.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17475001 Solicitante Globe Biotech Limited Inventor/a Kakon Nag
A novel transgene for use to produce a coronavirus vaccine is provided. The transgene encodes: i) an RNA polymerase promoter; ii) a 5' UTR; iii) a secretory sequence; iv) a coronavirus spike protein component, wherein the spike protein component incorporates a variant sequence at amino acid position 614 of a native spike protein; and v) a 3' UTR and poly A sequence. A vaccine is also provided comprising the transgene or an mRNA transcript thereof.

23.202121041398SAVING CAPITALISM FROM CAPITALISTIC ABUSES IN PERPETUALPOVERTY DOCTRINE TECHNOLOGIES
IN - 17.03.2023
Clasificación Internacional A61K / Nº de solicitud 202121041398 Solicitante BHASKER THAKORBHAI PATEL HUF Inventor/a BHASKER THAKORBHAI PATEL HUF
Dr Abdul Kalam Bhasker Patel Doctrine' is unique and central tobailout thru unique proprietary Arbitrage technologies for CC-(Climate Changes) Stranded Assets, reduce Rural poverty andmultiply Farmers Income and attain targeted zero poverty linewithin UMIPURAs• (1) NetZero Miracle Vaccine, (2) BioSequestration Miracle Vaccine,(3) Early Warning Pandemic Vaccine

24.4149531IMPFSTOFF GEGEN SARS-COV VIRUS
EP - 22.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21724179 Solicitante OSE IMMUNOTHERAPEUTICS Inventor/a COSTANTINI DOMINIQUE
The present invention relates to a vaccine composition and its use against a Severe acute respiratory syndrome-related coronavirus.

25.20230087422TREATMENT OF HPV-RELATED DISEASES
US - 23.03.2023

Clasificación Internacional A61K 39/12 Nº de solicitud 17797438 Solicitante ISA Pharmaceuticals B.V. Inventor/a Thomas Johannes Maria Beenakker
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.

26.4149527SELEKTIVES TARGETING DER TREML1/MD2-INTERAKTION DURCH KLEINE PEPTIDE ODER PROTEINE UND DESSEN VERWENDUNG FÜR IMPFSTOFFADJUVANTIEN
EP - 22.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 21803868 Solicitante ASCENDO BIOTECHNOLOGY INC Inventor/a LU YEN-TA
A pharmaceutical composition for boosting an immune response contains TREM-like transcript-1 (TREML1) extracellular domain (ECD) or stalk polypeptide. The TREML1 ECD or stalk polypeptide is derived from human or mouse TREML1. The pharmaceutical composition further contains an antigen as a vaccine, wherein the TREML1 ECD or stalk polypeptide functions as an adjuvant or immune booster.

27.20230078675VIRUS-LIKE PARTICLE WITH EFFICIENT EPITOPE DISPLAY
US - 16.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17968115 Solicitante University of Copenhagen Inventor/a Adam Frederik Sander Bertelsen
The invention relates to a virus-like particle (VLP) based vaccine. The virus-like particle constitutes a non-naturally occurring, ordered and repetitive antigen array display scaffold which can obtain a strong and long-lasting immune response in a subject. The VLP-based vaccine may be used for the prophylaxis and/or treatment of a disease including, but is not limited to, cancer, cardiovascular, infectious, chronic, neurological diseases/disorders, asthma, and/or immune-inflammatory diseases/disorders.

28.4151725VERFAHREN ZUR HERSTELLUNG EINES ADENOVIRUSVEKTORIMPFSTOFFS MITTELS PERFUSIONSKULTURVERFAHREN
EP - 22.03.2023
Clasificación Internacional C12N 5/10 Nº de solicitud 21888679 Solicitante CANSINO BIOLOGICS INC Inventor/a XIAO MENG
Provided is a method for preparing an adenovirus vector vaccine by means of a perfusion culture process. The method comprises a step of culturing adenovirus host cells, and in particular a step of adjusting the perfusion rate by means of at least two stages according to cell density. The method increases the single cell yield of a virus after infection and the specific activity of a virus harvest liquid while achieving high-density growth of adenovirus host cells.

29.WO/2023/046589ANTI-VIBRATION DEVICE FOR TRANSPORTING A SUBSTANCE SUCH AS A MESSENGER RNA VACCINE
WO - 30.03.2023
Clasificación Internacional B65D 81/07 Nº de solicitud PCT/EP2022/075779 Solicitante CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE Inventor/a SANTIN, Jean-Jacques
The invention relates to a case (1) for transporting a substance such as a messenger RNA vaccine, comprising a container (2), a damping material (10) contained in the container (2) and a storage structure (8) immersed in the damping product (10), the storage structure (8) forming cavities (56) for receiving syringes containing said substance.

30.WO/2023/043901MRNA VACCINES AGAINST HANTAVIRUS
WO - 23.03.2023

Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/043631 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a BUKREYEV, Alexander
One solution to the problem of Hantavirus pathology is design, production, and administration of a nucleic acid vaccine (NAV). In certain aspect the NAV is an mRNA vaccine. Certain embodiments are directed to the use of a polyprotein, which is cleaved to produce Gn (N-terminal) and Gc (C-terminal) glycoproteins, the Gn glycoprotein, the Gc glycoprotein, or the Gn and Gc glycoproteins hantaviruses as protective antigen(s) for development of hantavirus vaccines. The Gn/Gc protein, which is cleaved post-translationally to individual Gn and Gc proteins, can be used as an antigen for vaccines. In case of DNA and RNA-based vaccines, the complete M gene, which encodes the complete single open reading frame, which is cleaved post- translationally in the Gn and Gc proteins or individual open reading frames encoding either Gn or Gc, is used.

31.WO/2023/048759SARS-COV-2 RNA VACCINE COMPOSITIONS AND METHODS OF USE
WO - 30.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/US2022/013513 Solicitante HDT BIO CORP. Inventor/a REED, Steven Gregory
The disclosure provides compositions, methods of treatment, and methods of making and using compositions to deliver a nucleic acid to a subject. Compositions described herein include lipid carriers, optionally including an inorganic particle, capable of admixing with nucleic acids. Methods of using the compositions as a COVID-19 vaccine for the treatment of a coronavirus infection are also provided.

