VacCiencia

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EN ESTE NÚMERO

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

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

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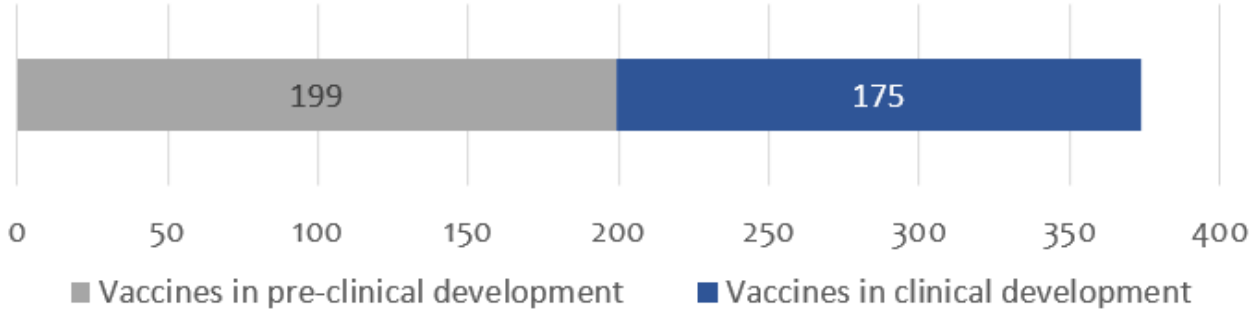
Resumen de la información publicada por la OMS sobre los candidatos vacunales contra la COVID-19 en desarrollo a nivel mundial

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

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

175 Vacunas en evaluación clínica y 199 en evaluación preclínica



Candidatos vacunales en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	56	32%
VVnr	Viral Vector (non-replicating)	23	13%
DNA	DNA	16	9%
IV	Inactivated Virus	22	13%
RNA	RNA	41	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	7	4%
VVr + APC	VVr + Antigen Presenting Cell	2	1%
LAV	Live Attenuated Virus	2	1%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
BacAg-SpV	Bacterial antigen-spore expression vector	1	1%
		175	

Candidatos vacunales por vía de administración

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

Número de dosis de los candidatos vacunales en evaluación clínica

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

Candidatos vacunales mucosales en evaluación clínica

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

Candidatos vacunales en fase 4 de evaluación clínica

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

Candidatos vacunales mucosales en evaluación clínica fase 3

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

Noticias en la Web

More adverse reactions following bivalent COVID-19 mRNA booster vaccine

Nov 13. A recent study posted to the medRxiv* preprint server examined adverse reactions after administration of a bivalent BNT162b2 coronavirus disease 2019 (COVID-19) vaccine booster.

Vaccination is critical against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), but emerging mutant variants of the virus impair the effectiveness of vaccines based on the original/wildtype SARS-CoV-2. Consequently, bivalent vaccines with spike messenger ribonucleic acid (mRNA) of wildtype and Omicron BA.1 or BA.4/5 variant have been developed.

Reports suggest that the bivalent mRNA-1273.214 vaccine based on the Wuhan-Hu-1 and Omicron BA.1 spike mRNA has a slightly higher rate of adverse reactions. Moreover, no evidence of adverse reactions after bivalent COVID-19 vaccination is available due to approval without additional clinical studies.

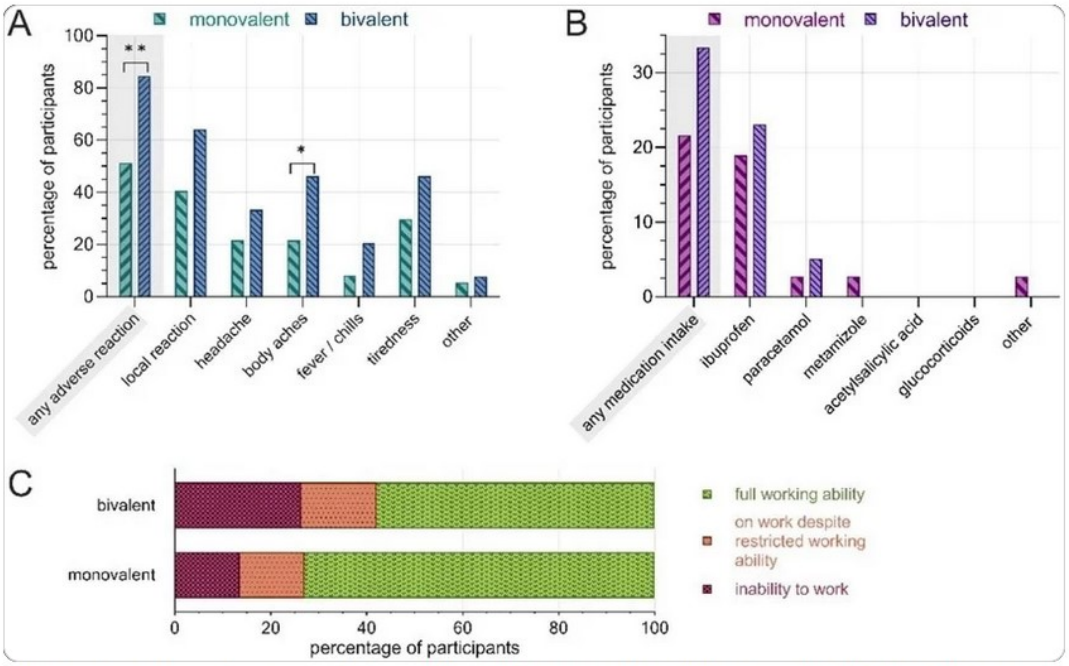
The study and findings

In the present study, researchers in Germany and the United Kingdom evaluated adverse reactions, pro re nata (PRN) medication intake, and the ability to work after the second booster vaccination (fourth dose) among healthcare workers (HCWs). All participants had been previously administered European Medicines Agency (EMA)-approved primary COVID-19 immunization, followed by subsequent mRNA vaccine-based booster dose.

The second booster vaccine was either the monovalent BNT162b2 vaccine or the bivalent BNT162b2 vaccine with spike mRNA of wildtype and Omicron BA.4/5 variant. Participants who received a different vaccine as the second booster dose and those who received a concurrent influenza vaccination were excluded from the study.

Data on adverse reactions, sociodemographic factors, PRN medication, and the ability to work were obtained by a questionary using Research Electronic Data Capture (REDCap) tool. In addition, the null hypothesis was tested using the Mann-Whitney U and Fisher's exact tests. Seventy-six HCWs received the second COVID-19 booster from August 13, 2021, to October 14, 2022.

Thirty-seven HCWs received the monovalent BNT162b2



*Post-vaccination adverse reactions, PRN medication and inability to work following the second COVID-19 booster administration, separated by vaccine. **A)** rate of adverse reactions by subcategory, **B)** rate of PRN medication, **C)** work ability restrictions. Monovalent: BNT162b2mRNA (n=37), bivalent: BNT162b2mRNA original/Omicron BA.4-5 (n=39). **: p<0.01, *: p<0.05.*

vaccine, and 39 received the bivalent vaccine (wildtype/Omicron BA.4/5). Most HCWs (80%) were female; the median age of female and male HCWs was 47 and 51, respectively. The rate of adverse reactions following the second booster administration was significantly higher among HCWs immunized with the bivalent vaccine (84%) than those receiving the monovalent vaccine (51%).

Specifically, the rates of headache, body aches, tiredness, fever, chills, and local reactions were significantly higher in HCWs receiving the bivalent vaccine. Bivalent vaccine-administered HCWs reported a more frequent PRN medication use and had elevated rates of workability restrictions than monovalent vaccine-administered restrictions.

Conclusions

The researchers observed that HCWs receiving the bivalent BNT162b2 wildtype/Omicron BA.4/5 vaccine as the second booster shot showed a higher prevalence of adverse reactions than monovalent vaccine-boosted HCWs. Notably, the interval between the first and second booster administration was 193 days for monovalent vaccine recipients and 322 days for bivalent vaccine recipients.

Furthermore, HCWs reported increased PRN medication intake and inability to work following bivalent booster dose administration. The study's limitations include its retrospective questionnaire-based design and the lack of blinding and randomization. Overall, these findings may help inform clinical decisions regarding monovalent and bivalent vaccination.

