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 los 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.
- Patentes más recientes en USPTO sobre vacunas.

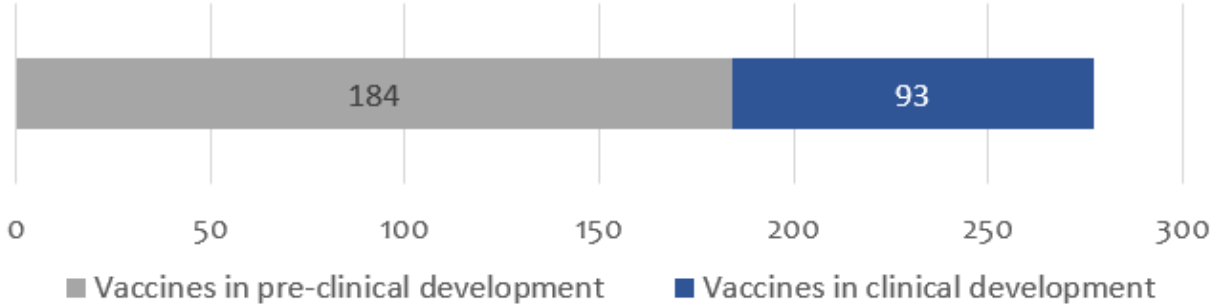
IFV INSTITUTO FINLAY DE VACUNAS SiViFinlay VaCyT

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

Última actualización por la OMS: 30 de abril de 2021.

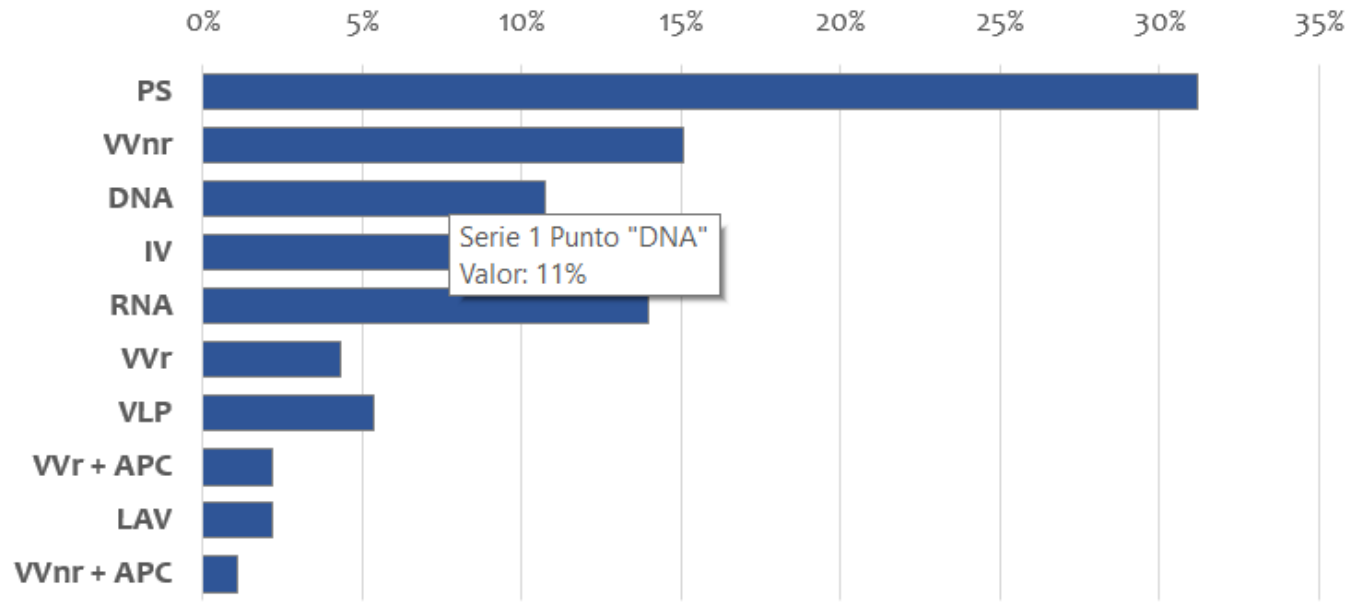
Fuente de información utilizada: World Health Organization | R&DBlueprint Powering research to prevent epidemics

93 candidatos vacunales en evaluación clínica y 184 en evaluación preclínica.



Candidatos vacunales en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	29	31%
VVnr	Viral Vector (non-replicating)	14	15%
DNA	DNA	10	11%
IV	Inactivated Virus	13	14%
RNA	RNA	13	14%
VVr	Viral Vector (replicating)	4	4%
VLP	Virus Like Particle	5	5%
VVr + APC	VVr + Antigen Presenting Cell	2	2%
LAV	Live Attenuated Virus	2	2%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
		93	



Candidatos vacunales más avanzados a nivel global

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Fase
Sinovac/China	Virus Inactivado	4
Wuhan Institute of Biological Products/Sinopharm/China	Virus Inactivado	3
Beijing Institute of Biological Products/Sinopharm/China	Virus Inactivado	4
University of Oxford/AstraZeneca/Reino Unido	Vector viral no replicativo	4
CanSino Biological Inc./Beijing Institute Biotechnology/China	Vector viral no replicativo	3
Gamaleya Research Institute/Rusia	Vector viral no replicativo	3
Janssen Pharmaceutical Companies/Estados Unidos	Vector viral no replicativo	3
Novavax/Estados Unidos	Subunidad proteica	3
Moderna/NIAID/Estados Unidos	ARN	4
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN	4
Anhui Zhifei Longcom Biopharmac./Inst. Microbiology, Chinese Academy Sciences	Subunidad proteica	3
CureVac AG/Alemania	ARN	3
Institute of Medical Biology/Chinese Academy of Medical Sciences	Virus inactivado	3
Research Institute for Biological Safety Problems, Kazakhstan	Virus inactivado	3
Zydus Cadila Healthcare Ltd./India	ADN	3
Bharat Biotech/India	Virus Inactivado	3
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica	3
Beijing Minhai Biotechnology Co/ China	Virus Inactivado	3
Instituto Finlay de Vacunas/Cuba	Subunidad proteica	3
Federal Budgetary Research Institution State Research Center of Virology and Biotechnology "Vector"/Rusia	Subunidad proteica	3
Academy Military Science (AMS) Walvax Biotechnology, Suzhou Abogen Bioscience/China	ARN	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	3

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
Vaxart/Estados Unidos	Vector viral no replicativo	Oral	1
Univ. Hong Kong, Xiamen Univ./Beiging Wantai Biol. Pharm./China	Vector viral replicativo	Intranasal	2
Symvivo/Canadá	ADN	Oral	1
ImmunityBio, Inc./Estados Unidos	Vector viral no replicativo	Oral	1
Codagenix/Serum Institute of India	Virus vivo atenuado	Intranasal	1
Center for Genetic Engineering and Biotechnology (CIGB)/ Cuba	Subunidad proteica	Intranasal	1/2
Altimmune, Inc./Estados Unidos	Vector viral no replicativo	Intranasal	1
Razi Vaccine and Serum Research Institute/India	Subunidad proteica	Intranasal	2
Bharat Biotech International Limited/India	Vector viral no replicativo	Intranasal	1
Meissa Vaccines, Inc./Estados Unidos	Virus vivo atenuado	Intranasal	1

Noticias en la Web

Los efectos secundarios de vacuna AstraZeneca y Johnson & Johnson

21 abr. Las farmacéuticas AstraZeneca y Johnson & Johnson se han visto involucradas en la suspensión de sus productos debido a los raros y extraños efectos secundarios que provoca la dosis de estas dos vacunas. El efecto es tan raro que sólo ha ocurrido a una persona de un millón, es decir, es más fácil que te ganes la lotería navideña que morir de una trombocitopenia. Antes de que te asustes y pidas que suspendan la vacuna de AstraZeneca en el país, debes de saber que la Organización Mundial de la Salud (OMS) ha indicado que los beneficios de esta inmunización son más que las consecuencias que puede provocar, de hecho, la COVID-19 tiene mayor probabilidad de causarte un problema similar.

Para entender lo que sucede con la vacuna de AstraZeneca y la de Johnson and Johnson, consultamos a un epidemiólogo de la Facultad de Medicina de la UNAM, quien nos dijo que este es un fenómeno extraño que está sucediendo con esta vacuna.

¿Qué es lo que sucede?

"Lo que se sabe es que hay una alteración al nivel de las plaquetas que pudiera ser que en los anticuerpos que se van generando con la vacuna tienen alguna relación extraña con las plaquetas en algunas personas y se altera la actividad de las plaquetas, produciéndose al mismo tiempo una disminución de plaquetas y un aumento de coagulación, lo cual es contradictorio", explicó Malaquías López Cervantes, epidemiólogo y profesor de Salud Pública en la Facultad de Medicina. Y es que normalmente una disminución de plaquetas se asocia con sangrado, pero en este caso disminuye y hay coagulación; sin embargo hasta el momento no se sabe exactamente por qué sucede esto, pero sí se sabe con qué frecuencia: en uno por millón de personas vacunadas.

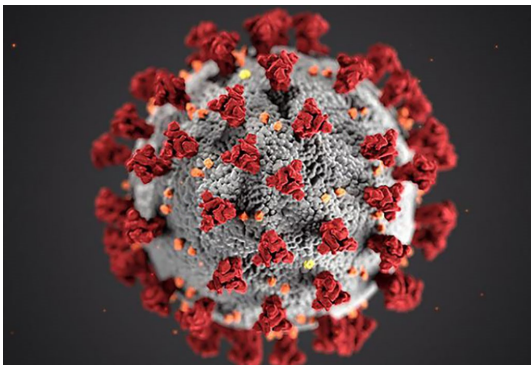
¿A qué se debe esta problemática?

Estos problemas podrían estar relacionados con la técnica de ambas vacunas de "vector viral". Esta se basa en tomar como soporte otro virus, que se modifica para que transporte en el organismo informaciones genéticas capaces de combatir la enfermedad. Ambas utilizan un adenovirus, un tipo de virus muy corriente. El de AstraZeneca es un adenovirus de chimpancé y el de J&J es uno humano. "Hay quienes piensan que se trata de dos vacunas en las cuales se monta un pedacito de ácido nucleico viral sobre otro virus y ese otro virus sirve como transporte para ese pedacito de ácido nucleico viral, las vacunas de Pfizer y Moderna son sólo el pedacito de ácido nucleico, pero las vacunas de AstraZeneca y Johnson and Johnson no, ese pedacito se pone sobre otro virus y el otro virus tiene que entrar e inducir la producción de la molécula viral, entonces pudiera ser el hecho de que las dos emplean un virus como vehículo", explicó el académico de la Facultad de Medicina.

Mathieu Molimard, especialista francés en farmacología, concluyó que es muy probable que los efectos secundarios de esta vacuna se deban al vector adenovirus de ambas vacunas, de AstraZeneca y de Johnson and Johnson. "Todo indica que se debe al vector adenovirus", explicó en Twitter Mathieu Molimard, especialista francés en farmacología, recordando que este tipo de problemas no se da con las vacunas de Pfizer/BioNTech y la de Moderna, que utilizan la técnica de ARN mensajero. Por ahora, se desconoce si estas patologías también se registran con otra vacuna que emplea adenovirus como la rusa Sputnik. Esta está autorizada en unos 60 países, pero no en la UE ni en Estados Unidos. Malaquías López Cervantes menciona que todavía no se sabe lo suficiente, ya que podría ser que de alguna forma la inmunidad que están produciendo se parece a los mecanismos reales del virus para producir un fenómeno similar; sin embargo, faltan más investigaciones que realizar.

Fuente: MILENIO. Disponible en https://cutt.ly/5bcgz6a

Encuentran que biomarcador asociado con la mayor severidad y mortalidad de la COVID-19 podría ser usado para administrar mejor el tratamiento



21 abr. La gravedad variable de los síntomas de COVID-19 en los pacientes se refleja en los niveles de un biomarcador químico en su cuerpo que, según los científicos, se podría usar para administrar mejor los tratamientos y otras intervenciones, incluidas las vacunas.