32.WO/2023/049794RAPID ACTING VACCINE AGAINST NIPAH VIRUS
WO - 30.03.2023
Clasificación Internacional A61K 39/155 Nº de solicitud PCT/US2022/076850 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a FOSTER, Stephanie, L.
The present invention includes methods of making, compositions, or vaccinations comprising a recombinant vesicular stomatitis vims (rVSV) viral vector that expresses a Nipah Virus protein antigen, wherein the rVSV vector comprises one or more heterologous polynucleotides coding for and expressing a Nipah Virus NiVB G-protein antigen; wherein the NiVB G-protein comprises an amino acid sequence as set forth in SEQ ID NO: 6, or wherein the heterologous polynucleotide encodes a. polypeptide coding for the NiVB G-protein antigen comprising at least 90% sequence identity to an amino acid sequence as set forth in SEQ ID NO: 6, or 90% sequence identity to a nucleic acid sequence as set forth in SEQ ID NO: 2, wherein the composition or vaccine is effective to reduce or prevent a Nipah Virus infection at 3 days.

33.4151647AMINOSÄURESEQUENZ VON REKOMBINANTEN ZECKENENZEPHALITIS-VIRUS-ÄHNLICHEN PARTIKELN UND IHRE VERWENDUNG ALS IMPFSTOFFANTIGEN ZUR PRÄVENTION VON ZECKENENZEPHALITIS-VIRUS-INFEKTIONEN
EP - 22.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud 22173183 Solicitante UNIV OF GDANSK Inventor/a KROL EWELINA
The first aspect of the invention relates to the amino acid sequence of the recombinant virus-like particles (VLPs) shown as the sequence number SEQ 1, based on the natural TBEV proteins: the prM and E protein. The change in the sequence of natural proteins refers, inter alia, to the introduction of additional modified sequences into the sequence of natural proteins, i.e., the signal sequence for LMSAP1 phosphatase from Leishmania mexicana, e.g., the signal sequence from the LEXSinduce3 Expression Kit expression system and P2A sequence, which result in more efficient overproduction of VLPs and increase their immunogenicity. A second aspect of the invention relates to recombinant VLPs with the amino acid sequence according to the invention (SEQ 1) for medical use in the prevention and control of tick-borne encephalitis, especially when used in a form of a vaccine component.

34.20230080694METHOD FOR IMPROVING ANTIGEN IMMUNOGENICITY, CORONAVIRUS ANTIGEN, USE THEREOF, RECOMBINANT VECTOR, EXPRESSION KIT, TRANSGENIC CELL LINE, RECOMBINANT BACTERIUM, CORONAVIRUS VACCINE, PREPARATION METHOD OF ANTIGEN AND NUCLEOTIDE SEQUENCE
US - 16.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17801797 Solicitante SUN YAT-SEN UNIVERSITY Inventor/a Hui ZHANG
Disclosed in the present invention is a *Helicobacter pylori* ferritin-based novel coronavirus S protein double-region subunit nanovaccine. According to the present invention, both a receptor binding domain (RBD) and a fusion peptide (FP) of a virus are taken as double antigens and are connected with a *Helicobacter pylori* multimeric protein (HP_Ferritin) to form a fusion protein RBD-FP-HP_Ferritin, so that antigen multimerization is realized; and an eukaryotic cell expression system is then utilized for expression, so as to form a 24-mer nano-antigen by means of the self-assembly action of the HP_Ferritin. According to the solution, the defect that RBD monomers are insufficient in immunogenicity can be overcome; the obtained vaccine can remarkably improve the level of neutralizing antibodies of a host to viruses; and the generated antibodies have the capacity to strongly prevent the viruses from invading target cells.

35.20230081679SURFACTANT VESICLES FOR VACCINE FORMULATION, TARGETED DRUG DELIVERY, AND TRANSFECTION
US - 16.03.2023
Clasificación Internacional A61K 9/127 Nº de solicitud 17929630 Solicitante University of Maryland, College Park Inventor/a Philip R. DESHONG
The present disclosure provides catanionic surfactant vesicles (SVs). The vesicles may be functionalized on their outer leaflet such that they may be biologically active. The vesicles may encapsulate (at least partially in the lumen and/or at least partially in the leaflet) one or more small molecules, one or more RNAs, one or more DNAs, and/or one or more proteins/peptides. Also provided are compositions comprising the vesicles (e.g., vaccine compositions comprising the vesicles) and methods of making and using the same.

36.WO/2023/039252EXOSOMAL NUCLEIC ACID VACCINE COMPOSITION FOR PROTECTION AGAINST SARS-COV-2 INFECTION AND DISEASE
WO - 16.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/043230 Solicitante THE JOHNS HOPKINS UNIVERSITY Inventor/a GOULD, Stephen J.
The present invention relates to an extracellular vesicle (EV)-based nucleic acid composition or vaccine (EV-NAV), comprising EVs loaded with polynucleotides each encoding, e.g., the SARS-CoV-2 spike protein, and polynucleotides each encoding, e.g., SARS-CoV-2 nucleocapsid protein, wherein said polynucleotides are designed to be simultaneously expressed, and to induce a humoral immune response and/or a cellular immune response, in a subject. The present invention also relates to compositions and methods for the design, preparation, manufacture, formulation, and therapeutic or prophylactic use of said EV-NAVs, e.g., exosomes loaded with mRNAs encoding multiple surface and cytoplasmic antigens derived from, e.g., SARS-CoV-2, to elicit strong humoral and cellular immune responses.

37.4151232REKOMBINANTER IMPFSTOFF GEGEN COVID-19 AUF DER BASIS EINES PARAMYXOVIRUS-VIRUSVEKTORS
EP - 22.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21804807 Solicitante LABORATORIO AVI MEX S A DE C V Inventor/a LOZANO-DUBERNARD BERNARDO

An active or inactivated recombinant vaccine against COVID-19 is described that comprises a Newcastle disease viral vector and a pharmaceutically acceptable carrier, adjuvant and/or excipient, characterized in that the viral vector is a virus capable of generating a cellular immune response that has a SARS-CoV-2 exogenous nucleotide sequence inserted.