Fuente: News Medical Life Sciences. Disponible en https://bit.ly/3i3p22Z

Traditional vaccines like Sinovac may prevent severe disease in Covid-19 patients: Study

Nov 14. Though often considered inferior due to their induction of a lower antibody response compared with their mRNA counterparts, inactivated virus vaccines can play a role in preventing the development of severe Covid-19, a recent study has found.

This could mean that a combination of the two vaccine types may offer better protection against the coronavirus, researchers said, noting each had its own advantages.

The study by the Duke-NUS Medical School found that inactivated virus vaccines such as Sinopharm and Sinovac, which were used extensively in Asia, and mRNA vaccines – which include Pfizer-BioNTech's Comirnaty and Moderna's Spikevax – trigger different T-cell responses in fighting the coronavirus.

Inactivated vaccines - an older technology used in the polio and influenza vaccines, among others - are made up of dead viruses, unlike mRNA vaccines, which use just parts of the virus' genetic material to stimulate an immune response.

While mRNA vaccines induce T-cells – a type of white blood cell – targeting the spike protein of the coronavirus, inactivated vaccines elicit a broader immune response against different proteins on the virus.

This means that while inactivated vaccines might not be as good at preventing Covid-19 infection, they can play a role in preventing the development of severe disease, said the study's senior co-author Anthony Tanoto Tan, a senior research fellow with the Duke-NUS' Emerging Infectious Diseases programme.

Earlier studies had shown that mRNA vaccines help patients produce a far greater number of antibodies,

compared with their inactivated virus counterparts. However, newer variants have proved to be more adept at evading the antibody response, Dr Tan said.

“This means that maybe we should stop thinking about preventing infection, and we should start thinking about (how) vaccines (can prevent) severe disease,” he said.

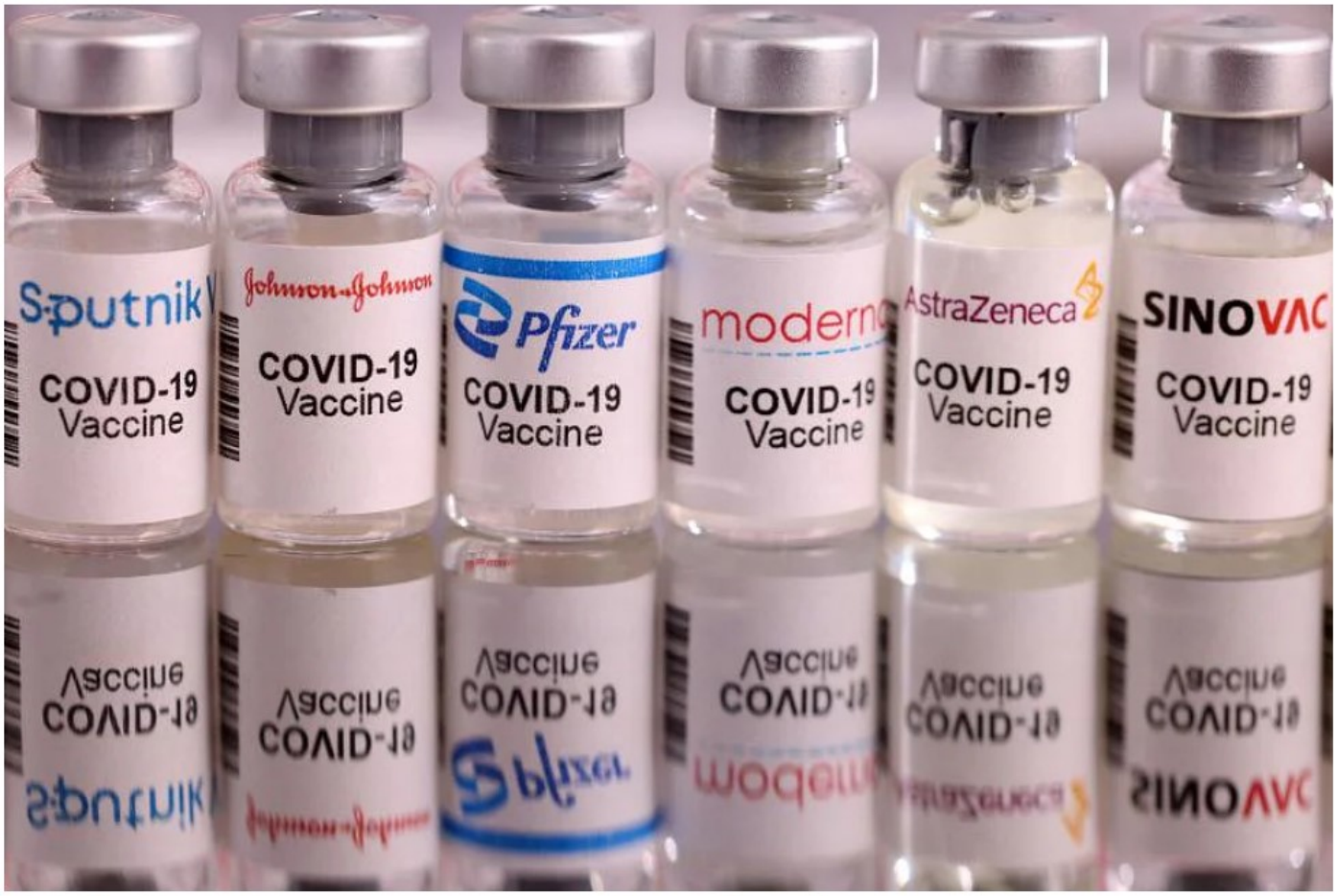
The research team compared the T-cell immune response in about 500 blood samples from more than 130 people who received inactivated Sars-CoV-2 and spike mRNA vaccines.

The study, which was published in medical journal Cell Reports Medicine in October, found that mRNA vaccines can induce T-cells targeting SARS-CoV-2’s spike protein, which contains numerous mutations in the Omicron variant.

However, inactivated vaccines stimulated a broad T-cell response not only against the virus’ spike protein but also the membrane and nucleoprotein, which have much fewer mutations in the Omicron variant.

Unlike the mRNA vaccines, the inactivated vaccines did not seem to generate cytotoxic CD8 cells – T-cells known for their ability to kill virus-infected cells. Instead, they mainly stimulated a type of T-cell called CD4, or “helper” T-cells. When these helper cells recognise a viral antigen, they release cytokines – chemicals that help activate other types of immune cells.

The broader response provided by inactivated vaccines, in generating T-cell responses towards other viral proteins, could be beneficial, said the study’s senior author, Professor Antonio Bertoletti, from Duke-NUS’ Emerging Infectious Diseases programme.



Inactivated vaccines elicit a broader immune response against different proteins on the virus. PHOTO: REUTERS

Larger studies are needed to clarify the impact of these T-cells' responses to better design vaccines for controlling severe Covid-19, he said.

This does not mean that inactivated vaccines are superior to mRNA or other vaccine technologies, Dr Tan told The Straits Times.

The question of which of the different vaccines – all of which were developed after a significant amount of research – is "better" is not straightforward, he said. "They all have their advantages."

However, a different vaccination strategy may be required, Dr Tan said, suggesting that one possible approach could be that a person gets the primary series of vaccination with an mRNA vaccine and subsequently get a booster using an inactivated virus alternative to get the best of both worlds.

ST reported in October 2021 that private clinics here were seeing significant demand for Sinopharm and Sinovac boosters among patients who had previously taken mRNA jabs, which was attributed to a fear of side effects.

Experts, however, noted at the time that inactivated vaccines had not yet been proven to have a better response as boosters, compared with other vaccines.

The study adds important insight to our understanding of immunity against the coronavirus, said Dr Leong Hoe Nam, an infectious diseases expert at Mount Elizabeth Novena Specialist Centre.

However, it may not be beneficial for patients to take an inactivated vaccine as a booster, after taking an mRNA vaccine during their primary series, he said.

This is because the strong immune response conferred by an mRNA vaccine may negate any advantages from the inactivated vaccine, said Dr Leong, adding that there are no studies regarding the benefits of taking the vaccines in such an order.