Investigadores de la Universidad de Sassari (Sassari, Italia) y la Universidad de Flinders (Adelaida, Australia), examinaron los niveles de una sustancia química llamada amiloide A sérico (SAA), una proteína sintetizada en el hígado que puede aumentar hasta 1000 veces en las primeras 24-48 horas de una infección. A su vez, los investigadores afirman que un aumento de SAA puede perpetuar aún más la inflamación y causar anomalías en los coágulos y daño a los órganos, concluyendo que los niveles de SAA están asociados con una mayor gravedad y mortalidad por COVID-19. Para comprender el vínculo entre la SAA y la gravedad y la mortalidad de la COVID-19, los investigadores se centraron en la última investigación que incluyó 19 estudios de más de 5.600 pacientes con COVID-19 para marcadores específicos que podrían predecir la gravedad y la progresión de la enfermedad.

Dado el papel clave de la inflamación en la COVID-19, los marcadores que reflejan un estado de inflamación excesiva podrían ser particularmente útiles para la estratificación del riesgo y el manejo efectivo. Si bien se han implementado vacunas seguras y efectivas en todo el mundo, actualmente existen pocas terapias efectivas para tratar la COVID-19 en la comunidad y en el hospital. En este contexto, el uso de marcadores específicos para predecir la gravedad de la enfermedad facilitaría la identificación temprana de pacientes que requieren un manejo y monitoreo agresivos y ayudaría con el uso juicioso de los recursos de atención médica.

“Nuestros análisis mostraron que los pacientes con COVID-19 con enfermedad grave o que finalmente murieron tenían niveles significativamente más altos de SAA en comparación con los pacientes con COVID-19 leve”, dijo el autor correspondiente principal, el profesor de farmacología clínica, Arduino Mangoni, de la Universidad Flinders en Australia del Sur. “Los pacientes con formas graves de la enfermedad por coronavirus tienen una inflamación excesiva, alteraciones en la formación de coágulos y daño significativo en varios órganos, en particular el pulmón, el riñón, el corazón y el hígado”.

Los investigadores afirmaron que: “Esta sustancia química puede ayudar, junto con otras características del paciente, a predecir qué pacientes con COVID-19 tendrán probabilidad de deteriorarse y requerir un tratamiento agresivo”.

Fuente: LabMedica. Disponible en https://cutt.ly/zbchStp

Covid-19 vaccine mixing: the good, the bad and the uncertain

22 apr. Getting the right vaccines into the right people at the right time during a global pandemic is, unsurprisingly, proving to be a logistical challenge.

All of the COVID-19 vaccines widely available, with the exception of Johnson & Johnson’s (J&J) one-and-done jab, require two doses. The first dose primes the immune system and the second dose (usually administered a few weeks after the first) boosts it. The prospect of mixing vaccines doses offers a chance to

bolster vaccine rollouts and, potentially boost the immunity provided, but evidence around the wisdom of this approach is scarce when it comes to COVID-19.

"With supply-chain and shortage issues affecting the global rollout of COVID-19 vaccines, especially for the second dose, researchers are exploring the idea of mixing and matching vaccines. But is it safe?".

The US Centers for Disease Control and Prevention has warned against the mixing of vaccines unless there are "exceptional situations", such as a shortage of the first-dose vaccine because of production or distribution problems.

In the UK, Public Health England has taken a similar stance. After the government delayed second vaccine doses for up to 12 weeks so that more people could get their first jab and at least some protection, health officials acknowledged that, in exceptional circumstances, mismatched doses may be given to those who come in for their second booster only to find that the vaccine they originally had is not available.

While drug makers are churning out a variety of effective and mostly safe vaccines that have been administered to millions worldwide, there are undeniable bottlenecks in the supply chain and barriers to overcome if the rest of the world is to be fully vaccinated anytime soon.

Then, with situations such as the rare blood clot cases potentially linked to the AstraZeneca (AZ) and J&J vaccines, there are millions of people who have received a first dose of these jabs and may now be unable or unwilling to get a second.

Some experts are wondering whether flexibility in allowing mixed-dose vaccination might help people get fully vaccinated faster. Others have argued that mixing two different vaccines could actually do a better job of protecting against COVID-19 than sticking to the same one for all doses.

Do vaccines mix?

COVID-19 vaccines – those that have been approved and the ones still in development – use various methods and mechanisms to boost immunity. For example, both AZ's and Pfizer-BioNTech's vaccines prime the body's immune system to target the coronavirus spike protein but target different parts of the spike.

AstraZeneca's adenovirus vaccine uses a weakened version of a common cold virus found in chimpanzees (ChAdOx1) to present the spike protein to the immune system, while Pfizer's mRNA-based vaccine delivers genetic instructions for making the spike protein and encourages human cells to produce it.

Royal Melbourne Institute of Technology (RMIT) vaccine researcher Dr Kylie Quinn has described Covid-19 vaccines as vehicles delivering cargo – the vehicles may be different, and they may drop off their payloads by different means, but the spike protein cargo is the same.

Because the cargo is identical, the vaccines should, in theory, work well together. It does make some simple sense that sparking more than one arm of the immune system could boost immunity on the whole.

Mount Sinai Hospital epidemiologist and assistant professor of medicine Dr Dana Mazo explained to HealthLine that, in some cases, one type of vaccine can indeed enhance the effectiveness of another.

"There are two different types of pneumococcal vaccines that have different mechanisms of action, and in certain situations we recommend boosting one with the other," she said.

The Sputnik V COVID-19 vaccine produced by Russia's Gamaleya Research Institute harnesses two kinds of adenovirus in its prime and booster doses to deliver genetic instructions to the immune system. The first jab uses a harmless common cold virus (Ad26) and the second, given 21 days later, uses another safe but scientifically engineered cold virus (Ad5).

Using an alternative vehicle to deliver the cargo allows the vaccines genetic payload to skirt inadvertent immune attack.

The method paid off, and Sputnik V has been found to be one of the most effective vaccines at 91.6% and has been rolled out in Russia and 56 other countries.

This is not the first time the institute has used the strategy of using different viruses for each dose. In 2017, researchers at Gamaleya created an Ebola vaccine whose first dose contained an adenovirus and the second shot used another virus, called vesicular stomatitis virus.

However, it should be noted that Gamaleya has been criticised by researchers for using Ad5 following catastrophic trials conducted by Merck in 2007 involving an Ad5-based HIV vaccine that managed to somehow increase the risk of infection with the AIDS virus among some recipients.

Unsurprisingly, many experts remain skeptical about mixing vaccines. One important aspect to consider is the regulatory complications involved in mixing two different vaccines. What if one is authorised for emergency use and the other is not?

It is also unknown whether the notion of using two different vaccines that rely on two different underlying immunity-boosting platforms is actually counterproductive. But the most important unanswered question is whether mixing vaccines will cause unwanted adverse reactions.

Texas Health Resources infectious disease specialist Dr Nikhil Bhayani told Healthline he believed that “by using two different vaccines, there is not going to be a greater magnitude of protection against the disease,” and said that mixing two different vaccines is “not recommended”.

Who is testing the mix-and-match theory?

Currently, in the UK, an eight-arm study assessing the mix-and-match theory is underway. The ambitious University of Oxford-run trial called Com-COV2 is testing various combinations of the vaccines currently approved in Britain – Pfizer-BioNTech, AstraZeneca and Moderna, as well as Novavax’s candidate, which is expected to be approved in the coming weeks.

The trial will enrol 1,050 adult subjects aged 50 years or older who received their first dose of a Covid-19 vaccine in the past eight to 12 weeks.

Recipients will have received either the Oxford-AstraZeneca or Pfizer vaccine and will be randomly allocated to receive either the same vaccine for their second dose or a dose of Novavax or Moderna’s jabs. If more vaccines are approved over the coming months, they may also be added to the trial.

In announcing Com-COV, University of Oxford associate professor in paediatrics and vaccinology and chief investigator on the trial, Dr Matthew Snape, cited experiments in mice in which combinations of the Pfizer and AstraZeneca vaccines boosted immunity better than two doses of either one alone. Now this cocktail and others are being tested in humans.

"If we can show that these mixed schedules generate an immune response that is as good as the standard schedules, and without a significant increase in the vaccine reactions, this will potentially allow more people to complete their COVID-19 immunisation course more rapidly," Snape told the BBC.

"What I'm hoping is that we won't rule out any combinations. That's how we need to look at it: are there any combinations we shouldn't be giving, because they don't generate a good immune response? And I'm hoping that won't be the case," he added.

Results of the trial are expected in June this year.

Gamaleya and AstraZeneca have registered a pair of clinical trials in which volunteers will receive a dose of AstraZeneca's vaccine and another of Sputnik V.

One trial in Azerbaijan is underway, and a second in Russia is still under review by the country's ministry of health.

In Europe, meanwhile, the concerns around the safety of the AZ vaccine has prompted countries to either recommend dose-mixing or accelerate their research into the safety and efficacy of this approach. On 1 April, Germany advised that those under 55 receive an mRNA vaccine alternative, such as the Pfizer and Moderna vaccines, as a follow-up shot. Soon after, France recommended the same for people under the age of 60.

Meanwhile, Norway is awaiting the results of a clinical trial assessing the effectiveness of mixing vaccines before making a decision.

This week, government researchers in Spain said they will study the effects of mixing COVID-19 vaccines in response to the shifting guidelines on the safety of the AZ shot. The trial will draw on a sample of 600 participants of all ages with the objective to determine within 28 days whether a second dose of the Pfizer vaccine can be given to patients who have received the AstraZeneca vaccine.

For now, it's too soon to tell whether mixing and matching vaccines is effective, more effective or safe. The world is watching these trials closely to see the outcomes.

"There is no reason to think it's not going to work, and it might even work better – who knows," theme leader of immunology at the Doherty Institute in Melbourne Professor Dale Godfrey told Australian newspaper The Age.

"Mixing the platforms does not contain any obvious, inherent risk," he said. "But the main concern is it is not very well tested".

Fuente: CLINICAL TRIALS ARENA. Disponible en https://cutt.ly/obccOmk

¿Cuánto dura la protección de la vacuna contra el COVID-19?

22 abr. Los expertos no lo saben todavía porque siguen estudiando a las personas vacunadas para determinar cuándo podría desaparecer la inmunidad. La eficacia de las vacunas contra las nuevas variantes también determinará la necesidad de inyecciones adicionales, y cuándo y cómo administrarlas.

"Solo tenemos información del tiempo que se llevan estudiando las vacunas", dijo Deborah Fuller, investigadora de vacunas en la Universidad de Washington. "Tenemos que estudiar a la población vacunada y empezar a ver en qué punto se vuelve vulnerable de nuevo al virus".

Por el momento, el estudio que realiza la farmacéutica Pfizer indica que la vacuna de dos dosis que desarrolló con BioNTech sigue siendo altamente efectiva durante al menos seis meses, y es probable que por más tiempo. Quienes recibieron la de Moderna también mantienen niveles notables de anticuerpos a seis meses de recibir la segunda dosis del fármaco.

Pero los anticuerpos no lo explican todo. Para luchar contra intrusos como los virus, nuestro sistema inmunológico tiene otra línea de defensa llamada células B y T, algunas de la cuales pueden permanecer en el cuerpo mucho tiempo después de que hayan bajado los niveles de anticuerpos. Si se encuentran con el mismo virus en el futuro, podrían activarse más rápidamente.

Aunque no impidan la enfermedad por completo, podrían ayudar a mitigar su gravedad. Pero por el momento se desconoce el papel exacto que podrían desempeñar esas células de "memoria" contra el coronavirus, y por cuánto tiempo.

Si bien las vacunas actuales contra el COVID-19 podrían ser efectivas durante alrededor de un año, probablemente no ofrecen protección de por vida, como la del sarampión, afirmó la doctora Kathleen Neuzil, experta en vacunas de la Universidad de Maryland.