38.WO/2023/044344VIRUS-LIKE PARTICLE STABLY EXPRESSED BY ANIMAL CELLS AS VACCINE ANTIGEN AGAINST COVID-19 AND INFLUENZA VIRUS
WO - 23.03.2023
Clasificación Internacional C12N 15/85 Nº de solicitud PCT/US2022/076431 Solicitante ACADEMIA SINICA Inventor/a HSIAO, Pei-wen
The disclosure provides an animal cell stably expressing a virus-like particle (VLP). The disclosure also provides a method for manufacturing a virus-like particle, a virus-like particle, a vaccine composition, a method for preventing viral infection, and a method for producing antibodies.

39.4149956RSV-IMPFSTOFF MIT EINER ODER MEHREREN P-GENMUTATIONEN
EP - 22.03.2023
Clasificación Internacional C07K 14/135 Nº de solicitud 21729760 Solicitante US HEALTH Inventor/a COLLINS PETER L
Provided is a polynucleotide encoding a respiratory syncytial virus (RSV) variant having an attenuated phenotype comprising a modified RSV genome or antigenome that encodes a mutant RSV protein P that differs from a parental RSV protein P at one or more amino acid residues. In some embodiments, the polynucleotide is recombinant. The invention also relates to methods of vaccinating an animal with the RSV variant or a pharmaceutical composition containing the RSV variant or inducing an immune response by administering the RSV variant to an animal, and further relates to methods of producing an RSV variant vaccine. In some embodiments, the animal is a human.

40.202327006333VACCINE ADJUVANTS AND METHODS OF SYNTHESIZING AND USING THE SAME
IN - 17.03.2023
Clasificación Internacional C07C 13/20 Nº de solicitud 202327006333 Solicitante AMYRIS, INC. Inventor/a PADDON, Christopher John
The disclosure provides compounds useful as adjuvants in vaccines, as well as methods of synthesizing such compounds and methods of using such compounds in the formulation of a vaccine. The disclosure also features methods of administering such vaccines to a subject (e.g., a mammalian subject, such as a human) in order to treat or prevent one or more diseases, such as a disease caused by a viral or bacterial infection.

41.WO/2023/037000A RNA VACCINE COMPRISING AN RNA POOL GENERATED FROM A DOUBLE-STRANDED DNA POOL
WO - 16.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2022/075375 Solicitante ONCODNA Inventor/a DETIFFE, Jean-Pol
A process for producing a RNA vaccine comprising a plurality of epitopes specifically deduced from a target comprising the steps of: obtaining a plurality of synthetic DNA constructs in pool encoding (i) a plurality of different epitopes deduced from the said target, and of transcribing in vitro the said plurality of synthetic DNAs into a corresponding plurality of RNAs, wherein the said target is a peptide from an infectious agent or cancer neoepitopes specifically identified in one patient and having an amino acid sequence different, by at least one amino acid, from the amino acid sequences naturally present in normal cells of the patient.

42.20230081767SYSTEMS AND METHODS FOR THE PREPARATION OF VACCINES UTILIZING PREDICTABLY INACTIVATED PATHOGENS
US - 16.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 18058185 Solicitante Madhavan Pisharodi Inventor/a Madhavan Pisharodi
A method is described for producing a vaccine from a neutered pathogenic source. The neutered pathogenic source may be a SARS-COV-2 virus that is neutered with a defined dose of UV-C light. The neutered SARS-COV-2 viral vaccine is administered through an inhalation pump.

43.WO/2023/044327RECOMBINANT VACCINE COMPOSITIONS
WO - 23.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/076404 Solicitante COLORADO STATE UNIVERSITY RESEARCH FOUNDATION Inventor/a JACKSON, Mary
The present disclosure provides materials and methods related to engineered bacteria for use in vaccines. In particular, the present disclosure provides novel compositions and methods for generating vaccine compositions comprising bacteria (e.g., Mycobacterium bovis BCG) engineered to express immunogenic polypeptides and fusion proteins to treat and/or prevent infection from a pathogenic organism (e.g., coronavirus).

44.20230089882PERSONALIZED IMMUNOTHERAPY AGAINST SEVERAL NEURONAL AND BRAIN TUMORS
US - 23.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17851417 Solicitante Immatics Biotechnologies GmbH Inventor/a Sabrina KUTTRUFF-COQUI
The present invention relates to peptides, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated cytotoxic T cell (CTL) peptide epitopes, alone or in combination with other tumor-associated peptides that serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses. The present invention relates to peptide sequences and their variants derived from HLA class I and class II molecules of human tumor cells that can be used in vaccine compositions for eliciting anti-tumor immune responses.

45.20230086390Anti COVID-19 Therapies targeting nucleocapsid and spike proteins
US - 23.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17198164 Solicitante ImmunityBio, Inc. Inventor/a Patrick Soon-Shiong
Disclosed herein are methods for inducing immunity against a virus such as a coronavirus in the mucosal tissue of a patient, include administering a vaccine composition to the patient by oral administration (e.g., nasal injection, nasal inhalation, oral inhalation, and/or oral ingestion). Also disclosed are compositions for assaying the presence of antiviral antibodies induced by the administered vaccine or the presence of viral proteins in a saliva sample include a stabilizing solution and may also include the use of aragonite particle beads. Compositions and methods are presented for prevention and/or treatment of a coronavirus disease wherein the composition comprises a recombinant entity. The recombinant entity is bivalent, comprising a nucleic acid encoding a coronavirus 2 nucleocapsid protein CoV2 nucleocapsid protein fused to an endosomal targeting sequence, and a nucleic acid encoding a CoV2 spike protein sequence optimized for cell surface expression.

46.WO/2023/039396UNIVERSAL INFLUENZA VACCINE AND METHODS OF USE
WO - 16.03.2023

Clasificación Internacional A61K 9/127 Nº de solicitud PCT/US2022/076013 Solicitante THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA Inventor/a HENSLEY, Scott
Provided is a twenty-hemagglutinin antigen (HA) universal influenza vaccine comprising HA antigens from each known influenza A and influenza B lineage and methods of use thereof to treat or prevent influenza.

47.20230089516Vaccine and Methods for Detecting and Preventing Filariasis
US - 23.03.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17798189 Solicitante THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS Inventor/a Ramaswamy KALYANSUNDARAM
The present invention is a multivalent immunogenic composition for immunizing an animal against filariasis. In some embodiments, the antigens of the multivalent immunogenic composition are protein-based, DNA-based, or a combination thereof. This invention also provides a method and kit for detecting a filarial nematode and determining vaccine efficacy.