The Duke-NUS research team called for further research with more participants, to better compare the ability of the cell response induced by inactivated virus vaccines with that of the mRNA vaccines in reducing the severity of Covid-19 infection.

Fuente: The Straits Times. Disponible en https://bit.ly/3Xqsy7M

25-Valent Pneumococcal Conjugate Vaccine Candidate Launches Early Stage Study

Nov 15. Inventprise recently announced that a first-in-human Phase 1/2 clinical study of its 25-valent pneumococcal conjugate vaccine (IVT PCV-25) has begun in Halifax, Canada.

This vaccine candidate is designed to prevent pneumococcal disease caused by serotypes not covered in the current vaccines.

The Phase 1 portion of the study now underway will enroll healthy adult volunteers and use an authorized adult 20-valent PCV as the comparator.

Satisfactory Phase 1 results will trigger Phase 2, which will evaluate the IVT PCV-25, first in young children and then, pending satisfactory data, in infants.

Phase 2 will use an authorized infant 13-valent PCV as the comparator.

"This Phase 1/2 study is important to determine how IVT PCV-25 performs in people and will inform decisions around the vaccine's progression into later-stage clinical development," says Dr. Joanne Langley, the study's principal investigator, in a press release on November 10, 2022.

"If studies show that the vaccine can safely protect against more types of pneumococcal disease, it could be a meaningful tool in the fight against pneumonia—the long-reigning leading cause of child death due to infectious disease in the world."

Sponsored by Inventprise and conducted in collaboration with the international nonprofit organization PATH and the Canadian Immunization Research Network.

Fuente: Precision Vaccinations. Disponible en https://bit.ly/3OBn4mz

New Variants Drive Up COVID-19 Infections in the United States

Nov 16. The two variants are descendants of Omicron's BA.5 subvariant and have been spreading rapidly in Europe.

The Centers for Disease Control and Prevention (CDC) informed that Omicron subvariants BQ.1 and BQ.1.1 accounted for nearly half of new COVID-19 cases in the U.S. in the past week.

The two new variants have been growing especially fast since October. At the beginning of October, each one accounted for about 1 percent of new infections in the United States, but they have been roughly doubling in prevalence each week.

The two variants are descendants of Omicron's BA.5 subvariant and have been spreading rapidly in Europe. The predominant Omicron lineage in the United States remains BA.5, which accounted for 29.7 percent of new infections in the latest week, CDC data showed.

The CDC is also tracking the rise of another COVID-19 variant known as BN.1, the latest new Omicron descendant now spreading around the country. Some 4.3 percent of new COVID-19 cases nationwide are now linked to the BN.1 variant. Prevalence of the new strain is largest in Arizona, California, Hawaii, and Nevada.

A CDC official said Saturday at a webinar hosted by the Infectious Disease Society of America that BN.1 is estimated to be doubling in proportion roughly every two weeks across the country, though they cautioned that early estimates remain muddy.

Another new variant XBB had been watched closely abroad. It has yet to reach large enough levels in the United States to be listed as a standalone strain. The rising trend of new variants has led regulators and vaccine manufacturers to monitor more closely in case they start to evade protection offered by current vaccines.

In fall 2022, the CDC recommended a bivalent mRNA COVID-19 vaccine booster dose for people aged 5 years and above. The updated booster dose is administered at least 2 months after completing the primary series or after receipt of a monovalent booster dose.

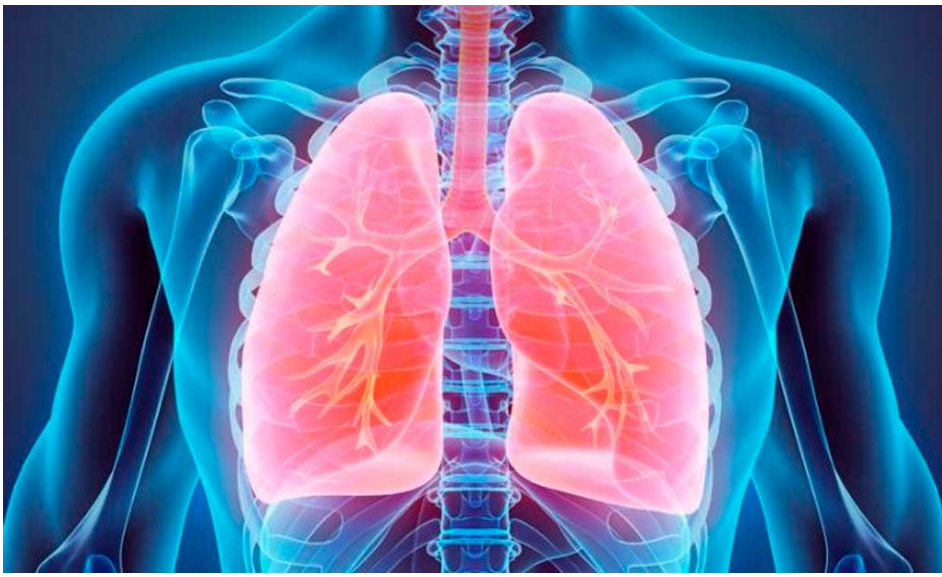
"Bivalent COVID-19 vaccine booster doses might improve protection against SARS-CoV-2 Omicron sublineages and, along with completion of a primary series in persons who remain unvaccinated, are important to protect against COVID-19, particularly among those people who are at increased risk for severe illness and death," said the CDC.

The COVID-19 vaccination rate in the U.S. lags that of many other high-income countries. As of Nov. 9, about 31.4 million people in the United States, or 10.1 percent of the U.S. population, have received the updated booster dose.

Fuente: teleSUR. Disponible en https://bit.ly/3AGdxF2

PAHO calls for redoubling measures ahead of rising RSV infections

Nov 17. With an increase in COVID-19 infections in the region, seasonal influenza on the rise, and a spike in cases of Respiratory Syncytial Virus (RSV), the Pan American Health Organization (PAHO) Director, Carissa F. Etienne, called on countries to implement the tools proven to keep communities safe, including vaccines, surveillance, mask-wearing and social distancing, particularly in the run-up to the festive period.



"The rise of a single respiratory infection is a cause for concern. When two or three start impacting a population concurrently, this should put us all on alert," she said during a media briefing today.

Covid-19 cases have increased by 17% in the region over the past week, and deaths increased in South America and Central America. A reduction in testing may be hiding the true number of infections.

Meanwhile, influenza cases in North America are rising and an out-of-season increase in cases in the Southern Cone is also being seen, particularly in Argentina and Uruguay, which is putting unexpected stress on health systems.

RSV infections have also ramped up significantly, burdening health systems in Canada, Mexico, Brazil, Uruguay and the United States, and having a particular impact on children and infants under the age of one.

Dr. Etienne highlighted that the strategies used to limit the spread of Covid-19, including mask-wearing and social distancing, also apply to other respiratory diseases, including RSV, for which there is currently no vaccine.

This year, the PAHO Revolving Fund has procured 39.5 million vaccine doses against Covid-19, and 31 million influenza vaccines to Member States.

Turning to the additional outbreaks in the Americas, Dr. Etienne reported that the cholera situation in Haiti continues to worsen, with over 700 confirmed cases since early October, 7,000 suspected cases, and 144 deaths.

Monkeypox infections have fallen in most of the severely affected countries, and Dr. Etienne called on countries to continue to engage with those who are most at risk, "to drive cases to zero as quickly as possible."

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

¿Qué es la linfadenopatía, efecto secundario provocado por la vacuna contra la COVID-19?

19 nov. Uno de los efectos secundarios encontrados en pacientes con antecedente de vacunación por COVID-19, especialmente con las vacunas Pfizer o Moderna, es el desarrollo de una enfermedad en los ganglios linfáticos axilares, es decir, una linfadenopatía.

Este padecimiento se ha identificado en personas que recibieron una tercera dosis con dichas vacunas. Aun teniendo en cuenta que estos fármacos pueden generar más de un efecto adverso por persona, y que habitualmente se trata de problemas transitorios de escasa y corta incidencia, llama la atención el aumento de las linfadenopatías con respecto a las segundas dosis.