"Va a estar en algún punto en medio de ese rango tan amplio", afirmó.

Las variantes son otro motivo por el que se podría necesitar una inyección adicional.

Las vacunas actuales están diseñadas para actuar frente a una proteína de pico específica en el coronavirus, dijo Mehul Suthar, del Centro de Vacunas Emory. Si el virus muta lo suficiente con el tiempo, podría haber que actualizarlas para aumentar su eficacia.

Por el momento las vacunas parecen proteger contra las variantes más conocidas, aunque algo menos frente a la vista primero en Sudáfrica.

Si resulta que se necesita otra inyección, una única dosis podría aumentar la protección de las vacunas actuales o contener el fármaco contra una o más variantes.

La necesidad de una dosis de recuerdo dependerá también en parte del éxito de la campaña de vacunación a nivel mundial, de la reducción de los contagios y de la aparición de nuevas variantes.

Fuente: Chicago Tribune. Disponible en https://cutt.ly/ybcbbTn

La Habana se alista para intervención poblacional con Soberana 02 y Abdala

23 abr. Un equipo de profesionales del MINSAP de conjunto con especialistas del Instituto Finlay de Vacunas (IFV) y el Centro de Ingeniería Genética y Biotecnología (CIGB) preparan al personal de salud y los sitios clínicos para comenzar, a inicios del mes de mayo, intervención poblacional con los candidatos vacunales Soberana 02 y Abdala.

A partir de este 24 de abril todos los sitios clínicos deben estar listos y, una vez autorizada, la intervención iniciará por los siete municipios que no participaron en el ensayo clínico Fase III de Soberana 02 y luego seguirá con el resto, hasta alcanzar alrededor de un millón 700 mil capitalinos.

Regla, Guanabacoa, La Habana del Este y San Miguel del Padrón recibirán Abdala, desarrollado por el CIGB, mientras que en Boyeros, Arroyo Naranjo y Cotorro se aplicará Soberana 02, fármaco del IFV, que continuará la inmunización en los municipios que con anterioridad intervinieron en la Fase III.

La intervención comprende toda la población mayor de 19 años, a partir de la organización por grupos de edades. En un primer momento recibirán el inmunógeno aquellas personas mayores de 60 años, por ser el estrato poblacional donde se registran los indicadores más desfavorables en cuanto a complicaciones y fallecimientos.

Luego continuará con el grupo comprendido entre 40 a 59 años y posteriormente se inmunizarán las

personas con edades entre 19 y 39 años, pues el proceso transcurrirá de forma escalonada para evitar aglomeraciones.

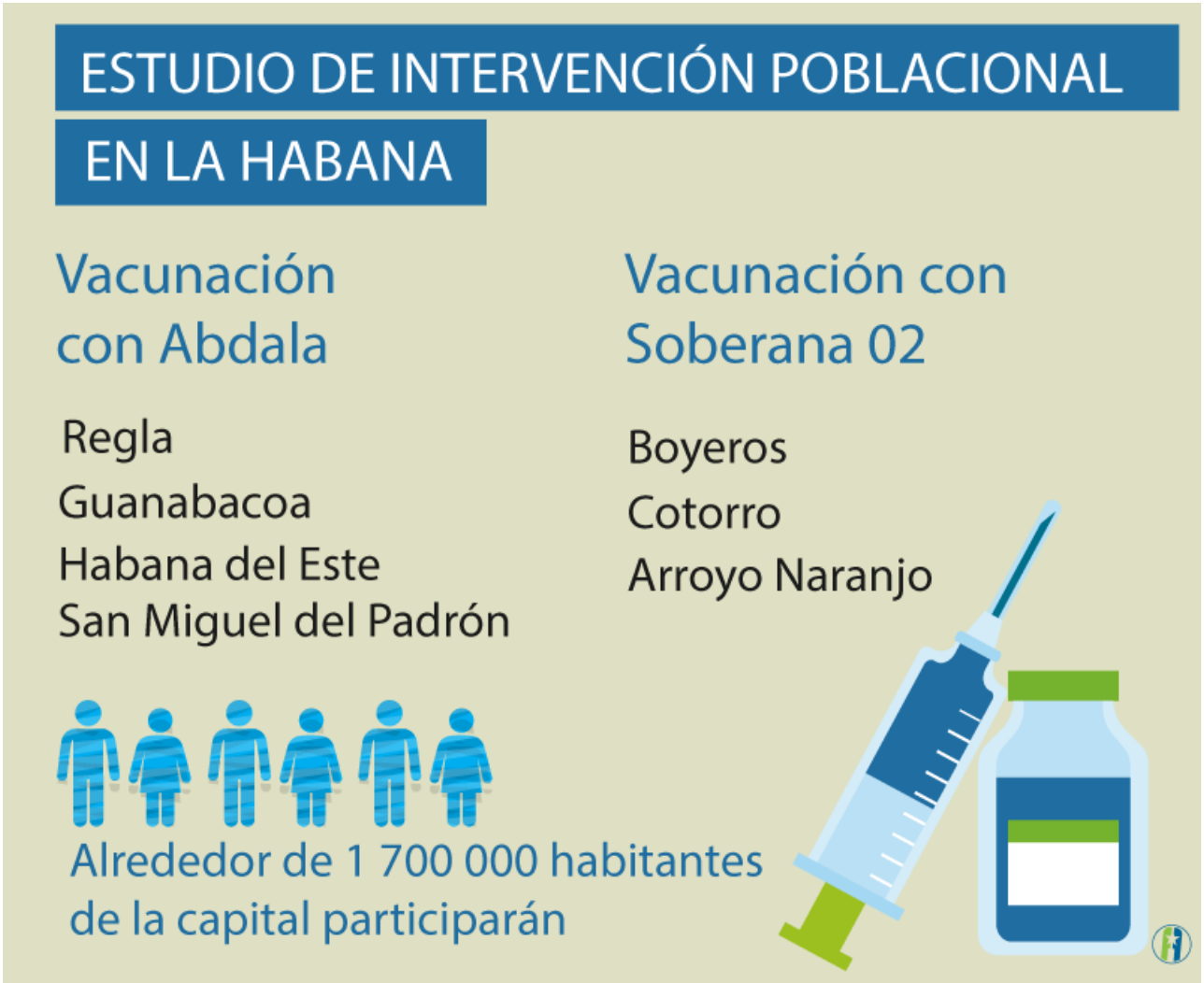
En la conformación de los listados, actualizados por los médicos y enfermeras de la familia a partir de las personas que residen en cada municipio, se excluyen embarazadas, puérperas, y durante la intervención no se vacunarán las personas con enfermedades crónicas descompensadas como hipertensión arterial, diabetes mellitus y cardiopatías, tampoco formarán parte quienes fueron positivos a la COVID-19.

La industria biofarmacéutica cubana diseñó lotes de inyectables sin Tiomersal y los alérgicos al compuesto también recibirán las dosis de los candidatos.

La doctora María Elena Soto Entenza, jefa del Departamento Nacional de Atención Primaria de Salud del MINSAP, señaló que dos meses atrás comenzó la preparación de los recursos humanos. Médicos, enfermeras de la familia y directivos de policlínicos, en los diferentes municipios, recibieron capacitación sobre las buenas prácticas clínicas y la organización.

Además, se establecieron equipos de investigadores para certificar los vacunatorios y los sitios aledaños concebidos para este propósito, así como los locales de vigilancia post-vacunación, donde los pacientes permanecerán una hora después de aplicado el candidato vacunal. Desde el punto de vista logístico, se organizan los suministros necesarios en cuanto a jeringuillas y cadena de frío.

En la intervención, los consultorios del médico y la enfermera de la familia tendrán el mayor protagonismo, pues en la mayoría de ellos se realizará la aplicación del producto, por lo que el momento constituye un acontecimiento importante dentro del programa, manifestó la especialista.



Fuente: Tomada de CubaAhora

Las autoridades de salud y los investigadores del IFV y el CIGB, para lograr la calidad del proceso cuentan con el apoyo del Consejo de Defensa Provincial, los consejos municipales, los estudiantes de Ciencias Médicas y las organizaciones de masas.

De forma paralela a la intervención en la capital continúa el ensayo clínico Fase III con Soberana 02 que incluye a 44 mil 010 voluntarios de ocho municipios, así como un estudio de intervención con 150 mil sujetos, entre los cuales más de 75 mil pertenecen al sector de la salud, biotecnológico y farmacéutico.

A ellos se suman, unos 48 mil voluntarios en la Fase III de Abdala en la región oriental y el estudio de intervención en personal de riesgo donde participan 124 mil en los territorios de Guantánamo, Granma y Santiago de Cuba.

Desde el 29 de abril comenzará en La Habana la segunda etapa de intervención con trabajadores de la salud, donde se incluirán los trabajadores y estudiantes de las Universidades de Ciencias Médicas.

Insistió Soto Entenza que las vacunas no son mágicas, requieren de un tiempo y hay que recibir todas las dosis para lograr la inmunización completa, de ahí la importancia de mantener las medidas higiénicas y sanitarias luego de vacunados.

Mientras Cuba avanza con su estrategia de vacunación a la par de los ensayos clínicos –como plantea la Organización Mundial de la Salud–, la Organización Panamericana de la Salud desarrollará, del 24 al 30 de abril de 2021, la 19 Semana de Vacunación en las Américas, con el lema “Las vacunas nos acercan”. La campaña contará historias de cómo las vacunas nos acercan a momentos, personas y objetivos que más nos importan.

Fuente: TRABAJADORES. Disponible en https://cutt.ly/HbcQQNy

PCV13 Vaccine Shows Protective Effects Against COVID-19

23 apr. Prior research has pointed to the protective effects of 13-valent pneumococcal conjugate vaccine (PCV13) in viral and bacterial respiratory diseases. In a retrospective study published in The Journal of Infectious Diseases, PCV13 also showed protective effects against SARS-CoV-2 infections.

The study authors measured associations between PCV13 and COVID-19 outcomes, with or without 23-valent pneumococcal polysaccharide vaccine (PPSV23), using information from electronic health records of adults aged 65 and older. Between March 1 and July 22, 2020, there were 3677 COVID-19 diagnoses among 531,033 adults in the study cohort, with 1075 hospitalizations and 334 fatalities. PCV13 was given to 451,068 participants aged 65 or older and had comorbidities associated with pneumonia and COVID-19. These participants also did not receive PCV13.

The estimated adjusted hazard ratios (aHRs) for PCV13 recipients with COVID-19 diagnosis, hospitalization, and mortality were 0.65 (95% CI, 0.59%-0.72%), 0.68 (95% CI, 0.57%-0.83%), and 0.68 (95% CI, 0.49%-0.95%), respectively. Prior PPSV23 was not associated with a significant protective effect against these 3 outcomes. The association between PCV13 and COVID-19 lessened temporarily within 90 days of receiving antibiotics for pneumococcal viruses. From 90 to 365 days after antibiotics exposure, the adjusted odds ratio (aOR) for COVID-19 diagnosis associated with PCV13 vaccination was 0.65 (95% CI, 0.50%-0.84%).

Citing earlier research that bacterial carriage may enhance viral replication and pathogenicity in respiratory diseases, and that PCV13 pneumococcal serotype carriage is lower in adults in settings with well-established vaccination programs, the study authors suggested that lower rates of pediatric PCV13 vaccination due to the COVID-19 pandemic could exacerbate the effect of PCV13 serotypes on respiratory viruses, such as SARS-CoV-2.

One limitation of the study was associating zoster vaccination with COVID-19 outcomes as an indicator of bias, since there is insufficient data on whether zoster has non-specific effects against COVID-19.
"Improved understanding of viral-bacterial interactions during SARS-CoV-2 infection remains necessary to validate the mechanistic basis for our findings," study authors noted. "However, our results are in agreement with other data suggesting the pathogenicity of respiratory viruses may be modified by bacterial carriage."
Disclosure: Several study authors declared affiliations with the pharmaceutical industry. Please see the original reference for a full list of authors' disclosures.