48.WO/2023/042181RECOMBINANT VACCINE AGAINST COVID-19 TO PRODUCE CELLULAR RESPONSE IN INDIVIDUALS WITH PRE-EXISTING IMMUNITY
WO - 23.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/IB2022/058886 Solicitante LABORATORIO AVI-MEX, S.A. DE C.V. Inventor/a LOZANO DUBERNARD, Bernardo
A recombinant vaccine is described, which comprises an active Newcastle disease viral vector (NDV) having inserted an exogenous nucleotide sequence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), without adjuvant, capable of generating a significant cellular response in T cells (CD4+ or CD8+) when stimulated with the S protein of the SARS-CoV-2 virus or proteins derived from it in individuals with previous immunity.

49.4149540MANIPULATION VON CORONAVIRUS-SPIKE-PROTEINEN ALS IMPFSTOFFANTIGENE, IHR DESIGN UND VERWENDUNGEN
EP - 22.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 21803846 Solicitante GREFFEX INC Inventor/a STAERZ UWE D
A vaccine for preventing CoV infection includes at least one DNA, RNA or protein sequence for S protein with at least one modification which is a full deletion or partial deletion of the SI region or a partial or full replacement of the SI region. A method of vaccinating a mammal subject against infection from at least one group of CoV includes separating a broad group of CoV into homology groups, creating a modified S protein containing at least one modification at its S1 region, and identifying at least one consensus sequence for each homology group which has a sequence identity of greater than 60% to all other members of the homology group. The consensus sequence is a protein sequence for the modified S protein, a DNA sequence encoding the modified S protein, and an RNA sequence encoding the modified S protein.

50.WO/2023/046898HBV VACCINE INDUCING PRES-SPECIFIC NEUTRALIZING ANTIBODIES
WO - 30.03.2023
Clasificación Internacional C07K 14/02 Nº de solicitud PCT/EP2022/076518 Solicitante VIRAVAXX AG Inventor/a TULAEVA, Inna
A Hepatitis B virus (HBV) vaccine comprising a fusion protein of a preS polypeptide fused to at least one grass pollen allergen peptide, for use in the treatment of a subject to induce HBV neutralizing antibodies, wherein the subject is an immune tolerant human subject and said treatment comprises repeated vaccination to break immune tolerance against HBV.

51.20230093418Compositions and Methods of Manufacturing Trivalent Filovirus Vaccines
US - 23.03.2023

Clasificación Internacional A61K 39/12 Nº de solicitud 17902662 Solicitante Soligenix, Inc. Inventor/a Oreola Donini
Disclosed is a stable immunogenic composition capable of eliciting a robust and durable immune response, comprising at least one antigen consisting of a filovirus glycoprotein and at least one nano-emulsion adjuvant which are co-lyophilized and can be reconstituted immediately prior to use. Also disclosed is a vaccine composition comprising at least two antigens, wherein each antigen is specific to a different genus of filovirus and which also comprises at least one nano-emulsion adjuvant.

52.WO/2023/036814CORONAVIRUS FUSION PROTEIN
WO - 16.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/EP2022/074845 Solicitante UNIVERSITE DE TOURS Inventor/a AUBREY, Nicolas
The present invention relates to a fusion protein comprising fragments of the spike (S) protein and of the nucleoprotein (N) of a coronavirus. The present invention further relates to a vaccine, a composition, a pharmaceutical composition, or a diagnostic kit comprising the fusion protein, to a method for diagnosing an infection by a coronavirus and to a method for preventing or treating a coronavirus infection based on the use of the fusion protein.

53.4149488ANTITHROMBISCHES MOLEKÜL MIT APAC-AKTIVITÄT ZUR PRÄVENTION UND/ODER BEHANDLUNG VON THROMBOZYTOPENIE
EP - 22.03.2023
Clasificación Internacional A61K 31/727 Nº de solicitud 21723774 Solicitante APLAGON OY Inventor/a LASSILA RIITTA
The invention relates to an anti-thrombotic molecule having both anti-platelet and anti-coagulant (APAC) activity and, in particular, its use as a medicament to prevent and/or treat heparin-induced thrombocytopenia (HIT) type I or II; and/or heparin-induced thrombocytopenia and thrombosis (HITT); and/or heparin-independent thrombocytopenia autoimmune HIT (aHIT); and/or vaccine-induced thrombocytopenia and thrombosis (VITT). The invention has use in both the medical and veterinary industries.

54.4149532IMPFSTOFF GEGEN DEN SCHWEREN AKUTEN ATEMWEGSSYNDROM-CORONAVIRUS 2 BEI KATZEN
EP - 22.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21724293 Solicitante INTERVET INT BV Inventor/a MOGLER MARK A
The present invention provides new vaccines for felines and ferrets to aid in reducing shedding of severe acute respiratory syndrome coronavirus 2 by infected felines or ferrets. Methods of making and using the vaccines alone or in combinations with other protective agents are also provided.

55.WO/2023/036947BIOLOGICALLY PRODUCED NUCLEIC ACID FOR VACCINE PRODUCTION
WO - 16.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2022/075140 Solicitante UNIVERSITÄT BASEL Inventor/a KIPFER, Enja Tatjana
The invention relates to a biologically produced nucleic acid sequence comprising two or three primary nucleic acid sequence parts of SARS-CoV-2 and not more than three secondary nucleic acid sequence parts, wherein a secondary nucleic acid sequence part encodes an amino acid sequence having the function of a SARS-CoV-2 amino acid sequence encoded by ORF3a, ORF6, ORF7a or ORF8. The invention further relates to a host cell or a kit for producing the nucleic acid of the invention, a vector encoding the nucleic acid of the invention and products that can be obtained by the expression of the nucleic acid of the invention such as virus envelopes. The invention further relates a pharmaceutical

composition comprising the nucleic acid of the invention or products derived thereof, preferably for use in the prevention of SARS-CoV-2.

56.4149542FUSIONSPROTEIN MIT IMMUNVERSTÄRKENDER WIRKUNG
EP - 22.03.2023
Clasificación Internacional A61K 39/39 Nº de solicitud 21731324 Solicitante TRANSMED GOTHENBURG AB Inventor/a ARABPOUR MOHAMMAD
The present invention relates to a fusion protein, a nucleotide sequenc encoding such a fusion protein, the use thereof as an adjuvant or vaccine. The fustin protein comprises a bacterial exotoxin and a single chain antibody fragment (scFv) that specifically binds to a surface marker on dendritic cells. The fusion protein is advantageously administered intranasally, orally or intrapulmonarily.