¿Qué es la linfadenopatía?

De acuerdo con Redacción Médica, sitio especializado en salud, una adenopatía es una enfermedad en los ganglios linfáticos. También se identifica con una inflamación o un aumento del tamaño de esos ganglios.

Los ganglios son unas zonas de nuestro cuerpo en las que se almacena un tipo de glóbulo blanco denominado linfocito, encargado de defendernos frente a diversas enfermedades, fundamentalmente infecciosas y tumorales.

Además, suelen localizarse en grupos, siendo las regiones más habituales las ingles, las axilas, el cuello y la región submandibular (debajo de la mandíbula). También existen regiones de ganglios que están más profundas, como el mediastino (la zona situada entre ambos pulmones), los hilios pulmonares, el abdomen, etc.

Habitualmente, y debido a su pequeño tamaño, los ganglios no se suelen notar ni se pueden ver en radiografías. Sin embargo, cuando existe una inflamación de los ganglios por cualquier causa, éstos crecen y pueden tocarse debajo de la piel.

Las adenopatías pueden estar localizadas en una única región o estar generalizadas por todo el cuerpo, ser o no ser dolorosas, tener un tamaño variable (desde el tamaño de una lenteja al de una pelota de golf o incluso mayores en situaciones excepcionales) y pueden tener una consistencia blanda, dura (en algunos cánceres) o fluctuante (típico de infecciones abscesificadas); en algunas ocasiones pueden supurar (expulsar pus).

¿Cuáles son las causas de las linfoadenopatías?

Las adenopatías pueden deberse a:

⇒ Las adenopatías localizadas en las ingles o en la zona de detrás de la rodilla (hueco poplíteo) suelen ser consecuencia de heridas en las piernas. Las adenopatías en la ingle pueden ser también debidas a infecciones de transmisión sexual.

⇒ Las localizadas en las axilas suelen ser consecuencia de infecciones en los brazos o en el interior del tórax. También pueden ser consecuencia de un cáncer de mama.

⇒ Las localizadas debajo de la garganta o en el cuello suelen ser consecuencia de infecciones en la boca, en la garganta o en los dientes (flemones). Sin embargo también pueden ser consecuencia de un cáncer en esas mismas localizaciones (cánceres de boca, garganta, tiroides, lengua, etc.) o de otras enfermedades menos frecuentes.

⇒ Las adenopatías en la nuca suelen deberse a heridas en el cuero cabelludo.

⇒ Las adenopatías que se localizan delante de la oreja suelen deberse a infecciones de los ojos.

⇒ Las adenopatías en el mediastino (la zona situada entre ambos pulmones) o en los hilios pulmonares pueden ser consecuencia de cánceres del pulmón, de linfomas, de infecciones pulmonares crónicas (como la tuberculosis) o de otras enfermedades como la sarcoidosis.

⇒ Adenopatías generalizadas son consecuencia de enfermedades que afectan de forma generalizada a todo el organismo. Pueden ser:

⇒ Infecciones: Por virus, como en los síndromes mononucleósicos (mononucleosis infecciosa, infección aguda por citomegalovirus, etc.), en el SIDA, en las hepatitis, rubéola, sarampión, herpes, etc.

Fuente: EL FINANCIERO. Disponible en https://bit.ly/3OwBpkm

Italian minister reaffirms significance of COVID-19 vaccination

Nov 19. Italy's Health Minister Orazio Schillaci on Saturday denied information about alleged dismissal of COVID-19 vaccines, according to media reports.

In statements published on Saturday on La Voce di Mantova newspaper´s website and other local publications, Schillaci stated that “the information confirm the significance of Covid-19 vaccination to fight off fresh infections, and to prevent ICU admissions and deaths”.

Schillaci described as “malicious interpretation” the reference in various Italian media outlets to the questioning of the effects of immunization by the Undersecretary of the health ministry Marcello Gemmato.

In a recent interview, when asked about the possibility that without a mass vaccination Italy´s Covid-19 mortality rating would have been even higher, Gemmato replied, “Without vaccines it would have been worse? There is no evidence.”

Instead, Schillaci acknowledged that “the most recent analyses done by the Higher Institute of Health allow us to estimate that the Covid-19 vaccination campaign in Italy has made it possible to prevent over 500,000 hospitalizations.”

Mass immunization also made it possible to reduce ICU admissions by more than 55,000 and about 150,000 deaths.

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

México aprueba uso de la vacuna cubana Soberana contra la COVID-19

20 nov. La vacuna cubana contra la COVID-19, Soberana, fue autorizada por la autoridad regulatoria mexicana para su uso de emergencia en México, informó este sábado la Comisión Federal para la Protección contra Riesgos Sanitarios (Cofepris).

De acuerdo con el regulador sanitario mexicano se permitirá el uso de esta vacuna en sus dos variantes: Soberana y Soberana PL.

La Cofepris señaló que otros países son susceptibles de ser utilizadas en otras naciones, ya que este órgano dependiente de la Secretaría de Salud de México es reconocida como Autoridad Reguladora Nacional de referencia (ARNr) por la Organización Panamericana de la Salud (OPS).

"Las autorizaciones que emite esta comisión forman parte de la Estrategia Nacional de Regulación Sanitaria, que permite revisar y dar acceso al mayor número de insumos para la salud, siempre y cuando se compruebe la calidad, seguridad y eficacia del producto", detalló la Cofepris en un comunicado.

Además, recordó que, todas las decisiones de esta autoridad son tomadas con base en la evidencia técnico –científica, al ser integrante de la Conferencia Internacional sobre Armonización de Requisitos Técnicos para el Registro de Productos Farmacéuticos para Uso Humano (ICH, por sus siglas en inglés).

Desde el 26 de noviembre pasado el biológico recibió opinión favorable del Comité Nacional de Ciencia y Tecnología e Innovación en Salud del Consejo Nacional de Ciencia y Tecnología (Conacyt).

Asimismo, le fue otorgada una opinión favorable del Comité de Moléculas Nuevas (CMN), que sesionó el pasado 9 de septiembre.

Con estas bases, se inscribió la solicitud de autorización para su uso de emergencia ante la Cofepris, detalló este organismo.

"Personal especializado en vacunas analizó los expedientes, certificando que el biológico cumple los requisitos de calidad, seguridad y eficacia necesarios para ser aplicado", explicó la Cofepris.

Por su parte, la Cofepris recordó que el suministro de las vacunas para prevenir la pandemia es universal y gratuita, y que en el país su aplicación se encuentra establecida en la "Política Nacional de Vacunación contra el virus SARS-CoV-2 para la Prevención de COVID-19 en México".

Fuente: SWI swissinfo. Disponible en https://bit.ly/3U3Ex8k

Son cubanas tres de las 12 vacunas anticovid avaladas por Cofepris

21 nov. De las 12 vacunas contra el virus SARS-CoV-2 que han sido autorizadas para su uso de emergencia por la Comisión Federal para la Protección contra Riesgos Sanitarios (Cofepris), tres han sido desarrolladas en Cuba. Primero fue Abdala en diciembre de 2021 y el pasado sábado se anunció la aprobación de Soberana 02 y Soberana Plus.

Estas últimas demostraron una eficacia superior a 90 por ciento para prevenir la COVID-19 y, en particular, Soberana Plus se recomienda su uso como refuerzo (una dosis) en personas que hayan tenido la infección y/o hayan recibido algún otro biológico previamente.

Tiene la capacidad para estimular el sistema de defensas del organismo para combatir el coronavirus.

Los resultados del ensayo clínico fase 2a-2b sobre esta vacuna se publicaron en junio pasado en la revista científica The Lancet. En dicho estudio se contó la participación de 450 personas que habían tenido COVID-19 asintomático, leve o moderado.

Información de la Organización Panamericana de la Salud (OPS) resalta que la eficacia demostrada por las vacunas cubanas supera el requisito de la Organización Mundial de la Salud (OMS) para este tipo de productos, que es de 50 por ciento.