Reference

Lewnard JA, Bruxvoort KJ, Fischer H, et al. Prevention of COVID-19 among older adults receiving pneumococcal conjugate vaccine suggests interactions between Streptococcus pneumoniae and SARS-CoV-2 in the respiratory tract. J Infect Dis. Published online March 9, 2021. doi:10.1093/infdis/jiab128

Fuente: Infectious Disease Advisor. Disponible en https://cutt.ly/rbcWoVw

Comité asesor de los CDC recomienda reanudar uso de vacuna Johnson & Johnson

23 abr. Un grupo de expertos en salud de EE.UU. afirma que es hora de reanudar el uso de la vacuna COVID-19 de Johnson & Johnson, a pesar de que existe un riesgo muy poco frecuente de formación de coágulos.

De los casi 8 millones de personas vacunadas antes de que Estados Unidos suspendiera la vacuna de J&J, las autoridades sanitarias descubrieron 15 casos de un tipo de coágulo sanguíneo muy inusual, tres de ellos mortales.

Todos eran mujeres, la mayoría menores de 50 años.

Pero los asesores de los Centros para el Control y la Prevención de Enfermedades dijeron el viernes que los beneficios de la vacuna superan ese grave pero pequeño riesgo, especialmente contra un virus que sigue infectando a decenas de miles de personas cada día.

El gobierno sopesará rápidamente esa recomendación para decidir los próximos pasos.

Fuente: Spectrum Noticia NY1n. Disponible en https://cutt.ly/0bcFw44

Secuenciación del SARS-CoV-2, la clave para vigilar las variantes más agresivas frente a las vacunas

25 abr. Las nuevas variantes detectadas del SARS-CoV-2 plantean nuevos desafíos en la lucha contra la pandemia. La evidencia científica sobre las variantes procedentes de Reino Unido, Sudáfrica y Brasil ha confirmado su mayor capacidad de transmisibilidad traduciéndose en un rápido incremento de los nuevos contagios que acaban por incrementar la presión asistencial de unos sistemas sanitarios al borde del colapso en muchos países.

Ante este escenario la Organización Mundial de la Salud (OMS) ha solicitado en varias ocasiones a los países el incremento de sus

"La epidemiología molecular tiene importantes implicaciones que nos permiten no solo clasificar los agentes infecciosos sino, además, datar el origen de una epidemia, estudiar la dinámica de transmisión y otros aspectos críticos."

esfuerzos de secuenciación del virus. “Los países deben aumentar la secuenciación de los aislados virales y notificarlos”, recomendaba la OMS a mediados del pasado mes de febrero.

Partiendo de esta base ponemos el foco las declaraciones realizadas en el II Congreso Nacional Multidisciplinar COVID-19 de las Sociedades Científicas de España por el doctor Federico García, jefe del Servicio de Microbiología del Hospital Clínico Universitario San Cecilio de Granada. Dentro de este punto de encuentro el profesional argumentaba la importancia vital de incorporar la secuenciación del SARS-CoV-2 al Sistema Nacional de Salud, tal y como recogen en Medscape.

García señalaba directamente al campo de la epidemiología molecular y las técnicas de secuenciación como una de las mejoras más importantes en la actualidad frente a las limitaciones a las que tendríamos que habernos enfrentado trabajando únicamente con la perspectiva de la epidemiología clásica. La epidemiología molecular tiene importantes implicaciones que nos permiten no solo clasificar los agentes infecciosos sino, además, datar el origen de una epidemia, estudiar la dinámica de transmisión y otros aspectos críticos como los estudios de prevalencia o la incidencia.

Una labor fundamental que el doctor García ejemplificaba con la primera mutación del virus en España de la 614D a la 614G. Un hito científico que marcó el punto de inflexión en la investigación de la dinámica de transmisión del SARS-CoV-2. Otro de los puntos a favor demostrados por este campo de la ciencia en esta pandemia fue el estudio realizado en septiembre de 2020 que señalaba que nuestro país exportaba una variante sobre la que más tarde se demostró que era bidireccional. Unos hallazgos que en Europa modificaron la dinámica de las variantes del nuevo coronavirus.

"Todo se centra en el interés por detectar las nuevas variantes y por monitorizar la introducción de estas, principalmente de aquellas con alguna característica especial en cuanto a transmisibilidad, virulencia o escape vacunal, o cualquier otro cambio fenotípico que pueda afectar al control epidemiológico de la pandemia"

La secuenciación se erige como una herramienta fundamental para los sistemas de salud tras la identificación por parte de científicos de Reino Unido de una nueva variante (B.1.1.7). Un descubrimiento que hizo que el Ministerio de Sanidad de España iniciara la propuesta de una ponencia para integrar la

secuenciación genómica como uno de los puntos a vigilar del virus. Un documento que vio la luz en enero de 2021 y que se mantiene en una revisión constante en base a la nueva evidencia científica que continúa surgiendo.

"Todo se centra en el interés por detectar las nuevas variantes y por monitorizar la introducción de estas, principalmente de aquellas con alguna característica especial en cuanto a transmisibilidad, virulencia o escape vacunal, o cualquier otro cambio fenotípico que pueda afectar al control epidemiológico de la pandemia. Estos objetivos son los que responden a la pregunta de por qué debemos incorporar la secuenciación al Sistema Nacional de Salud", explica tal y como recogen en la citada cabecera.

"En este momento tenemos dos mutaciones de especial interés: la N501Y en la espícula asociada con alta transmisibilidad que caracteriza a la variante británica, y otra de la que estamos oyendo hablar y probablemente oiremos mucho en el futuro: la E484K, asociada con la resistencia y la inhibición de la capacidad neutralizante de los anticuerpos", declaraba el doctor García, añadiendo que “lo más importante es entender qué significan las mutaciones que contienen cada uno de estos linajes y cómo pueden afectar a la pandemia y a la monitorización de la infección".

"Tenemos datos muy preocupantes de que hay variantes que portan la mutación E484K, como la B.1.351, que comparada con la británica tiene capacidad de neutralización por anticuerpos naturales de pacientes que han pasado la infección bastante menor, según apuntan algunos trabajos. Lo mismo se ha observado frente a los anticuerpos que se producen después de la vacunación con las de ARN mensajero, con mayor resistencia a ser neutralizada por estos anticuerpos", añadía.

CONFIRMACIÓN DE LOS CASOS DE REINFECCIÓN

En la presentación realizada por el doctor García las técnicas más óptimas para la confirmación de posibles casos de reinfección por SARS-CoV-2 fueron uno de los puntos de debate. "Lo ideal es tener las dos muestras de los dos episodios y ver que son filogenéticamente diferentes, pero esto es muy difícil. En ausencia de esto, una estrategia no validada es demostrar que la nueva infección es una variante que no existía durante el primer episodio infectivo", comentaba en este sentido.

"La secuenciación genómica ha venido a los laboratorios para quedarse y no solo para la Covid-19, la debemos utilizar en el futuro porque nos va ayudar muchísimo. En el caso concreto del SARS-CoV-2, está claro que sirve para evaluar y vigilar la aparición de nuevas variantes relacionadas con mayor transmisibilidad, mayor escape a las vacunas, mayor severidad/mortalidad y con la capacidad de reinfectar a los pacientes que ya han sufrido una infección"

Si atendemos a los datos ofrecidos por el referido documento del Ministerio de Sanidad, a fecha de 5 de abril de 2021, la variante B.1.1.7 ya ha reemplazado de forma clara a las cepas originales del virus en nuestro país. Se indica que existen algunas diferencias entre las distintas comunidades autónomas en términos de expansión.

"La secuenciación genómica ha venido a los laboratorios para quedarse y no solo para la Covid-19, la debemos utilizar en el futuro porque nos va ayudar muchísimo. En el caso concreto del SARS-CoV-2, está claro que sirve para evaluar y vigilar la aparición de nuevas variantes relacionadas con mayor transmisibilidad, mayor escape a las vacunas, mayor severidad/mortalidad y con la capacidad de reinfectar a los pacientes que ya han sufrido una infección", concluía el doctor García.

ASINTOMÁTICOS Y SUPERCONTAGIADORES

Dentro del Congreso se ha analizado además el papel que juegan en la transmisión los asintomáticos y presintomáticos. En función de las circunstancias y atendiendo a diversas fuentes, entre el 30-70% de estos casos son transmisores del virus. Un dato que ha marcado las estrategias de detección de casos.

Con el objetivo de determinar cuál es la mejor estrategia ante este desafío el doctor Jesús Rodríguez Baño, jefe de la Unidad de Enfermedades Infecciosas del Hospital Universitario Virgen Macarena de Sevilla, indicaba: "La información que tenemos es de modelos matemáticos, y es sorprendente que no haya estudios poblacionales aleatorizados; creo que ha sido uno de los déficits de esta pandemia, a pesar de las oportunidades que ha habido no se han realizado (…) Los modelos a veces nos informan cómo son de aplicables en distintos ámbitos, pero siempre con las dudas que generan, ya que depende mucho de los recursos disponibles, de la incidencia de la infección en cada momento y del cumplimiento de las medidas en la comunidad, entre otros factores".

"Un cribado universal es impensable: en Reino Unido se secuencia 10% de las infecciones que se diagnostican y se considera un éxito que podría ser más que suficiente. Particularmente, soy un convencido de los métodos de detección por reacción en cadena de la polimerasa en tiempo real, pruebas de reacción en cadena de la polimerasa alelo específicas que nos permitan detectar determinadas mutaciones de variantes más prevalentes o más importantes, lo que daría mucha más capacidad de resolución para saber qué está pasando y, tal vez, en un futuro no muy lejano estaremos hablando de esta estrategia", argumentaba el doctor García.

Fuente: ConSalud.es. Disponible en https://cutt.ly/obcJE7v

COVID-19 vaccines may protect many, but not all, people with suppressed immune systems

27 abr. For Eva Schrezenmeier, a nephrologist at Charité University Hospital in Berlin, the news was sobering: Among 40 patients with transplanted kidneys at her hospital who'd been vaccinated against COVID -19, only one was churning out the antibodies that would likely protect him from the disease. Because transplant patients take powerful drugs to suppress the immune system so it doesn't attack a donated organ, her team expected diminished responses to a vaccine. But Schrezenmeier, who posted a preprint describing her study last week, hadn't anticipated just how badly the vaccine might falter in her patients.

Her finding is at the grim extreme of research on how well COVID-19 vaccines work in the many millions of people whose immune systems are suppressed by drugs or disease. In many, the vaccines do seem to maintain their potency. But in others—particularly organ transplant recipients and those taking certain immune-dampening medications—effectiveness is less assured or even absent. To learn more, researchers are launching larger studies, seeking more clarity and ways to help patients whose weakened immune systems make protection against COVID-19 all the more urgent. "There is a lot of

confusion and fear among patients," says Alfred Kim, a rheumatologist at Washington University in St. Louis who cares for people with the autoimmune disease lupus and strongly urges vaccination for them.

One source of complexity: The dozens of different medications taken by people with cancer, autoimmune or other immunologic disease, or an organ transplant. Each can gum up different gears in the immune system's intricate machinery. The ailment makes a difference, too. Solid tumors such as colon cancer don't usually interfere with the immune system (although chemotherapy does). But autoimmune diseases or blood cancers such as leukemia and lymphoma can themselves deplete or disrupt certain types of immune cells.

Past research already suggested vaccines can falter in some immune-suppressed patients. Kim says flu and pneumococcal vaccines don't always work as well in people on some common immune suppressants, like methotrexate, which treats cancer and autoimmune diseases. And a 2012 study found that just 44% of cancer patients in treatment produced antibodies to influenza after one dose of flu vaccine; most were first vaccinated 1 week after chemotherapy. The researchers recommended two doses after finding that a second dose boosted the number to 73%.