57.4149541HEPATITIS C NUKLEINSÄURE IMPFSTOFF ENTHALTEND EIN DELETIERTES E2 POLYPEPTID MIT VARIABLER DOMÄNE
EP - 22.03.2023
Clasificación Internacional A61K 39/29 Nº de solicitud 21804220 Solicitante MACFARLANE BURNET INSTITUTE FOR MEDICAL RES AND PUBLIC HEALTH LIMITED Inventor/a DRUMMER HEIDI
A pharmaceutical composition comprising a nucleic acid molecule encoding a variable domain deleted E2 polypeptide of HCV (e.g., E2Delta123). The composition is suitable for use, for use, or when used, in the treatment or prevention of HCV infection. The nucleic acid molecule may be DNA or RNA or a modified or synthetic form, or contained within a plasmid, a viral or non-viral vector for vaccination, a polynucleotide expression cassette, or a cell for vector propagation. Methods of administration as prime and boost vaccinations are also provided.

58.4150071VIRUSNEUTRALISIERUNG DURCH LÖSLICHE REZEPTORFRAGMENTE DES ACE-2-REZEPTORS
EP - 22.03.2023
Clasificación Internacional C12N 9/48 Nº de solicitud 21724306 Solicitante LYSANDO AG Inventor/a MILLER STEFAN
The present invention refers to a soluble receptor fragment (SRF) of the ACE-2 receptor, wherein the SRF comprises the peptidase domain (PD) of ACE-2 or a fragment and/or derivates thereof. Moreover, the present invention refers to SRF according to the present invention for use in a method for treatment of the human or animal body by surgery or therapy, as a vaccine or in diagnostic methods practiced on the human or animal body or with fluids or other material from the human or animal body. In addition, the present invention provides SRFs for use in a method of treating and/or preventing a virus infection, in particular a virus infection caused by Coronaviridae, more particularly caused by SARS coronavirus, SARS coronavirus-2, human coronavirus NL63 or SARS-CoV-2. Finally, the present invention relates to a method for capturing viral particles, the method comprises the steps of providing immobilized SRFs and contacting a liquid sample or fluid with the SRFs under conditions for allowing the SRFs to bind the viral particles.

59.WO/2023/043986IN OVO VACCINES IN COMBINATION WITH PROBIOTICS
WO - 23.03.2023
Clasificación Internacional A61K 35/66 Nº de solicitud PCT/US2022/043779 Solicitante NUTRITIONAL HEALTH INSTITUTE LABORATORIES, LLC Inventor/a SOTOMAYOR, Konky
This invention is directed to a product for use in avian subjects comprising a combination of in ovo vaccine and probiotic, and related methods.

60.WO/2023/044466HERV-K ANTIBODY, CELL, VACCINE, AND DRUG THERAPEUTICS
WO - 23.03.2023

Clasificación Internacional Nº de solicitud PCT/US2022/076625 Solicitante SUNNYBAY BIOTECH, INC. Inventor/a WANG-JOHANNING, Feng
The invention relates to peptides, proteins, nucleic acids, and cells for use in immunotherapeutic methods. In particular, the invention relates to the immunotherapy of cancer. The invention provides T cell receptors (TCRs), tumor infiltrating lymphocytes (TILs), and vaccines that recognize HERV-K. The invention provides TCR sequences generated from tumor infiltrating lymphocytes that recognize HERV-K antigens as peptides bound to the Major Histocompatibility Complex (MHC), resulting in an interaction between the HLA-peptide complex and the CDS TCR. Peptides bound to molecules of the MHC, or peptides as such, can also be targets of antibodies, soluble TCRs, and other binding molecules.

61.202341011900Edge cloud-based platform with hybridized random forest deep learning classification model for COVID-19 with pneumonia detection
IN - 17.03.2023
Clasificación Internacional G06K / Nº de solicitud 202341011900 Solicitante Dr. Arup Roy, Budge Budge Institute of Technology, Kolkata Inventor/a Dr. Arup Roy, Budge Budge Institute of Technology, Kolkata
At this time, the only known methods of protection against COVID-19 are diagnosis, isolation, and vaccine. COVID-19 is a worldwide pandemic that mostly affects patients' respiratory systems. The current state of COVID-19 prediction testing is inefficient and produces more false positives than it should. Using a remote medical decision support system that uses CT or X-ray images to diagnose sickness with less human interaction and less opportunities for errors is one way to overcome this challenge. State-of-the-art methods typically rely on elaborate deep learning architectures, which are inefficient when applied in low-powered edge devices. To address this issue, this work proposes an optimal hybrid Random Forest Deep learning (HRFDL) classifier using multi-objective Modified Heat Transfer Search (MOMHTS). In the HRFDL architecture, the MOMHTS algorithm primarily optimises the deep learning model by adjusting its hyperparameters to work with the limited hardware at the network's periphery. Extensive experiments are performed on two real-time datasets, the COVID19 lung CT scan dataset and the Chest X-ray pictures (Pneumonia) datasets, to evaluate the efficacy of this method. The suggested technique primarily provides faster communication between IoT devices and COVID-19 detection via the MOMHTS optimised HRFDL classifier is updated to support the resources which can only support limited computation and handle minimum storage. The suggested method achieves 99% accuracy on the COVID19 lung CT scan dataset and the Chest X-ray pictures (Pneumonia) dataset while requiring only a small amount of computing power, money, and space to implement. Based on the results of the simulations, we can say that the proposed methodology is well-suited for edge computing detection of COVID19 and pneumonia.