Aunque sigue pendiente el análisis sobre las vacunas desarrolladas por el Instituto Finlay de Vacunas de la isla, para incluirlas en la lista de emergencia del organismo internacional, existen acuerdos para que se fabriquen en Italia. Cuba ha firmado acuerdos para su utilización en naciones como Venezuela y Bielorrusia.

De las vacunas cubanas también destaca que se elaboraron con ingeniería genética. Así, los científicos obtuvieron para Soberana 02, la proteína usada como recombinante del dominio de unión al receptor del virus SARS-CoV-2 conjugado a toxoide tetánico. Para el desarrollo de Soberana Plus se obtuvo la proteína recombinante del dominio de unión al receptor del virus SARS-CoV-2.

Otras vacunas han utilizado plataformas de vectores virales, el ARN mensajero o los virus vivos inactivados. La tecnología cubana es de las más seguras porque no contiene el virus ni el material genético de éste, han comentado científicos involucrados en las investigaciones.

Soberana 02 está recomendada para su uso en adultos, con dos dosis. La segunda se aplica 28 días después de la primera y Soberana Plus en el día 56. Además, destaca que ambos biológicos están en estudio para aplicarse en niños.

Al anunciar la aprobación para uso de emergencia de las vacunas Soberana 02 y Soberana Plus, la Cofepris destacó que por ser miembro de la Conferencia Internacional sobre Armonización de Requisitos Técnicos para el Registro de Productos Farmacéuticos para Uso Humano, sus decisiones son avaladas y retomadas por el resto de los integrantes de ese organismo internacional.

Significa que con base en el registro mexicano, otros países podrían incorporarlas entre sus biológicos autorizados. Es lo que ha pasado con otras vacunas autorizadas en México, como Covaxin, de India, que han sido adquiridas y aplicadas en países de Centro y Sudamérica.

Fuente: La Jornada. Disponible en https://bit.ly/3gwq1bs

IFV INSTITUTO FINLAY DE VACUNAS

CIGB CENTRO DE INGENIERÍA GENÉTICA Y BIOTECNOLOGÍA

CUBA

La OMS determinará cuáles son los patógenos capaces de causar futuros brotes y pandemias

21 nov. La OMS ha puesto en marcha un proyecto científico a escala mundial para poner al día la lista de patógenos prioritarios que podrían causar brotes o pandemias. El objetivo es servir de referencia para la inversión, la investigación y el desarrollo (I+D) en todo el mundo, en particular en materia de vacunas, pruebas de detección y tratamientos.

El pasado viernes, 18 de noviembre, la OMS reunió a más de 300 científicos para examinar la evidencia disponible sobre más de 25 familias de virus y bacterias, así como sobre la denominada «enfermedad X», que figura en la lista para referirse a un patógeno desconocido con capacidad para desencadenar una grave epidemia internacional. Los expertos recomendarán una lista de patógenos prioritarios para los que se requiere más investigación e inversión. Los criterios utilizados serán científicos y de salud pública, pero también guardarán relación con el impacto socioeconómico, el acceso y la equidad.

La lista se publicó por primera vez en 2017 y el último ejercicio de establecimiento de prioridades (en inglés) se llevó a cabo en 2018. La lista actual incluye la COVID-19, la fiebre hemorrágica de Crimea-Congo, el ébola y la enfermedad por el virus de Marburgo, la fiebre de Lassa, el síndrome respiratorio de Oriente Medio (MERS) y el síndrome respiratorio agudo severo (SRAS), la enfermedad por el virus de Nipah y las infecciones por henipavirus, la fiebre del Valle del Rift, el zika y la citada enfermedad X.

El Dr. Michael Ryan, Director Ejecutivo del Programa de Emergencias Sanitarias de la OMS, ha señalado: «Para responder de forma rápida y eficaz a las epidemias y pandemias es fundamental centrarse en los patógenos y familias de virus prioritarios sobre los que investigar y obtener contramedidas. Sin las importantes inversiones en I+D realizadas antes de la pandemia de COVID-19, no hubiéramos podido fabricar vacunas seguras y eficaces en un tiempo récord».

Gracias al Proyecto de la OMS de I+D sobre las Epidemias se elaboran hojas de ruta de I+D para los patógenos definidos como prioritarios, a fin de señalar las lagunas de conocimiento y las prioridades para la investigación. De ese modo, los científicos y fabricantes conoces cuáles son las características de las vacunas, las pruebas diagnósticas y los fármacos que se deben obtener. Asimismo, se intenta catalogar, resumir y facilitar la realización de los ensayos clínicos necesario para desarrollar esos productos. Por otra parte, se está estudiando la posibilidad de ampliar las actividades a cuestiones éticas y reglamentarias.

Por su parte, la Dra. Soumya Swaminathan, Directora Científica de la OMS, ha dicho: «Esta lista de patógenos prioritarios se ha convertido en un punto de referencia para que los investigadores sepan dónde concentrar sus energías para hacer frente a la próxima amenaza. Se confecciona en consulta con especialistas y fija los patógenos en los que los investigadores de todo el mundo han de invertir dinero y energía a fin de obtener pruebas, tratamientos y vacunas. Queremos dar las gracias a nuestros donantes, como el gobierno de los Estados Unidos de América, a nuestros asociados y a los científicos que colaboran con la OMS para que ello sea posible».

Se espera que la lista revisada se publique en el primer trimestre de 2023.

Fuente: Organización Mundial de la Salud. Disponible en https://bit.ly/3UX7eFj

Pneumococcus, rotavirus vaccines entering national immunization program

Nov 22. Iranian scientists strive to domestically produce the two vaccines of pneumococcus and rotavirus to vaccinate all children aged one year and younger, head of the preventable diseases department of the Ministry of Health, Seyyed Mohsen Zahraei, has said.

Streptococcus pneumonia is an encapsulated bacteria with a polysaccharide capsule an essential factor in virulence. About 90 distinct pneumococcal serotypes have been identified throughout the world, with a small number of these serotypes accounting for most diseases in infants. Pneumococci are transmitted by direct contact with respiratory secretions from patients and healthy carriers.

» Infants and children in Iran are currently vaccinated against BCG, polio, hepatitis B, measles, rubella, and mumps (MMR).

Stating that there are 2 types of vaccines against pneumococcal bacteria, he said that type one is a polysaccharide, which has been used in the world for years. Another type of conjugate vaccine is that these vaccines can be injected at young ages under two years, which also has good immunogenicity.

The vaccines that are currently available in the market of Iran and the world are 10 and 13 pneumococcal vaccines, which cover 10 and 13 common serotypes of bacteria, he said.

Three types of pneumococcal vaccines have been imported this year and are available in the pharmaceutical market of the country, he further added, ISNA reported on Tuesday.

He went on to note that in the budget bill of the Iranian calendar year 1397 (March 2018- March 2019), with the approval of the Majlis (Iranian Parliament), $100 million were approved to spend on the production of two pneumococcal and rotavirus vaccines, which will be added to the country's children's vaccination program.

However, the domestic production of these two vaccines has not yet been completed, he lamented, highlighting that it is planned to provide the necessary fund to mass produce the two vaccines by the next Iranian calendar year (beginning March 2023) and inoculate one-year-old children and younger.

Infection by rotaviruses is also one of the major causes of childhood diarrhea with an associated high mortality rate (440,000 deaths/year) and is responsible for 25 million medical visits and 2 million hospitalizations every year, especially during the cold season.

The prevalence of rotavirus infections in Iran has been estimated as 30 -50 percent while the mean prevalence is reported to be 39.9 percent. According to a WHO report, in Iran, 42 percent of gastroenteritis are caused by rotaviruses which are estimated to have inflicted approximately 2000 and 270 deaths in 2008 and 2013, respectively.

In June 2021, the Pasteur Institute of Iran and Indian Bharat Biotech inked a memorandum of understanding (MOU) to transfer technical knowledge of the rotavirus vaccine, IRNA reported.