When they started to parse blood samples after COVID-19 vaccination, scientists were unsure how people with immune suppression would respond to the vaccines. Gauging protection is also a challenge: The vaccines are designed to propel production of antibodies, but scientists don't know what levels are needed to guard against COVID-19. Antibodies are easier to measure than T cell responses, but those, too, play an important role in protection from disease.

Still, in a research setting, the hunt for antibodies can yield important clues. In December 2020, transplant surgeons Dorry Segev and Jacqueline Garonzik Wang at Johns Hopkins University put out a call on social media for organ recipients willing to participate in a COVID-19 vaccine study. "We had 1000 enrolled in the first week," Segev says. In March, the research team published details in JAMA of participants' immune responses to the first dose of the Pfizer-BioNTech and Moderna vaccines. The results foreshadowed Schrezenmeier's: Among 436 people who'd had liver, heart, kidney, and other organ transplants, just 17% had detectable antibodies.

Outcomes varied based on which medications the volunteers were taking, however. Only 9% of those on a class of drugs that includes the immunosuppressant mycophenolate had some antibodies, compared with about 40% in those not taking drugs in that category. Mycophenolate inhibits production of both B cells, which generate antibodies, and T cells, which help marshal B cells to do their job.

Segev says he and his colleagues are close to sharing results from his cohort's second vaccine dose, which show some improvement. Still, he's surprised that these organ transplant patients seem to respond even less well to COVID-19 vaccines than to flu vaccines. To learn more, he is studying their T cell, B cell, and other immune responses. "We're starting to try to say, 'What is going on here? Why is it so bad?'"

Although Segev worries about the roughly 500,000 transplant patients in the United States, he suspects the picture is much brighter for the 11 million people with autoimmune diseases, who tend to take different combinations of immune treatments or get by on lower doses. Last week, a paper in Gastroenterology reported that 48 people with either Crohn disease or ulcerative colitis, nearly all on immune-targeting medication, responded well to vaccination. Of the 26 whom the researchers followed through both vaccine doses, all produced antibodies, 22 at high levels.

But another study, of 133 people with various autoimmune diseases, suggested two types of medication can act as a sledgehammer against vaccine response. The work, posted as a preprint this month by Kim, rheumatologist Mary Nakamura at the University of California, San Francisco, and their colleagues, showed that on average, subjects churned out roughly one-third as many antibodies as healthy vaccinated people—a difference that doesn't strongly concern Kim. But people on therapies that destroy B cells, like rituximab, and the powerful steroid prednisone had far lower levels. Bigger studies of these patients are getting underway, including one announced last week by the National Institute of Allergy and Infectious Diseases.

In cancer patients, vaccine response likely depends at least partly on timing, because cycles of chemotherapy alternately squash immune cells and allow them to rebound, says Giuseppe Curigliano, an oncologist at the European Institute of Oncology in Milan. He reported last year that cancer patients on chemotherapy produced abundant antibodies after a bout of COVID-19, leaving him optimistic that vaccines will work well for them. His center waits a couple of weeks after a chemotherapy cycle to offer a COVID-19 shot. Similarly, a U.K. study published today in The Lancet Oncology showed that although many patients in treatment for solid tumors had a paltry response to the first vaccine dose compared with healthy volunteers, they appeared well-protected after the second. The researchers write that the results highlight risks of delaying vaccine doses in cancer patients, contrary to the country's practice across its population.

There's nagging concern, though, when it comes to people with blood cancers. Ghady Haidar, a transplant infectious disease specialist at the University of Pittsburgh Medical Center, has preliminary results from patients with leukemia, lymphoma, and multiple myeloma suggesting a sizable fraction aren't producing antibodies after vaccination, particularly those with a form of chronic leukemia. Perhaps, he says, this occurs because patients "have defects in circulating white blood cells."

Physicians like Haidar say patients often ask whether to stop taking immune-suppressing medications before getting vaccinated, prompting tough choices. "No one should be stealth discontinuing meds so that they can respond to vaccines," he says. For some patients, skipping treatment can be dangerous, but doctors can sometimes delay an infusion of a therapy known to make a vaccine's job tougher.

For patients who don't appear protected by standard vaccinations, extra doses may help. Some organ recipients already get extra doses of hepatitis B vaccine, and this month, France recommended that they receive a third dose of the Pfizer-BioNTech COVID-19 vaccine. Christophe Legendre, a nephrologist at Necker Hospital in Paris, is planning antibody tests to see how well the approach works in transplant patients. Other researchers say labmade monoclonal antibodies might bolster protection for patients who still don't respond. (Although clinical trials have shown the monoclonal antibodies can prevent infection, so far they are only authorized for treating early-stage COVID-19.)

In Berlin, Schrezenmeier is planning to offer the AstraZeneca or Johnson & Johnson vaccines to some patients already vaccinated with another COVID-19 vaccine. Will mixing vaccines enhance their effectiveness? "I don't know," she admits. But she imagines that giving the immune system two different jolts might sometimes make a difference. The lone kidney transplant volunteer in her study who produced antibodies after vaccination had already survived COVID-19—which may have helped kick-start an immune response against it.

Fuente: Science. Disponible en https://cutt.ly/kbcZ7Np

Pfizer/BioNTech confirma que se necesitará una tercera dosis de la vacuna contra el coronavirus: ¿por qué es necesaria?

28 abr. Especialistas aseguran que la dosis de refuerzo probablemente no sea la única, y se necesitarán vacunaciones anuales o cada 18 meses, debido a la disminución en la protección y la circulación de nuevas variantes del virus. Desde el inicio de la campaña de vacunación en todo el mundo, diversos estudios han intentado determinar cada cuánto tiempo es necesaria una "tercera dosis", o bien si la vacuna será anual, considerando la proliferación de las más de 4 mil variantes del coronavirus que circulan por el mundo, y la capacidad de mutación del patógeno.

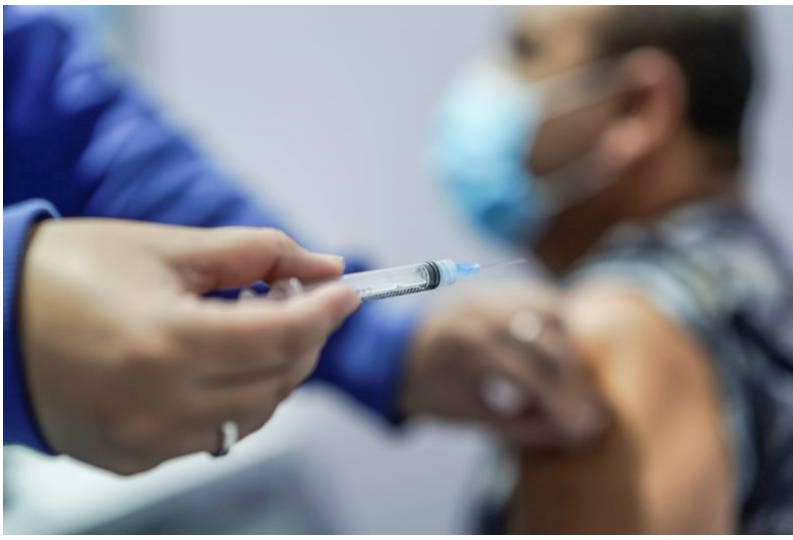
Ante ello, algunos expertos ya habían manifestado la necesidad de estas dosis "de refuerzo", teniendo en cuenta el tipo de vacuna, el tipo de inmunidad que genera y la circulación del virus o bacteria contra la que protege.

Pero una tercera dosis no es algo nuevo en estas circunstancias. En el caso de la vacuna que protege a los niños contra la difteria, el tétanos y la tos ferina, Chile tiene un esquema primario de 3 dosis de vacuna hexavalente (en la que se incluyen estas tres vacunas) a los dos, a los cuatro y a los seis meses y luego se agregan dos dosis de refuerzo en primero y octavo básico. Lo mismo ocurre con el virus de la hepatitis B y la del neumococo, sin olvidar la vacuna contra la influenza, en respuesta a las nuevas cepas de virus que circulan.

"La idea de la aplicación de una tercera dosis para las vacuna contra COVID-19 ha sido planteada ya desde hace algún tiempo por algunos investigadores como una manera de, primero, promover respuestas inmunes más robustas en individuos que responden débilmente a la vacunación; segundo, prolongar la inmunidad contra este virus en el tiempo, incrementando la intensidad de la respuesta inmune generada contra SARS-CoV-2 luego de la vacunación con dos dosis; y en tercer lugar, complementar o intensificar la protección conferida por las dosis anteriores para neutralizar posibles nuevas variantes del virus que están circulando mundialmente (lo que podría implicar actualizaciones en la formulación de las vacunas en consideración de las variantes existentes)", indicó a Qué Pasa hace dos semanas Alexis Kalergis, académico de la Universidad Católica, director del Instituto Milenio en Inmunología e Inmunoterapia, y director del ensayo clínico con la vacuna de Sinovac realizada en Chile.

Lo mismo ya había dejado entrever el CEO del gigante farmacéutico estadounidense Pfizer a mediados de abril, señalando que personas que han recibido nuestra vacuna "probablemente" necesitarán una tercera dosis en un plazo de seis meses a un año, y luego probablemente una inyección cada año: "Una hipótesis probable es que se necesite una tercera dosis, entre los seis y los 12 meses, y a partir de ahí habrá que volver a vacunar cada año, pero todo eso tiene que confirmarse", dijo Albert Bourla, agregando que a propósito de ello se iniciaron algunas investigaciones en EE.UU.

Por ello no llama la atención lo mencionado por su socio, Ugur Sahin, cofundador de la empresa farmacéutica alemana BioNTech, quien confirmó a medios alemanes que la protección de la vacuna se va haciendo menor con el tiempo, pasando del 95 al 91% de eficacia a los seis meses, por lo que se necesitará una dosis de refuerzo, entre los nueve meses y un año de ser inoculada para volver a alcanzar cifras cercanas al 100 por ciento de protección.



Además, el médico alemán, agregó que después, "probablemente cada año o quizá cada 18 meses" hará falta un nuevo pinchazo, como con la gripe estacional.

Flavio Salazar, vicerrector de Investigación Universidad de Chile y director alterno del Instituto Milenio de Inmunología e Inmunoterapia (IMII), señala que este anuncio es necesario analizarlo en contexto. "Se trata de un anuncio del laboratorio que hace la vacuna y la vende. No se trata de una decisión consensuada, no lo dice la Organización Mundial de la Salud (OMS) o la FDA (Administración de Alimentos y Medicamentos de EE.UU.) La empresa se está adelantando y advierte que en un futuro, se podría necesitar una tercera dosis".

A su juicio, todo depende de cómo se comporte la pandemia. Si no baja la circulación del virus, es probable que se requiera una mayor protección, pero si los contagios disminuyen y hay menos virus circulando, la situación cambia. "Si en un momento determinado se genera una disminución importante de la protección que otorgan las dos dosis, quizás sea necesario vacunar a ciertos grupos de la población. No implica que todos necesitemos una tercera dosis", insiste Salazar.

En ningún caso, este anunció "se puede interpretar como que hoy con dos dosis estamos desprotegidos". No se debe olvidar que aún estamos en medio de una pandemia y que ni siquiera se ha vacunado a toda la población, continúa el vicerrector de Investigación de la U. de Chile.

La posibilidad de una tercera vacuna, puede ocurrir con cualquier vacuna, pero depende de muchos factores. "Las vacunas son un equilibrio entre la amenaza y la protección. Si la protección aumenta y la amenaza se mantiene es probable que si la primera disminuye, se necesita aumentar con otra dosis. Pero si la amenaza del virus baja, no es necesario el mismo nivel de protección", indica Salazar.

Contra la variante india

Por otro lado, Sahin, declaró que "confía" en la eficacia de su vacuna, desarrollada junto al laboratorio estadounidense Pfizer, frente a la variante india del virus.

Aunque las "pruebas" todavía continúan, "la variante india presenta mutaciones que ya hemos estudiado y contra las cuales nuestra vacuna actúa, lo que nos hace confiar", dijo.