62.4149485RNA-FORMULIERUNGEN FÜR EINE HOCHVOLUMIGE VERTEILUNG UND VERFAHREN ZUR VERWENDUNG DAVON ZUR BEHANDLUNG VON COVID-19
EP - 22.03.2023
Clasificación Internacional A61K 31/7088 Nº de solicitud 21804980 Solicitante MODERNATX INC Inventor/a WHITE PHILIP
Present application relates to a strategy for compensating for transesterification degradation of lipid-encapsulated SARS-CoV-2 mRNA vaccine, in liquid formulations for high-volume distribution. This involves determining the rate of degradation of the encapsulated RNA and calculating an appropriate overage relative to the intended dose. Alternatively, a higher dose of the RNA may be administered to compensate for loss of effective RNA or the RNA may be formulated in higher purity in anticipation of degradation. The strategy provides a balance between supplying effective and safe products and the need for costly manufacturing processes or transportation hurdles, such as cold-chain supply.

63.202227056739SYSTEMS AND METHODS FOR PRE-FILLED MEDICAL DELIVERY DEVICES
IN - 17.03.2023

Clasificación Internacional A61M 5/28 Nº de solicitud 202227056739 Solicitante KOSKA FAMILY LIMITED Inventor/a WALKER, Jay, S.
A pre-filled medical delivery assembly assembled and configured to allow delivery of a single dose of a therapeutic agent {e.g., vaccine, drug, medicament, etc.) from a Blow-Fill-Seal (BFS) vial to a patient. The delivery assembly generally includes a modular design consisting of separately constructed components cooperatively arranged and coupled to one another.

64.WO/2023/048760RNA VACCINES AGAINST INFECTIOUS DISEASES
WO - 30.03.2023
Clasificación Internacional A61K 9/107 Nº de solicitud PCT/US2022/013516 Solicitante HDT BIO CORP. Inventor/a REED, Steven Gregory
The disclosure provides compositions, methods of treatment, and methods of making and using compositions to deliver a nucleic acid to a subject. Compositions described herein include lipid carriers, optionally including an inorganic particle, capable of admixing with nucleic acids. Methods of using these compositions as a vaccine for treatment of an infectious disease are also provided.

65.WO/2023/045426COXSACKIE VIRUS A16 STRAIN AND IMMUNOGENIC COMPOSITION AND APPLICATION THEREOF
WO - 30.03.2023
Clasificación Internacional C12N 7/00 Nº de solicitud PCT/CN2022/099145 Solicitante BEIJING MINHAI BIOTECHNOLOGY CO., LTD. Inventor/a XIAO, Xia
Provided is a Coxsackie virus A16 strain containing a P1 structural protein and non-structural proteins 2A, 2B, 2C, 3A, 3B, 3C and 3D, the amino acid sequence of the P1 structural protein being as shown in SEQ ID NO. 1, and the amino acid sequences of the non-structural proteins 2A, 2B, 2C, 3A, 3B, 3C and 3D being as shown in SEQ ID NO. 4-10, respectively. The strain can be used for preparing a vaccine for preventing hand-foot-and-mouth disease caused by Coxsackie virus type A16.

66.WO/2023/044542SARS COV-2 VACCINE
WO - 30.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/AU2022/051148 Solicitante THE UNIVERSITY OF ADELAIDE Inventor/a GRUBOR-BAUK, Branka
Single and multivalent vaccines against SARS-CoV-2 comprised out of non-structural protein 3 (NSP3), nucleocapsid (N), SI subunit of the Spike protein, the receptor binding domain (RBD) of the Spike protein, or a combination of two or more of them as fusion DNA constructs. Additionally, the vaccines comprise antigens with an oligomerisation domain which can be an IMX313P or Foldon, or additionally encode perforin.

67.WO/2023/044158MULTIVALENT ANTI-CAMPYLOBACTER ANTIBODIES AND VACCINE
WO - 23.03.2023
Clasificación Internacional A61K 39/40 Nº de solicitud PCT/US2022/044131 Solicitante BIOMEDIT, LLC Inventor/a KUMAR, Arvind
One or more antibodies, particularly nanobodies or VHH single domain antibodies, directed against one or more Campylobacter bacteria targets with roles in Campylobacter colonization, particularly Campylobacter jejuni, in animals, particularly in poultry are provided. The nanobodies are useful in reducing or blocking Campylobacter colonization or infection. The invention provides methods for reducing or blocking Campylobacter colonization or infection, for improving food safety, and for reducing bacertial gastroenteritis in animals, including humans.

68.20230086100NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST EPITHELIAL OVARIAN CANCER AND OTHER CANCERS
US - 23.03.2023

Clasificación Internacional A61K 35/17 Nº de solicitud 18049105 Solicitante Immatics Biotechnologies GmbH Inventor/a Heiko SCHUSTER
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.

69.4149561ZUSAMMENSETZUNG AUS NANOPARTIKELN
EP - 22.03.2023
Clasificación Internacional A61K 47/69 Nº de solicitud 21724703 Solicitante LIFE SCIENCE INKUBATOR BETR GMBH & CO KG Inventor/a KÜBELBECK ARMIN
The disclosure relates to a composition of nanoparticles as carrier for pharmaceutically acceptable compounds, a method for the preparation of the composition and the use of the composition for medical purposes, in particular for immunoprophylaxis or immunotherapy. The invention also relates to a vaccine containing the composition.

70.WO/2023/039108CORONAVIRUS VACCINE
WO - 16.03.2023
Clasificación Internacional A61K 39/09 Nº de solicitud PCT/US2022/042964 Solicitante AFFINIVAX, INC. Inventor/a BESIN, Gilles R.
Compositions and methods for the prevention and/or treatment of SARS-CoV-2 infection and/or COVID-19 are described.

71.WO/2023/038433CIRCULAR RNA AND USE THEREOF
WO - 16.03.2023
Clasificación Internacional C12N 15/63 Nº de solicitud PCT/KR2022/013454 Solicitante GENEONE LIFE SCIENCE, INC. Inventor/a PARK, Young Keun
The present invention relates to a circular RNA and a use thereof, and more specifically to a circular RNA which is more stable in vivo than a linear RNA. The circular RNA, according to the present invention, has been confirmed through experiments to have higher stability than a linear RNA, even when treated with RNase, and to have higher stability than a linear RNA, even when stored for a long time. This means that the circular RNA of the present invention has high in vitro or in vivo stability and thus enables the in vitro or in vivo expression of a target protein to be sustained for a long time. Thus, the circular RNA of the present invention may be used in various ways as a platform for the prevention or treatment of a target disease, or as a vaccine platform for the prevention of infection of a target disease.