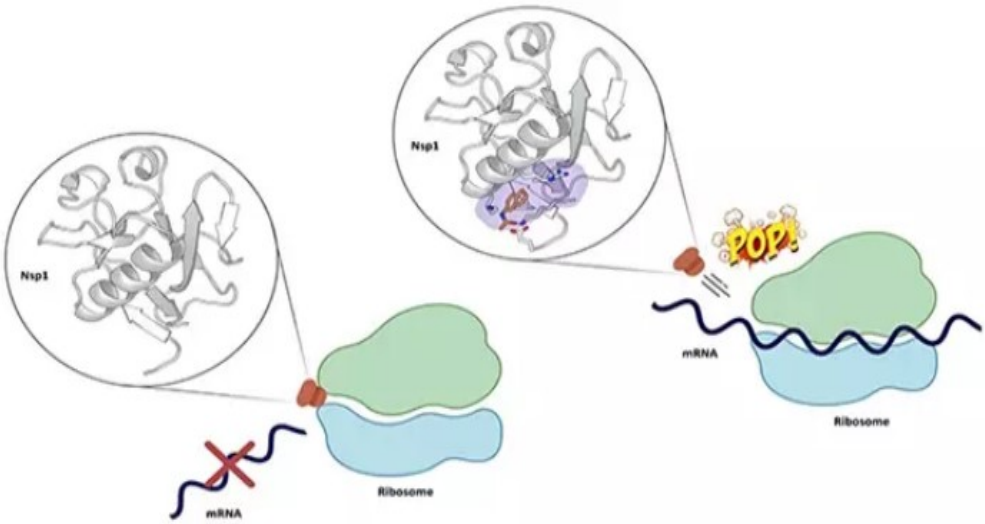
In December 2021, the Pasteur Institute announced the development of rotavirus and pneumococcus vaccines. However, it has not yet been industrialized.

BCG, polio, hepatitis B, measles, rubella, and mumps (MMR) vaccines are among the vaccines in the general vaccination package and are injected into infants and children in Iran.

Fuente: TEHRAN TIMES. Disponible en https://bit.ly/3gBe9Fh

Un estudio identifica una proteína clave del SARS-CoV-2 que podría ser diana farmacológica

22 nov. Un estudio identifica una proteína clave del SARS-CoV-2 que podría ser diana farmacológica



Posible mecanismo de acción de un fármaco dirigido al Nsp1 del SARS-CoV-2. - CREATIVE COMMONS

Un equipo de la Universidad de Ginebra (Suiza), en colaboración con el University College de Londres (Reino Unido) y la Universidad de Barcelona, ha revelado ahora la existencia de una 'cavidad' oculta en la superficie de la proteína Nsp1 del SARS-CoV-2. Esta cavidad, una potencial diana farmacológica, abre el camino al desarrollo de nuevos tratamientos contra la COVID-19 y otros coronavirus, según explican estos investigadores en un artículo publicado en la revista científica 'eLife'.

Ante la continua aparición de nuevas variantes y el riesgo de que aparezcan nuevas cepas del virus, el desarrollo de terapias innovadoras contra el SARS-CoV-2 sigue siendo un importante reto para la salud pública.

En la actualidad, las proteínas que se encuentran en la superficie del virus y/o están implicadas en su replicación son las dianas terapéuticas preferidas, al igual que la proteína 'spike' a la que se dirigen las vacunas. Una de ellas, la proteína no estructural Nsp1, había sido poco estudiada hasta ahora.

El rápido despliegue de nuevas vacunas y fármacos antivirales ha contribuido a contener la pandemia de COVID-19, causada por el virus SARS-CoV-2. A pesar de los progresos realizados, el desarrollo de nuevas terapias sigue siendo una prioridad urgente: la continua aparición de nuevas variantes, algunas de ellas resistentes a los tratamientos actuales, y la posible aparición de nuevas cepas del virus suponen un riesgo de nuevas pandemias.

Las proteínas están a la vanguardia de las dianas terapéuticas para combatir el virus. La más conocida es la proteína 'spike', que se encuentra en la superficie del SARS-CoV-2 y le da su aspecto de 'pico'. Es la clave para que el virus entre en nuestras células. Es el objetivo de las vacunas de ARN mensajero.

UNA PROTEÍNA CLAVE POCO ESTUDIADA

El SARS-CoV-2 también fabrica otras proteínas, las proteínas no estructurales, utilizando los recursos de nuestras células tras entrar en ellas. Son dieciséis. Son esenciales para la replicación del virus.

Algunas se han estudiado en el contexto del desarrollo de nuevos fármacos. Otros han recibido menos atención. Este es el caso de la proteína Nsp1. Sin cavidades evidentes en su superficie para anclar un posible fármaco, los investigadores consideraron que no podía ser un objetivo para el tratamiento.

"Nsp1 es, sin embargo, un importante agente infeccioso del SARS-CoV-2. Esta pequeña proteína viral

bloquea selectivamente los ribosomas (las fábricas de proteínas de nuestras células) haciéndolos inutilizables por nuestras células e impidiendo así la respuesta inmunitaria. Al mismo tiempo, a través de los ribosomas, Nsp1 estimula la producción de proteínas virales", ha explicado Francesco Luigi Gervasio, uno de los líderes de la investigación.

El estudio ha revelado la existencia de una cavidad 'oculta' en la superficie de Nsp1, que podría ser el objetivo de futuros fármacos contra el SARS-CoV-2. "Para descubrir esta cavidad críptica y parcialmente oculta, realizamos simulaciones utilizando algoritmos que desarrollamos. Después, para confirmar que este bolsillo podía utilizarse como diana farmacológica, utilizamos técnicas de cribado experimental y cristalografía de rayos X", ha detallado otro de los autores, Alberto Borsatto.

El equipo de investigación probó muchas moléculas pequeñas que podrían unirse a la cavidad Nsp1 (cribado experimental). Identificó una en particular, el 5 acetilaminoindano o 2E10, que también permitió determinar la disposición espacial de los átomos que componen la cavidad (mediante cristalografía). Se trata de datos esenciales que constituyen la base para el desarrollo de nuevos fármacos.

"Estos resultados allanan el camino para el desarrollo de nuevos tratamientos dirigidos a la proteína Nsp1, no sólo contra el SARS-CoV-2 y sus variantes, sino también contra otros coronavirus en los que está presente la Nsp1", ha remachado Francesco Luigi Gervasio, último autor del estudio.

Fuente: Infosalus. Disponible en https://bit.ly/3OyK4mg

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20221113:20221120 as the publication date 27 records*

1.4087591REKOMBINANTES VACCINIA-VIRUS
EP - 16.11.2022
Clasificación Internacional A61K 35/768 Nº de solicitud 21700133 Solicitante PFIZER Inventor/a BINDER JOSEPH JOHN
The present disclosure provides a replication-competent, recombinant oncolytic vaccinia virus (RVV), compositions comprising the RVV, and use of the RVV or composition for inducing oncolysis in an individual having a tumor.

2.4087604VIRALE IMPFSTOFF-ZUSAMMENSETZUNGEN UND VERFAHREN FÜR PRÄPARATE DAMIT
EP - 16.11.2022
Clasificación Internacional A61K 39/12 Nº de solicitud 21738329 Solicitante BHARAT BIOTECH INT LTD Inventor/a RAYCHAUDHURI MITHU
The present invention relates to vaccine composition comprising inactivated rotavirus antigen, methods of inactivation and preparation of vaccine composition thereof. The present invention also discloses a combination vaccine comprising inactivated rotavirus antigen and norovirus antigen, and vaccine preparations thereof.

3.20220362359DNA VACCINE CAPABLE OF EFFECTIVELY TREATING AND/OR PREVENTING TYPE 1 DIABETES AND USE THEREOF
US - 17.11.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17767291 Solicitante The Fifth Medical Center of Chinese PLA General Hospital Inventor/a Yongzhi XI
Provided is use of a recombinant nucleic acid construct containing a B7-2-PE40 exotoxin fusion gene in the preparation of a DNA vaccine or medicament for treatment and/or prevention of type 1 diabetes. The DNA vaccine can reduce blood glucose in patient with type 1 diabetes, restore the secretion of insulin of the patients per se, and reduce the contents of islet cell autoantibody (ICA) and glutamate decarboxylase autoantibody (GAD) in the patients.