La variante B.1.617, conocida como variante india por haber sido detectada por primera vez en aquel país, ya ha sido identificada en "al menos 17", entre ellos Reino Unido, Estados Unidos, Bélgica, Suiza o Italia, según la OMS.

"El bastión" que representa la vacunación frente a la COVID-19 "va a resistir, estoy convencido de ello", señaló Sahin.

BioNTech ya ha probado su vacuna en más de 30 variantes y en cada ocasión obtuvo, al menos, una "respuesta inmunitaria suficiente", explicó.

Fuente: LT LA TERCERA. Disponible en https://cutt.ly/UbcBUeG

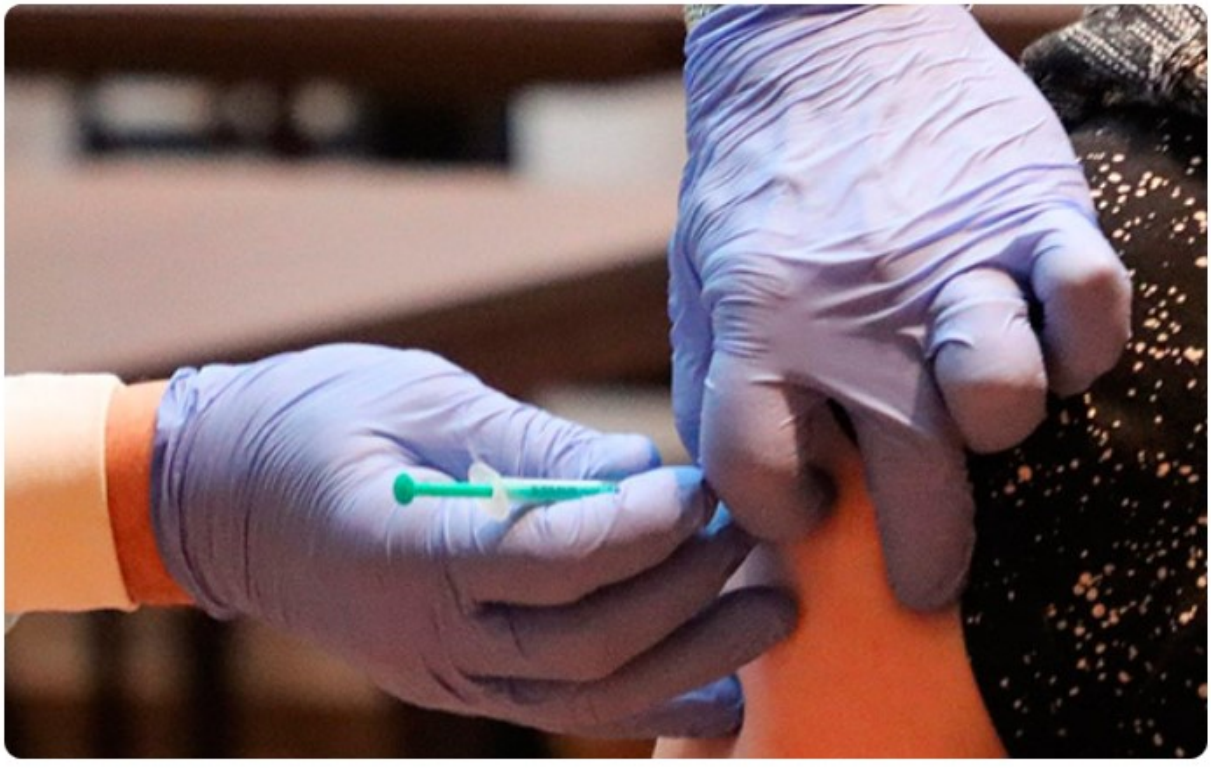
El balance riesgo-beneficio es claramente favorable en la vacunación frente al SARs-CoV-2

29 abr. El balance riesgo-beneficio es claramente favorable en la vacunación frente al SARs-CoV-2, e incomparablemente mayor que sus raros efectos adversos potenciales, tal y como se expuso en una segunda edición del Congreso Nacional Multidisciplinar de las Sociedades Científicas de España en torno a la Covid-19, en el que la Sociedad Española de Farmacología Clínica (SEFC) tuvo una destacada participación.

Con el objetivo compartido de intercambiar experiencias en la lucha contra la pandemia, profesionales sanitarios de todas las especialidades se reunieron en este foro, donde la seguridad de las vacunas para la prevención de Covid-19 fue uno de los temas clave. En concreto, la mesa de seguridad de las vacunas frente a SARs-CoV-2, con participación de la SEFC, analizó cómo los sistemas de farmacovigilancia nacionales y europeos suponen una garantía para los ciudadanos.

En este sentido, la Dra. Mar García Sáiz, especialista en Farmacología Clínica del Hospital Universitario Marqués de Valdecilla, señalo que “el funcionamiento del Sistema de Farmacovigilancia a nivel nacional y europeo permite generar lo que se conoce como ‘señales de farmacovigilancia’, que es necesario analizar y estudiar para valorar adecuadamente la relación beneficio-riesgo del medicamento”.

En relación con las paralizaciones temporales de la vacunación, la Dra. García Sáiz indicó que esta forma de proceder es la oportuna para que se pueda retomar posteriormente la vacunación en mejores condiciones y en la población que más se pueda beneficiar de la inmunización, como ha sucedido en España y en Europa en general, donde se ha decidido restringir algunas vacunas a determinados grupos de edad.



Los expertos señalan que las suspensiones temporales en los procesos de vacunación son una garantía para que se pueda retomar posteriormente la vacunación en mejores condiciones

"No debemos olvidar que una reacción adversa no es otra cosa que una enfermedad cuya causa es un medicamento, y, por tanto, se precisa de un diagnóstico certero", recalcó por su parte la Dra. Gloria Cereza, coordinadora del programa de Farmacovigilancia de Cataluña. Esta especialista detalló los pasos de este proceso de farmacovigilancia que permite lograr este diagnóstico en relación a los efectos adversos. "En primer lugar, se requiere que los profesionales sanitarios y la población notifique las sospechas de reacciones adversas que se detectan. Si se observa que los casos detectados de un evento adverso son superiores a los casos esperados, se identifica una 'señal' que hay que seguir investigando. Se recopila toda la información de otros países y se solicita el asesoramiento de especialistas para un correcto diagnóstico. Para las vacunas de la Covid-19 la evaluación se realiza a nivel europeo en el Pharmacovigilance Risk Assessment Committee (PRAC)", detalló.

"El resultado puede ser que el PRAC proponga una advertencia o un cambio en las condiciones de su autorización, con una modificación de la ficha técnica y el prospecto. Si el balance beneficio/riesgo no se mantiene, el PRAC podría proponer la suspensión de su comercialización, situación que no ha ocurrido hasta el momento con las vacunas", informó la coordinadora del programa de Farmacovigilancia de Cataluña.

La seguridad de las vacunas debe ser evaluada con mirada crítica

El Dr. Juan Rodríguez, especialista en Medicina Preventiva y Salud Pública, explicó cómo la seguridad de las vacunas debe ser evaluada con mirada crítica en el marco de la mejor evidencia científica. En su ponencia ha habló de la experiencia con otras vacunas y como se logró, a través de los estudios adecuados, descartar la supuesta relación de las mismas con el posterior desarrollo de algunas enfermedades.

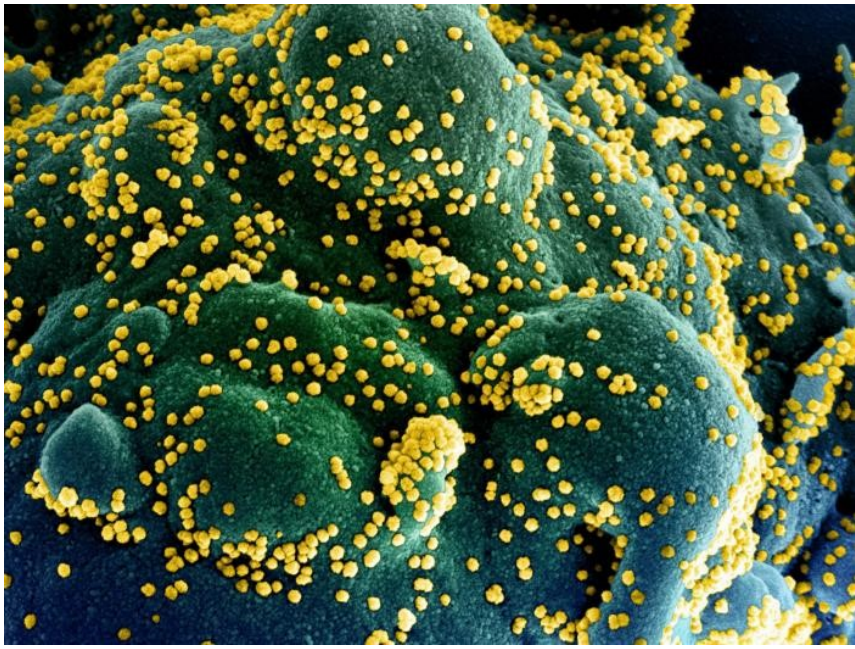
Por su parte, la Dra. Dolores Montero, jefa de la División de Farmacoepidemiología y Farmacovigilancia de la Agencia Española de Medicamentos y Productos Sanitarios (AEMPS) incidió los pilares que conforman el plan de vigilancia de la seguridad de las vacunas frente a la Covid-19. Estos incluyen la identificación de potenciales nuevas reacciones adversas, el mecanismo de validación y evaluación, la integración de los datos procedentes de los laboratorios que comercializan las vacunas, la aportación de los estudios observacionales y las actividades de información y comunicación en forma de informes periódicos y notas específicas.

El Dr. Mario González Ruiz, farmacólogo clínico y técnico del Centro de Farmacovigilancia de Cantabria, destacó en su intervención el esfuerzo realizado por los técnicos del Sistema Español de Farmacovigilancia, constituido por el Centro coordinador y los 17 centros Autonómicos, afirmando que "el Sistema ha vigilado aquellos acontecimientos de especial interés (AESI) en línea con otros países europeos, pero también se ha focalizado en la búsqueda de otros acontecimientos graves y desconocidos. Se han desarrollado e implantado en tiempo record herramientas, procedimientos y estándares de calidad para la gestión de un gran número de notificaciones".

Finalmente, la Dra. Nancy Ortega, especialista en Alergología, aportó su visión sobre el riesgo de reacciones alérgicas, tanto de tipo anafiláctico como otras más leves, en relación con las vacunas frente al SARS-Cov-2. En su ponencia proporcionó datos sobre los casos de anafilaxia detectados con las vacunas de ARN mensajero, que oscilan entre los 2,4 y los 4,7 casos por millón de dosis en función de la vacuna analizada. En cualquier caso, unas cifras muy bajas.

Fuente: ***geriatric****area*. Disponible en https://cutt.ly/3bcNGQC

Antioxidantes muestran eficacia en ayuda a prevención de la COVID-19



30 abr. En la comunidad médica y científica insisten en el uso de antioxidantes en el manejo preventivo de las infecciones virales, incluyendo la COVID-19. La ingesta constante de estas sustancias incide directamente en el desarrollo de enfermedades de este tipo, ya que impiden la replicación del virus dentro del organismo.

En medio de la pandemia, lo que si advierten es que cuidados como el tapabocas, lavado de manos y el distanciamiento social son la primera línea de cuidado.

En ese contexto, estudios realizados por Carlos Guerrero, médico cirujano, magister en farmacología y en genética, PhD en bioquímica y profesor de la Universidad Nacional de Colombia, confirman esta premisa. A partir de sus hallazgos, destaca la efectividad de la N-acetilcisteína frente a otros antioxidantes de uso cotidiano como el jengibre, la cúrcuma, la vitamina C y el Omega 3.

La molécula N-Acetilcisteína es eficaz para ayudar a generar inmunidad en el cuerpo dadas su acción mucolítica, antioxidante, antiinflamatoria y antitrombótica, por lo cual puede ser usada como parte de un proceso de fortalecimiento del sistema inmune en momentos de pandemia.