72.WO/2023/044494ORAL VACCINE VIA DENTAL BACTERIA AND EMITTED PEPTIDES TO PREVENT COVID-19 INFECTION
WO - 23.03.2023
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/US2022/076681 Solicitante KOTLYAR, David Inventor/a KOTLYAR, David
Disclosed is a pharmaceutical composition to prevent transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the pharmaceutical composition comprising: genetically modified bacteria; sequences of small peptides; and pharmaceutical excipients, wherein the genetically modified oral bacteria are modified to translate, produce, and emit the sequences of small peptides which neutralize SARS-CoV-2 against COVID-19, wherein transgenic technology is used to modify the genetically modified oral bacteria to add genes in genetically modified oral bacteria that are transcribed to produce small

peptides from the sequences of small peptides so added, wherein the sequences of small peptides show extreme binding and neutralization to SARS-CoV-2 but not to host proteins or processes, and wherein the pharmaceutical excipients aid the oral and/or nasal administration of the pharmaceutical composition.

73.WO/2023/049636CANCER THERAPY COMPOSITIONS AND USES THEREOF
WO - 30.03.2023
Clasificación Internacional C12N 15/85 Nº de solicitud PCT/US2022/076304 Solicitante HDT BIO CORP. Inventor/a REED, Steven, Gregory
The disclosure provides compositions, methods of treatment, and methods of making and using compositions to deliver a nucleic acid to a subject. Compositions described herein include lipid carriers, optionally including an inorganic particle, capable of admixing with nucleic acids. Nucleic acids provided herein include those encoding for cancer antigens (full length proteins or fragments) as well as antibodies. Methods of using the compositions as a therapeutic vaccine for the treatment of a cancer are also provided.

74.2610806Bovine ephemeral disease and lumpy skin disease antigenic constructs
GB - 22.03.2023
Clasificación Internacional A61K 39/205 Nº de solicitud 202112611 Solicitante UNIV CAPE TOWN Inventor/a ANNA-LISE WILLIAMSON
A combination of proteins comprising a recombinant Bovine ephemeral fever virus (BEFV) glycoprotein (Gb protein) and a BEFV matrix protein (M protein). Another aspect of the invention is a composition comprising a nucleic acid encoding a recombinant BEFV glycoprotein and a nucleic acid encoding a BEFV matrix protein. The glycoprotein can have a sequence identity 90% to that of SEQ ID NO 1. The matrix protein can have a sequence identity 90% to that of SEQ ID NO 3. The nucleic acids can be operably linked to regulatory sequences. The nucleic acids can be contained in a recombinant lumpy skin disease virus (LSDV) expression vector comprising a stabilised SOD-homolog (SODis) gene. A further aspect of the invention is a vaccine comprising the combination of proteins or composition. An immunologically effective response against bovine leukaemia virus can also be induced in a subject. The subject can be a mammal (e.g. cattle or buffalo).

75.20230081039PHARMACEUTICAL COMPOSITION COMPRISING POLYNUCLEOTIDES AND USE THEREOF FOR PREVENTION OR TREATMENT OF COVID-19
US - 16.03.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17768441 Solicitante BEIJING YISHENG BIOTECHNOLOGY CO., LTD. Inventor/a Yi ZHANG
The present application relates to a pharmaceutical composition comprising polynucleotides and use thereof for prevention or treatment of COVID-19. More specifically, disclosed in the present application is a composition used for prevention or treatment of COVID-19, comprising a polyriboinosinic-polyribocytidylic acid, an antibiotic or polyamino compound, a positive ion, and an optional antigen derived from novel coronavirus SARS-CoV-2. Also provided is use of the composition in preparation of a drug or vaccine for prevention or treatment of novel coronavirus SARS-CoV-2.

76.202321013176A MODIFIED NANOPARTICULATE CARRIER FOR THE DELIVERY OF TUBERCULAR ANTIGEN
IN - 17.03.2023
Clasificación Internacional A61P / Nº de solicitud 202321013176 Solicitante Dr. Brajesh Kumar Tiwari Inventor/a Dr. Brajesh Kumar Tiwari
A MODIFIED NANOPARTICULATE CARRIER FOR THE DELIVERY OF TUBERCULAR ANTIGENThe present invention relates to a vaccine delivery system in a suitable formulation and which is easy to use and available at a cost which can be afforded by general public. The principle embodiment of the present

invention provides a modified nanoparticulate carrier for the delivery of tubercular antigen comprising , tubercular antigen Ag85 and a polymeric nanoparticle entrapping the tubercular antigen Ag85; wherein polymeric nanoparticle may or may not be mannose conjugated. Another important embodiment of present invention discloses a modified nanoparticulate carrier for the delivery of tubercular antigen wherein polymer used for making nanoparticle is gelatin and/or PLGA.A further embodiment of present invention discloses a process for preparing modified nanoparticulate carrier for the delivery of tubercular antigen.

77.20230081577Medical Injectors and Systems and Methods for an Injection Management Platform
US - 16.03.2023
Clasificación Internacional H04L 9/00 Nº de solicitud 18051187 Solicitante Koska Family Limited Inventor/a Jay S. Walker
Systems, methods and articles of manufacture provide for an injection management platform that allows the verification and management of injection event transactions involving injectors equipped with NFC or RFID chips utilizing a distributed and secure technology such as blockchain. An injection event transaction ledger allows for digital receipts of injection event transactions to be securely verified and updated. In accordance with some embodiments, injectors may comprise blow-fill-seal (BFS) injectors that are pre-filled with a single dose of a fluid agent comprising a vaccine or medicament, allowing for tracking of individual doses of the fluid agent via the injection event transaction ledger.

78.20230088845NOVEL PEPTIDES AND COMBINATION OF PEPTIDES AND SCAFFOLDS THEREOF FOR USE IN IMMUNOTHERAPY AGAINST COLORECTAL CARCINOMA (CRC) AND OTHER CANCERS
US - 23.03.2023
Clasificación Internacional C07K 14/47 Nº de solicitud 18056858 Solicitante Immatics Biotechnologies GmbH Inventor/a Oliver SCHOOR
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.