4.20220363721RECOMBINANT VARICELLA-ZOSTER VIRUS (VZV) VACCINE
US - 17.11.2022
Clasificación Internacional C07K 14/005 Nº de solicitud 17422835 Solicitante BEIJING LUZHU BIOTECHNOLOGY CO., LTD. Inventor/a Jian KONG
The present disclosure discloses a recombinant varicella-zoster virus (VZV) vaccine, including a fusion protein formed by an amino acid sequence of an extracellular domain of a recombinant glycoprotein gE of a live attenuated VZV strain (OKA strain) gene and an Fc fragment of human immunoglobulin. The present disclosure further provides preparation and use of the fusion protein, a corresponding recombinant gene, a eukaryotic expression vector, etc. The fusion protein of the present disclosure has prominent immunogenicity and can induce the high-level expression of neutralizing antibodies in serum.

5.20220362370COMPOSITE PROTEIN MONOMER HAVING NON-STRUCTURAL PROTEIN OF VIRUS SUPPORTED THEREON, AGGREGATE OF COMPOSITE PROTEIN MONOMER, AND COMPONENT VACCINE COMPRISING AGGREGATE AS ACTIVE INGREDIENT
US - 17.11.2022

Clasificación Internacional A61K 39/12 Nº de solicitud 17638085 Solicitante TOKYO INSTITUTE OF TECHNOLOGY Inventor/a Takafumi UENO
An object of the present invention is to establish means for providing a component vaccine which can elicit immunity to a non-structural protein. The present inventors have found that the object can be attained by providing a component vaccine containing an associated product containing a trimer and/or a hexamer of a molecular needle to which a non-structural protein of a pathogenic virus is attached.

6.20220362159TABLETIZATION OF PEPTIDE SELF-ASSEMBLIES AND METHODS OF MAKING AND USING THE SAME
US - 17.11.2022
Clasificación Internacional A61K 9/20 Nº de solicitud 17764406 Solicitante Duke University Inventor/a Joel COLLIER
The present disclosure provides, in part, peptide self-assemblies that are made into tablet form and methods of making and using the same. In some embodiments, the disclosure provides methods and formulations for a tabletized form of a vaccine, particularly a vaccine comprising self-assembling peptide-polymer nanofibers, an excipient and an adjuvant. Methods of making and using the tablet formulation are also provided.

7.4087920ALPHA-1,3-GALACTOSYLTRANSFERASE EXPRIMIERENDE REKOMBINANTE VIREN UND IHRE VERWENDUNG
EP - 16.11.2022
Clasificación Internacional C12N 7/01 Nº de solicitud 21738478 Solicitante UNIV HONG KONG Inventor/a POON LIT MAN
Disclosed are viruses, and vaccines comprised of and made from such viruses, that include a heterologous nucleic acid segment encoding α-1, 3-galactosyltransferase (α-1, 3-GT) such that the nucleic acid segment expresses α-1, 3-GT when the virus infects a host cell. Such viruses produce proteins having α-1, 3-galactose. The presence of α-1, 3-galactose on proteins of infected cells can powerfully stimulate the immune response of the host against the viral proteins of the virus, thus enhancing the effect of the virus as a vaccine. Also disclosed are vaccines that include and/or are produced by such viruses. Also disclosed are methods of making and using such viruses and vaccines, such as administering to a subject in need thereof a vaccine as disclosed and such as making a vaccine that includes one or more viral proteins expressed by a virus as disclosed.

8.20220363724METHODS OF OPTIMIZING NUCLEOTIDE SEQUENCES ENCODING ENGINEERED INFLUENZA PROTEINS
US - 17.11.2022
Clasificación Internacional C07K 14/11 Nº de solicitud 17813445 Solicitante SANOFI PASTEUR INC. Inventor/a Tod Dwayne Strugnell
The disclosure provides methods for generating an optimized nucleotide sequence encoding an engineered influenza structural protein and the optimized nucleotide sequences obtained therefrom. The optimized nucleotide sequences can be used in a reverse genetics system to facilitate the rescue of infectious influenza virus containing the engineered structural proteins and/or enhance viral titers. Also provided are methods of preparing an influenza vaccine composition using the optimized nucleotide sequences, as well as methods of inducing an immune response using the influenza vaccine composition.

9.20220362362PERSONALIZED IMMUNOTHERAPY AGAINST SEVERAL NEURONAL AND BRAIN TUMORS
US - 17.11.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17852205 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.

10.20220362363PERSONALIZED IMMUNOTHERAPY AGAINST SEVERAL NEURONAL AND BRAIN TUMORS
US - 17.11.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17852207 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.

11.4089170ZUSAMMENSETZUNG, DIE ANTIGEN-PRÄSENTIERENDE ZELLEN UMFASST, DIE MHC UND TUMORANTIGEN GEMEINSAM EXPRIMIEREN, UND KREBSBEHANDLUNG UNTER VERWENDUNG DAVON
EP - 16.11.2022
Clasificación Internacional C12N 15/62 Nº de solicitud 21738954 Solicitante LG CHEMICAL LTD Inventor/a SHEEN JOON HO
The present invention relates to a vaccine composition for preventing or treating cancer comprising antigen-presenting cells, on the cell surface of which a composite of major histocompatibility complex (MHC) and tumor antigen is overexpressed.

12.WO/2022/241229STABILIZED S2 BETA-CORONAVIRUS ANTIGENS
WO - 17.11.2022
Clasificación Internacional C07K 14/005 Nº de solicitud PCT/US2022/029216 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a MCLELLAN, Jason
Provided herein are engineered, stabilized beta-coronavirus S2 proteins, such as engineered, stabilized MERS S2 proteins. In some aspects, the engineered S2 proteins exhibit enhanced antigenicity. Methods are also provided for use of the engineered S2 proteins as diagnostics, in screening platforms, and/or in vaccine compositions.

13.20220362376ADJUVANT AND VACCINE COMPOSITIONS
US - 17.11.2022
Clasificación Internacional A61K 39/39 Nº de solicitud 17656750 Solicitante Advanced BioAdjuvants LLC Inventor/a Jay D. Gerber
Methods are provided for preparing and delivering an adjuvant for vaccines including lecithin, polymer and one or more additives. The polymer is preferably polyacrylic acid-based. The additive is preferably one or more of a glycoside and a sterol. The method of preparation includes hydrating lecithin and a polymer in saline or water and mixing the lecithin and polymer to form the adjuvant. Additives can be included prior to or after hydration of the lecithin and polymer.

14.WO/2022/236364METHODS FOR TREATING, AMELIORATING OR PREVENTING INFECTIONS USING DRUG AND VACCINATION COMBINATION TREATMENT
WO - 17.11.2022
Clasificación Internacional A61K 31/00 Nº de solicitud PCT/AU2022/050437 Solicitante TOPELIA AUST LIMITED (ACN 652 771 670) Inventor/a BORODY, Thomas Julius
In alternative embodiments, provided are methods for treating, ameliorating, decreasing the chances of having any adverse effects from, decreasing the severity of adverse effects from, or preventing an infection, or boosting or enhancing natural immunity acquired by an infected individual, by administration of: an inactivated infectious causative agent of the infection, or an antibiotic and/or an anti-viral drugs and a vaccine directed to a causative agent of the infection and/or an attenuated and/or a live, viable or infectious causative agent of the infection. In alternative embodiments, the infection is bacterial or viral. In alternative embodiments, the viral infection is a coronavirus infection such a Covid-19 infection. In alternative embodiments, methods as provide herein prevent or decrease the prevalence or severity of "vaccine breakthrough infections" after vaccination, where external mutants of COVID-19 infect patients in spite of the fact that they have undergone immunization, for example, to prevent a mutant or variant COVID-19 infection. In alternative embodiments, an antiviral combination administered in coordination with a vaccine comprises PF-07321332 or PAXLOVID™ and/or ritonavir, or ivermectin, doxycycline and a zinc or a zinc salt. In alternative embodiments, methods as provided herein are used to prevent in vivo mutations of such mutant infectious agent to enhance the efficacy of an administered vaccination; in other words, methods as provided herein are used to prevent in vivo replication of an acquired viral mutant or variant infectious agent, and thus also prevents ongoing mutations of the viral infectious agent because using the combination antiviral co-therapy where there is no replication of infectious agent and so there is no possible further mutation of the infectious agent.