“La mayoría de los virus de RNA (por ejemplo, los que producen las enfermedades del zika, dengue, fiebre amarilla, chikungunya, la COVID-19 y los coronavirus en general, y los virus que producen infecciones respiratorias), al ingresar a la célula la inducen a producir sustancias oxidativas que resultan beneficiosas para ellos”, explica el virólogo, señalando además que posteriormente se produce una reacción que intenta compensar la oxidación mediante la producción de proteínas (citoquinas). Los virus impiden esa generación de proteínas y es cuando la célula entra en un estado conocido como estrés oxidativo.

“Generalmente se recomienda ingerir un sobre de N-Acetilcistenia al día, un licuado de jengibre y cúrcuma, alimentarse balanceadamente, consumir verduras y frutas de todos los colores, vitaminas A, E, D y C. No fumar, ni ingerir alcohol, no abusar de los medicamentos especialmente de los antibióticos, evitar el estrés y hacer ejercicios, son acciones antioxidantes muy beneficiosas. Seguir estas recomendaciones no impide que uno se infecte con Sars-CoV-2 (el virus que produce el covid-19), pero si ello ocurre entonces la sintomatología será menos severa”, anotó el experto.

Fuente: Portafolio. Disponible en https://cutt.ly/Mbc1cAD

Pfizer-BioNTech piden autorización de vacuna para niños

30 abr. Pfizer y BioNTech solicitaron a la autoridad reguladora de la Unión Europea que extienda la aprobación de su vacuna contra el coronavirus a niños de 12 a 15 años, con lo cual las poblaciones europeas más jóvenes y de menor riesgo accederían por primera vez a las inyecciones.

En un comunicado emitido el viernes, las dos firmas dijeron que su presentación a la Agencia Europea de Medicamentos (EMA, por sus siglas en inglés) se basaba en un estudio avanzado con más de 2.000 adolescentes que demostraba la seguridad y eficacia de la vacuna. Los niños serán monitoreados durante dos años para su protección y seguridad a largo plazo.

BioNTech y Pfizer también habían solicitado a la Administración de Alimentos y Medicamentos de Estados Unidos que la autorización para la aplicación de emergencia se extendiera a los niños de 12 a 15 años.

La vacuna de Pfizer y BioNTech contra el COVID-19 fue la primera aprobada por la EMA en diciembre para su aplicación a mayores de 16 años en las 27 naciones de la UE.

Fuente: Associated Press Spanish. Disponible en https://cutt.ly/0bc10Tz

VACCI MONITOR

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20210421:20210430 as the publication date 61 records.*

1.WO/2021/073660LYOPHILIZED PREPARATION OF VACCINE CONTAINING ALUMINUM ADJUVANT AND PREPARATION METHOD AND USE THEREFOR
WO - 22.04.2021
Clasificación Internacional A61K 9/19 Nº de solicitud PCT/CN2020/136152 Solicitante SICHUAN UNIVERSITY Inventor/a SUN, Xun
A lyophilized preparation of a vaccine containing an aluminum adjuvant, and a preparation method and a use therefor. The aluminum salt vaccine lyophilized preparation contains: a vaccine antigen, an adjuvant, a lyoprotectant, and a nanoparticle or a microparticle formed from compounding of an anionic polymer or a derivative thereof with an aluminum salt. The lyophilization method avoids large amounts of aggregation of aluminum hydroxide in the vaccine, and reduces reduction to antigen activity. The present invention is able to improve the stability of a vaccine in a lyophilization process and a storage process, and can cause the vaccine to not require cold-chain transportation. The invention is low cost, saves energy, and particularly solves the technical problem of difficulty in guaranteeing cold-chain delivery in remote areas.

2.3806897ZUSAMMENSETZUNG UND VERFAHREN ZUR STABILISIERUNG VON IMPFSTOFFEN IN FESTEM DOSIERUNGSFORMAT
EP - 21.04.2021
Clasificación Internacional A61K 39/12 Nº de solicitud 19731219 Solicitante UNIV COLLEGE CORK NATIONAL UNIV OF IRELAND CORK Inventor/a DONADEI AGNESE

A composition for stabilising a vaccine in a solid dosage format is provided wherein the composition comprises an antioxidant, such as glutathione, a monosaccharide or disaccharide sugar, such as trehalose, a polyol sugar, such as sorbitol, one or more salts, such as magnesium chloride and sodium glutamate, and a vaccine. The composition may also comprise an aqueous soluble polymer, such as polyvinyl alcohol (PVA). A preferred composition comprises 40 mM glutathione,20% w/v trehalose,3% w/v sorbitol, 1.5% w/v PVA,3% w/v magnesium chloride and 3% w/v sodium glutamate. Also provided is a method of stabilising a vaccine in a solid dosage format, the method comprising drying the stabilising composition to provide the vaccine in the solid dosage format. The composition and method may be used to stabilise any suitable vaccine, such as poliovirusor adenovirus, in a solid dosage format, such as microneedle patches or wafers.

3.WO/2021/074423VACCINE PRODUCT
WO - 22.04.2021
Clasificación Internacional A61K 9/00 Nº de solicitud PCT/EP2020/079274 Solicitante JANSSEN VACCINES & PREVENTION B.V. Inventor/a LABOVITIADI, Olga
The present invention provides a vaccine product comprising a container, wherein the container comprises an internal surface, the internal surface comprising either (i) silicon dioxide, (ii) a polymeric material, or (iii) a surface treated with ethylene oxide; and a vaccine composition within the container in contact with the internal surface, wherein the vaccine composition comprises virus particles.

4.20210121674JAPANESE ENCEPHALITIS VACCINE-CONTAINING MICRONEEDLE ARRAY
US - 29.04.2021
Clasificación Internacional A61M 37/00 Nº de solicitud 17100495 Solicitante FUJIFILM Corporation Inventor/a Toshio SHIMADA

It is an object of the present invention to provide a Japanese encephalitis vaccine-containing microneedle array capable of suppressing a reduction in the activity of the Japanese encephalitis vaccine upon the production of the microneedle array. According to the present invention, provided is a microneedle array having a sheet portion and a plurality of needle portions present on the upper surface of the sheet portion, wherein the needle portion comprises at least one of an electrically neutral water-soluble polymer and a disaccharide, a Japanese encephalitis vaccine, and an electrically neutral surfactant, and the sheet portion comprises at least one of an electrically neutral water-soluble polymer and a disaccharide.

5.3810175KREBSSPEZIFISCHE T-ZELL-REZEPTOREN
EP - 28.04.2021
Clasificación Internacional A61K 38/08 Nº de solicitud 19736435 Solicitante UNIV COLLEGE CARDIFF CONSULTANTS LTD Inventor/a SEWELL ANDREW
The present disclosure relates to a new anti-cancer peptide; a vector encoding same; a pharmaceutical composition or immunogenic agent or bispecific or vaccine comprising said anti-cancer peptide; use of said anti-cancer peptide, vector, pharmaceutical composition, immunogenic agent, bispecific or vaccine to treat cancer; a method of treating cancer using said anti-cancer peptide, vector, pharmaceutical composition, immunogenic agent, bispecific or vaccine; and a combination therapeutic for the treatment of cancer comprising said anti-cancer peptide, vector, pharmaceutical composition, immunogenic agent, bispecific or vaccine.

6.3812394ANTIGENVARIANTE VON VARICELLA-ZOSTER-VIRUS UND VERWENDUNG DAVON
EP - 28.04.2021
Clasificación Internacional C07K 14/005 Nº de solicitud 19807902 Solicitante MOGAM INST BIOMEDICAL RES Inventor/a NAM HYO JUNG

The present invention relates to an antigen variant and a use thereof, the antigen variant being a protein, among surface proteins (gE) of the varicella zoster virus, exhibiting a high expression level and high immunogenicity, and thus, when the antigen variant is used as a vaccine composition, the vaccine composition has more excellent safety compared to a live virus vaccine, and the antigen variant exhibits a higher expression level in a host cell compared to other antigens, and thus is useful as a vaccine for preventing or treating chicken pox or herpes zoster caused by the varicella zoster virus.

7.WO/2021/076664SYSTEMS AND METHODS FOR DIGITAL VACCINE
WO - 22.04.2021
Clasificación Internacional G16H 50/20 Nº de solicitud PCT/US2020/055630 Solicitante SRI PRAKASH, Bhargav Inventor/a SRI PRAKASH, Bhargav
We disclose a digital vaccine system which presents a user-driven avatar with tasks that test the avatar's physical fitness and food offerings at various stages. The avatar's appearance is responsive to the avatar's performance on the tasks and selection of the food offerings. The digital vaccine system uses deep learning systems to configure and update its parameters.

8.WO/2021/073178AVIAN EGG DROP SYNDROME VIRUS TFIBER PROTEIN FRAGMENT, VACCINE COMPOSITION PREPARED THEREFROM, PREPARATION METHOD, AND APPLICATION
WO - 22.04.2021
Clasificación Internacional A61K 39/235 Nº de solicitud PCT/CN2020/101961 Solicitante PULIKE BIOLOGICAL ENGINEERING, INC. Inventor/a TIAN, Kegong
Provided are an avian egg drop syndrome virus tFiber protein fragment encoded by a nucleotide sequence represented by SEQ ID NO. 2 or a degenerate sequence thereof, and a vaccine composition prepared from the protein fragment. The fragment has good immunogenicity and can be used with a variety of antigens to prepare a combined vaccine, and complete protection can be achieved for chickens and ducks.

9.3812463NICHT-INTEGRIERTER IMPFSTOFF AUF DER BASIS VON LISTERIA MONOCYTOGENES UND VERFAHREN FÜR ANTITUMORIMMUNREAKTION
EP - 28.04.2021
Clasificación Internacional C12N 15/74 Nº de solicitud 19793061 Solicitante SUZHOU ROYALTECH MED CO LTD Inventor/a DAI NAN
Disclosed are a non-integrative Listeria-based vaccine and a method for inducing antitumor immune response. In particular, the present disclosure provides a recombinant nucleic acid molecule, a recombinant plasmid or a recombinant expression vector comprising the recombinant nucleic acid molecule, a recombinant protein, and a recombinant Listeria. Also disclosed are a pharmaceutical composition and a vaccine comprising the above component, a method for slowly and continuously killing cells using the same, and a method for inducing immune response in a subject using the same.

10.WO/2021/073659VACCINE VECTOR PREPARED ON BASIS OF ANIONIC POLYMERS AND DERIVATIVES THEREOF
WO - 22.04.2021
Clasificación Internacional A61K 47/02 Nº de solicitud PCT/CN2020/136150 Solicitante SICHUAN UNIVERSITY Inventor/a SUN, Xun
A vaccine vector prepared on the basis of anionic polymers and derivatives thereof, and a preparation method therefor. Nanoparticles are compounded with an aluminum salt by means of a series of anionic polymers and derivatives thereof to form aluminum hydroxide. In the preparation process, different antigen components are added, and the antigens may be encapsulated. The prepared vaccine can effectively be absorbed by an antigen presenting cell and transmitted to a lymph node, and induce an antigen-specific immune response.

11.WO/2021/077094DISCOVERING, VALIDATING, AND PERSONALIZING TRANSPOSABLE ELEMENT CANCER VACCINES
WO - 22.04.2021
Clasificación Internacional G01N 33/573 Nº de solicitud PCT/US2020/056344 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a PFEIL, Jacob
Candidate cancer antigens are identified using transposable elements. Differential expression levels are determined for proteins using baseline expression levels (using measurements of healthy tissue) and tumor expression levels (using measurements of tumor tissue). Protein(s) having a differential expression level greater than a threshold are selected. Cancer vaccine(s) are generated for the selected cancer antigens (s). Particular cancer vaccine(s) are selected for a patient based on differential expression levels for proteins using baseline expression levels of the patient and tumor expression levels of the patient. A vaccine for protein(s) having a differential expression level greater than a threshold can be selected. A microarray can be used for the measurements of the patient. A first array of probes can hybridize to RNA from transposable elements. A second array of probes can hybridize to RNA of different MHC haplotypes. A third array of probes can hybridize to RNA of different APOBEC genotypes.