79.20230090437LIPIDATED IMMUNE RESPONSE MODIFIER COMPOUND COMPOSITIONS, FORMULATIONS, AND METHODS
US - 23.03.2023
Clasificación Internacional A61K 39/39 Nº de solicitud 18059726 Solicitante 3M INNOVATIVE PROPERTIES COMPANY Inventor/a Paul D. Wightman
The compound N-(4-{[4-amino-2-butyl-1H-imidazo[4,5-c]quinolin-1-yl]oxy}butyl)octadecanamide is a useful drug compound for enhancing immune response and can be used, for example, as a retrovirus vaccine adjuvant.

80.20230086855NOVEL PEPTIDES AND COMBINATION OF PEPTIDES AND SCAFFOLDS THEREOF FOR USE IN IMMUNOTHERAPY AGAINST COLORECTAL CARCINOMA (CRC) AND OTHER CANCERS
US - 23.03.2023
Clasificación Internacional C07K 14/47 Nº de solicitud 18056887 Solicitante Immatics Biotechnologies GmbH Inventor/a Oliver SCHOOR

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.

81.20230082935IN OVO VACCINES IN COMBINATION WITH PROBIOTICS
US - 16.03.2023
Clasificación Internacional A61K 39/112 Nº de solicitud 17946445 Solicitante Nutritional Health Institute Laboratories, LLC Inventor/a Konky Sotomayor
This invention is directed to a product for use in avian subjects comprising a combination of in ovo vaccine and probiotic, and related methods.

82.WO/2023/039126BLOW-FILL-SEAL (BFS) VIALS WITH MODIFIED FLUID SEALS, AND SYSTEMS AND METHODS FOR FABRICATION THEREOF
WO - 16.03.2023
Clasificación Internacional A61J 1/06 Nº de solicitud PCT/US2022/042994 Solicitante KOSKA FAMILY LIMITED Inventor/a PRICE, Jeff
A blow-fill-seal (BFS) vial, such as a pre-filled container containing a vaccine or other medicament, includes a modified fluid seal along a parting line of the vial. For example, the modified fluid seal can be an end portion of the BFS vial that has been thickened or otherwise strengthened during the BFS molding process. Molding systems and methods for thickening and/or strengthening the fluid seal along the parting line of the vial are also provided.

83.WO/2023/045523APPLICATION OF CRYOPROTECTANT IN ALUMINUM ADJUVANT
WO - 30.03.2023
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/CN2022/107313 Solicitante DALIAN UNIVERSITY OF TECHNOLOGY Inventor/a SUN, Bingbing
An application of a cryoprotectant in an aluminum adjuvant, for use in protecting an aluminum adjuvant suspension from being frozen during freezing. The provided freezing protection method avoids the massive aggregation of an aluminum-containing adjuvant used in a vaccine during freezing, and reduces the damage of freezing to the structure of the aluminum-containing adjuvant. The stability of the aluminum adjuvant during freezing can be improved, the possibility of an adjuvant effect loss caused by an accidental freezing event during cold chain transportation is greatly reduced, and unnecessary loss and serious consequences can be avoided.

84.WO/2023/049213PRE-FILLED BLOW-FILL-SEAL INTRADERMAL INJECTION SYSTEM
WO - 30.03.2023
Clasificación Internacional A61M 5/28 Nº de solicitud PCT/US2022/044291 Solicitante KOSKA FAMILY LIMITED Inventor/a PRICE, Jeff
A pre-filled blow-fill-seal (BFS) IntraDermal (ID) medical agent injection system (600) assembled and configured to allow delivery of a single dose of a therapeutic agent (e.g., vaccine, drug, medicament, etc.) from a BFS vial (610) to a patient in an auto-disable fashion.

85.20230084215Stable, Spray Dried, Immunogenic, Viral Compositions
US - 16.03.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17887545 Solicitante International AIDS Vaccine Initiative, Inc. Inventor/a Tom Jin

Viruses, and particularly genetically engineered, replication deficient viruses such as adenoviruses, poxviruses, MVA viruses, and baculoviruses which encode one or more antigens of interest, such as TB, malarial, and HIV antigens, are spray dried with a mannitol-cyclodextrin-trehalose-dextran (MCTD) to form a powder where the viability of the viruses are maintained at a suitable level for mass vaccinations after spray drying, and where the viability of the viruses are maintained at suitable level over a period of storage time, even in the presence of humidity.

86.4149560ZUSAMMENSETZUNG VON NANOPARTIKELN ALS TRÄGER FÜR HPV-ABGELEITETE IMMUNOGENE FRAGMENTE
EP - 22.03.2023
Clasificación Internacional A61K 47/69 Nº de solicitud 21724702 Solicitante LIFE SCIENCE INKUBATOR BETR GMBH & CO KG Inventor/a RIEMER ANGELIKA
The disclosure relates to a composition of nanoparticles as carrier for HPV-derived immunogenic fragments and the use of the composition for medical purposes, in particular for immunoprophylaxis or immunotherapy. The invention also relates to a vaccine containing the composition and/or nanoparticles.

87.4149952NEOANTIGENE EPITOPE IN ZUSAMMENHANG MIT SF3B1-MUTATIONEN
EP - 22.03.2023
Clasificación Internacional C07K 7/06 Nº de solicitud 21724332 Solicitante INST CURIE Inventor/a LANTZ OLIVIER
The present application relates to a tumor specific neoantigenic peptide, wherein said peptide is encoded by a part of an ORF sequence from a transcript associated with a SF3B1 or a SF3B1- like mutation, comprises at least 8 amino acids and binds at least one MHC molecule with an affinity of less than 500 nM; and is not expressed in normal healthy cells. The present application further relates to vaccine or immunogenic composition, antibodies, T cell receptors, polynucleotides, vectors and immune cells derived thereof as well as their use in therapy of cancer.

88.3154812THE USE OF UNRIPENED GREEN MANGIFERA INDICA AS A NATURAL PREPARATION TO TREAT SARS-COV-2
CA - 24.03.2023
Clasificación Internacional A61K 36/22 Nº de solicitud 3154812 Solicitante APPLIED BIO RESEARCH INC. Inventor/a JASSIM, SABAH A A
The present disclosure provides a method for an effective decoction preparation of unripe green Mangifera indica to treat and prevent anti-SARS-CoV-2. The disclosure extends to uses of such preparation as medicaments and to methods of treating anti-SARS-CoV-2 infections, and tolerating the vaccine side-effects. The disclosure further extends to methods for preventing anti-SARS-CoV-2 infections by coating objects and surfaces with the compositions.

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