15.20220363746METHODS FOR TREATING CORONAVIRUS INFECTION AND RESULTING INFLAMMATION-INDUCED LUNG INJURY
US - 17.11.2022
Clasificación Internacional C07K 16/24 Nº de solicitud 17306884 Solicitante HUMANIGEN, INC. Inventor/a Cameron DURRANT
The present invention provides methods for treating a subject infected with 2019 coronavirus (SARS-CoV-2) comprising administering to the subject a therapeutically effective amount of a GM-CSF antagonist or a therapeutically effective amount of a GM-CSF antagonist and a second drug, including an anti-viral agent, an anti-SARS-CoV-2 vaccine, and serum containing human polyclonal antibodies to SARS-CoV-2.

16.4087940ZELLFREIE DNA-ÜBERWACHUNG
EP - 16.11.2022
Clasificación Internacional C12Q 1/68 Nº de solicitud 21738150 Solicitante GRITSTONE BIO INC Inventor/a SUN JAMES XIN
Methods and compositions for monitoring mutation burden, cancer status, vaccine efficacy using cell-free DNA sequencing are disclosed. In some aspects, the method comprises the steps of: a. obtaining or having obtained sequencing data of cell-free DNA (cfDNA) from a sample from the subject, and wherein the sequencing data comprises a target coverage of at least 50% of all polynucleotide regions of interest corresponding to mutations present in an exome of the cancer and wherein the sequenced polynucleotide regions of interest have a mean read depth of at least 1000X.

17.20220363717PEPTIDES, COMBINATION OF PEPTIDES, AND CELL BASED MEDICAMENTS FOR USE IN IMMUNOTHERAPY AGAINST URINARY BLADDER CANCER AND OTHER CANCERS
US - 17.11.2022

Clasificación Internacional C07K 7/08 Nº de solicitud 17832246 Solicitante Immatics Biotechnologies GmbH Inventor/a Andrea MAHR
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

18.20220362364A*03 RESTRICTED PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST CANCERS AND RELATED METHODS
US - 17.11.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17868368 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

19.20220362302PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LEUKEMIAS AND OTHER CANCERS
US - 17.11.2022
Clasificación Internacional A61K 35/17 Nº de solicitud 17843412 Solicitante Immatics Biotechnologies GmbH Inventor/a Juliane Sarah WALZ
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.

20.20220363730NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LUNG CANCER, INCLUDING NSCLC, SCLC AND OTHER CANCERS
US - 17.11.2022
Clasificación Internacional C07K 14/47 Nº de solicitud 17877515 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

21.20220363729NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LUNG CANCER, INCLUDING NSCLC, SCLC AND OTHER CANCERS
US - 17.11.2022
Clasificación Internacional C07K 14/47 Nº de solicitud 17860803 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

22.4087934MIKROBIELLES SYSTEM ZUR HERSTELLUNG UND ABGABE VON EUKARYOTEN-TRANSLATIONSFÄHIGEN MRNA AN EUKARYA
EP - 16.11.2022
Clasificación Internacional C12N 15/70 Nº de solicitud 21738093 Solicitante SIVEC BIOTECHNOLOGIES LLC Inventor/a LINKE LYNDSEY M
A bacterial system for the generation and delivery of eukaryote-translatable mRNA to eukaryotic cells. The system uses invasive, non-pathogenic bacteria to generate and deliver functional mRNA cargo to eukaryotic cells. Additionally, the system uses bacteria to generate functional mRNA that can be extracted from the bacterial cell for downstream applications. The bacteria contain at least one prokaryotic expression cassette encoding the mRNA; the mRNA contains a bacterially transcribed poly-A sequence, and a 5' cap or pseudo-cap element, e.g., an internal ribosome entry site (IRES) element, that will mediate translation in the eukaryotic host cell. Examples of therapeutic mRNA function include, but are not limited to, providing genetic material encoding antibodies, vaccine antigens, and defective genes in the host.

23.WO/2022/238689VACCINE FORMULATION COMPRISING RECOMBINANT OVERLAPPING PEPTIDES AND NATIVE PRTOEINS
WO - 17.11.2022
Clasificación Internacional A61P 31/12 Nº de solicitud PCT/GB2022/051175 Solicitante OXFORD VACMEDIX UK LIMITED Inventor/a JIANG, Shisong
The invention provides formulations, compositions, and kits comprising polypeptides and native proteins or portions thereof for the immunization and/or treatment of a subject, or polypeptides encoding said polypeptides and native proteins or portions thereof, as well as methods of treatment using said formulations, compositions, and kits, and methods of manufacture of said formulations, compositions, and kits.

24.20220362361COMPOSITIONS AND METHODS FOR PRODUCING ENHANCED IMMUNE RESPONSES AND RAPID ANTIBODY PRODUCTION
US - 17.11.2022
Clasificación Internacional A61K 39/00 Nº de solicitud 17769899 Solicitante University of Virginia Patent Foundation Inventor/a Steven L. Zeichner
Provided are modified bacteria and derivatives thereof that express antigens of interest. In some embodiments, the bacterium has a reduced genome and induces an enhanced immune response against the antigen of interest when administered to a subject as compared to an immune response that would have been induced by a bacterium of the same strain that has a full complement of genes. In some embodiments, the antigen is expressed on a surface of a bacterium. Also provided are method for

producing antibody against antigens of interest, vaccine compositions, methods for vaccinating subjects, methods for treating cancers in subjects, methods for modulating inappropriate and undesirable immune response, methods for targeting materials in or on a human or animal that may be the cause of disease or otherwise undesirable phenotypes, and expression vectors for expressing antigens on the surface of reduced genome bacteria.

25.WO/2022/240898DEVELOPMENT OF A HIGHLY EFFICIENT SECOND GENERATION FENTANYL-CONJUGATE VACCINE TO TREAT FENTANYL ADDICTION
WO - 17.11.2022
Clasificación Internacional A61P 25/36 Nº de solicitud PCT/US2022/028621 Solicitante CORNELL UNIVERSITY Inventor/a CRYSTAL, Ronald, G.
The invention is directed to fentanyl analogues and a conjugate comprising same, as well as a method of inducing an immune response against fentanyl.

26.20220362367MULTIPLE ANTIGEN PRESENTING SYSTEM (MAPS)-BASED STAPHYLOCOCCUS AUREUS VACCINE, IMMUNOGENIC COMPOSITION, AND USES THEREOF
US - 17.11.2022
Clasificación Internacional A61K 39/085 Nº de solicitud 17688780 Solicitante THE CHILDREN'S MEDICAL CENTER CORPORATION Inventor/a Richard MALLEY
The present embodiments provide for an *S. aureus* (SA) Multiple Antigen Presenting System (MAPS) immunogenic composition comprising an immunogenic polysaccharide which induces an immune response, where at least one *S. aureus* (SA) peptide or polypeptide antigen is associated to the immunogenic polysaccharide by complementary affinity molecules. In some embodiments, the immunogenic polysaccharide can be an antigenic capsular polysaccharide of a Type 5 or Type 8 from *S. aureus*, or alternatively, a different immunogenic capsular or noncapsular polysaccharide, and where the protein or peptide SA antigens are indirectly linked via an affinity binding pair. The present SA-MAPS immunogenic compositions can elicit both humoral and cellular immune responses to the immunogenic polysaccharide and one or multiple SA antigens at the same time.

27.20220362152VACCINE FOR ELICITING IMMUNE RESPONSE COMPRISING RNA ENCODING AN IMMUNOGEN AND LIPID FORMULATIONS COMPRISING MOLE PERCENTAGE OF LIPIDS
US - 17.11.2022
Clasificación Internacional A61K 9/127 Nº de solicitud 17808519 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a Andrew Geall
Provided are vaccines for eliciting an immune response. The vaccines for eliciting an immune response comprise RNA encoding an immunogen, which is delivered in a liposome for the purposes of immunisation. The liposome includes lipids which have a pKa in the range of 5.0 to 7.6 and, preferably, a tertiary amine. These liposomes can have essentially neutral surface charge at physiological pH and are effective for immunisation.

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