12.WO/2021/073402CARRIER PROTEIN WITH SITE-DIRECTED MUTATION AND USE THEREOF IN PREPARATION OF VACCINE
WO - 22.04.2021
Clasificación Internacional C07K 14/34 Nº de solicitud PCT/CN2020/117825 Solicitante CANSINO BIOLOGICS INC. Inventor/a WANG, Haomeng
Provided in the present invention are a carrier protein with a site-directed mutation and the use thereof in the preparation of a vaccine. The amino acid at at least one site on the carrier protein is mutated to an unnatural amino acid containing an azido or alkynyl end group. The carrier protein with site-directed mutation of the present invention can avoid excessive cross-linking with a polysaccharide antigen and can be used to prepare a polysaccharide protein conjugate vaccine.

13.20210121553Enhanced Shigella-Enterotoxigenic E. coli multi-valent vaccine
US - 29.04.2021
Clasificación Internacional A61K 39/112 Nº de solicitud 17042671 Solicitante University Of Maryland, Baltimore Inventor/a Eileen M. Barry
The invention relates to a multivalent *Shigella/Enterotoxigenic Escherichia coli* vaccine for use in prophylaxis and treatment of diarrheal disease. The *Shigella*-ETEC vaccine provides increased coverage of a broader range of ETEC and *Shigella* isolates than prior vaccines, and includes CS14 antigens and serotypes (*S. flexneri* 7a, or S. flexneri 1b).

14.3807210NANOPARTIKELIMPFSTOFFE MIT NEUARTIGEN STRUKTURELLEN KOMPONENTEN
EP - 21.04.2021
Clasificación Internacional B82Y 5/00 Nº de solicitud 19818872 Solicitante SCRIPPS RESEARCH INST Inventor/a HE LINLING
The present invention provides novel nanoparticle presented vaccine compositions that are stabilized with a locking domain. Various immunogens can be employed in the preparation of the vaccine compositions, including viral immunogens such as HIV-1 and Ebola viral immunogens, and non-viral immunogens such as immunogens derived from bacteria, parasites and mammalian species. The invention also provides methods of using such vaccine compositions in various therapeutic applications, e.g., for preventing or treating viral infections.

15.WO/2021/077215DENDRITIC CELL-TARGETING UNIVERSAL VACCINE FOR INFLUENZA INFECTION
WO - 29.04.2021

Clasificación Internacional C07K 19/00 Nº de solicitud PCT/CA2020/051409 Solicitante UNIVERSITY OF MANITOBA Inventor/a YAO, Xiao-Jian
We have recently developed a novel DC-targeting vaccine platform using Ebola glycoprotein (EboGP) DC-targeting domain-based fusion protein technology. Here, we will use this technology to generate universal vaccines against Influenza A by fusing a DC-targeting/activation domain (EboGPAM), derived from EboGP to I) a tetrameric conserved extracellular domain of M2 (M2e) of Influenza A strains from human, birds, and swine; 2) the conserved stalk regions (HAcs) of HA and an M2 polypeptide from H5N1 strain; and 3) the HA head regions polypeptides (HAH5-1-3) derived from H5N1, H1 N1 and H3N2 strains.

16.3807320KOMBINATIONSTHERAPIE MIT NEOANTIGEN-IMPFSTOFF
EP - 21.04.2021
Clasificación Internacional C07K 16/28 Nº de solicitud 19820230 Solicitante BIONTECH US INC Inventor/a ANG ROBERT
The present invention relates to neoplasia vaccine or immunogenic composition administered in combination with other agents, such as checkpoint blockade inhibitors for the treatment or prevention of neoplasia in a subject

17.20210121557NOVEL SEVERE FEVER WITH THROMBOCYTOPENIA SYNDROME VIRUS
US - 29.04.2021
Clasificación Internacional A61K 39/12 Nº de solicitud 17050602 Solicitante I.D.BIO. Inventor/a Yeo-Jeong CHOI
The present invention relates to a novel genotype of severe fever with thrombocytopenia syndrome viruses and use thereof as an immunogenic composition. The severe fever with thrombocytopenia syndrome viruses of the present invention are genetically different from conventional severe fever with thrombocytopenia syndrome viruses and are novel viruses taxonomically belonging to three sub-groups of genotype B. In view of the vaccine property that specific genotype viruses alone show only limited protective potential, the novel viruses of the present invention may be advantageously used as a vaccine having excellent cross-immunogenicity for SFTSV.

18.3807403NEUARTIGES FISCHVIRUS
EP - 21.04.2021
Clasificación Internacional C12N 7/00 Nº de solicitud 19737262 Solicitante PATOGEN AS Inventor/a AANES HÅVARD
The invention relates to a novel fish virus, an isolated nucleic acid having a sequence selected from the group consisting of SEQ ID NO: 2 and 3, sequences being complementary to SEQ ID NO: 2 and 3, and variants thereof being at least 70 % identical thereof. The invention also relates to a method for detection of the nucleic acid, primers, probes, a vector and a host cell, a DNA vaccine, a recombinant protein, a recombinant vaccine, an antibody and a diagnostic kit.

19.WO/2021/081499CHIKUNGUNYA VIRUS-LIKE PARTICLE VACCINE AND METHODS OF USING THE SAME
WO - 29.04.2021
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2020/057361 Solicitante EMERGENT TRAVEL HEALTH INC. Inventor/a ALEXANDER, Jeffery L.
The present disclosure is directed to improved virus-like particle (VLP) compositions and vaccines for use in inducing an immune response and/or protective immunity against a Chikungunya virus (CHIKV) infection in a subject, e.g., by inducing a neutralizing antibody response against CHIKV in a subject within 7 days after administration of a single dose of the composition or vaccine.

20.202117009236HERV-K-DERIVED ANTIGENS AS SHARED TUMOR ANTIGENS FOR ANTI-CANCER VACCINE

IN - 23.04.2021
Clasificación Internacional A61K / Nº de solicitud 202117009236 Solicitante CENTRE LÉON-BÉRARD Inventor/a DEPIL, Stéphane
A composition or vaccine comprising at least one peptide, or an expression vector that induces expression of said at least one peptide in vivo, the peptide consisting of, or comprising, shared HERV-K derived antigens, and a pharmaceutically acceptable vehicle or excipient. Composition comprising Cytotoxic T Lymphocytes (CTLs) of a patient treated with such a peptide, or comprising T-cell Receptor (TCR) engineered T cells recognizing such a peptide.

21.WO/2021/072520METHOD FOR THE PRODUCTION, RECOVERY AND PURIFICATION OF CAPSULAR POLYSACCHARIDE POLYRIBOSYLRIBITOL PHOSPHATE (PRP) AND USE THEREOF
WO - 22.04.2021
Clasificación Internacional C12P 19/04 Nº de solicitud PCT/BR2020/050410 Solicitante INSTITUTO BUTANTAN Inventor/a TAKAGI, Mickie
The present invention relates to methods involved in the production and purification of the capsular polysaccharide polyribosylribitol phosphate (PRP) produced by the bacteria Haemophilus influenza type b (Hib) to obtain the polysaccharide with suitable molecular mass and purity for subsequent formulation of the Hib conjugate vaccine. The present invention also relates to the use of the capsular polysaccharide polyribosylribitol phosphate (PRP) to prepare the vaccine.

22.WO/2021/074655CANCER VACCINE
WO - 22.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/GB2020/052631 Solicitante UNIVERSITY OF SOUTHAMPTON Inventor/a SAVELYEVA, Natalia
The present invention relates to nucleic acid vaccines which encode at least a MAGED4B protein, for use in the treatment of cancer in particular. Synergistic combinations with other anti-cancer agents are described, particularly immune checkpoint inhibitors. The cancer vaccine may further comprise an immunologically active fragment to enhance the immune response, and an additional cancer antigen, such as FJX1. Particular combination therapies of interest include immunotherapies, radiotherapy, targeted therapies and chemotherapies.

23.20210113675DUAL-SCALE POROUS SILICA PARTICLE-BASED COMPOSITION FOR PREVENTING OR TREATING CANCER
US - 22.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud 17073656 Solicitante Research & Business Foundation Sungkyunkwan University Inventor/a Jae Yun KIM
The present invention relates to a dual-scale porous silica particle-based pharmaceutical composition for preventing or treating cancer, which includes porous silica nanoparticles and porous silica microparticles. The pharmaceutical composition of the present invention promotes the generation of a larger amount of antigen-specific, cytotoxic T cells against cancer than a mesoporous silica nanoparticle (MSN) vaccine, and exhibits increased anti-tumor efficacy compared with a mesoporous silica microrod (MSR) vaccine.

24.20210113686Mixtures of Polysaccharide Protein Pegylated Compounds
US - 22.04.2021
Clasificación Internacional A61K 39/385 Nº de solicitud 16984145 Solicitante Inventprise, LLC Inventor/a Subhash V. Kapre
The disclosure describes compositions containing PEGylated compounds using linkers, bivalent polysaccharide covalent PEG compounds, and methods of bivalent polysaccharide-PEG compounds in the development of multivalent vaccines. PEGylated conjugation of capsular polysaccharides to carrier proteins is carried out using homo-bifunctional and/or hetero-bifunctional linkers of specific lengths.

Incorporation of bifunctional PEG linkers induces higher titers of functional antibodies with high avidity, eliciting higher immunologic memory, and reduced carrier protein effect. This provides immunochemically cross-reactive capsular polysaccharides wherein one or more cross-reactive capsular polysaccharides are covalently PEG compounded sequentially or concurrently to carrier protein using bifunctional linkers bearing the same or different functional groups. Such a linker and the size of the capsular polysaccharides provides an effective multivalent vaccine with high antibody titers and a reduced carrier effect, with a reduction in the content of the capsular polysaccharide and protein per dose of vaccine which reduces reactogenicity.

25.2021201844HIGH TITER RECOMBINANT INFLUENZA VIRUSES WITH ENHANCED REPLICATION IN MDCK OR VERO CELLS OR EGGS
AU - 22.04.2021
Clasificación Internacional C12N 7/00 Nº de solicitud 2021201844 Solicitante Wisconsin Alumni Research Foundation Inventor/a
The invention provides a composition useful to prepare high titer influenza viruses, e.g., in the absence of helper virus, which includes internal genes from an influenza virus vaccine strain or isolate, e.g., one that is safe in humans, for instance, one that does not result in significant disease, that confer enhanced growth in cells in culture, such as MDCK cells, or in eggs.

26.WO/2021/073788NATURAL NON-PATHOGENIC MICROORGANISMS CAPABLE OF ASSOCIATING GLYCOLIPIDS OR LIPOPEPTIDES AND USE THEREOF
WO - 22.04.2021
Clasificación Internacional A61K 39/02 Nº de solicitud PCT/EP2020/069910 Solicitante ACARYON GMBH Inventor/a ULSEMER, Philippe
The present invention relates to modified non-pathogenic microorganisms (e.g. bacteria, yeasts or fungi) comprising a cell and a heterologous lipid carrier, wherein said lipid carrier comprises a) a lipid portion, wherein said lipid portion is at least partially associated with an exterior surface of said cell of said modified microorganism and wherein said lipid portion comprises a ceramide-like glycolipid moiety and/or a fatty acid moiety, and wherein said lipid carrier further comprises b) a non-lipid portion, wherein said microorganism is capable of locating and/or displaying said non-lipid portion or fragment thereof onto the exterior surface of said cell, wherein said cell of said modified microorganism does not comprise a mycomembrane and wherein said heterologous lipid carrier is not alpha-galactosylceramide. A composition comprising one or more of the modified microorganism and a vaccine or adjuvant comprising the microorganism or said composition are also subject to the present invention and are among others, useful for the development of oral vaccines, oral drug delivery systems and anti-infectious agents as well as for various applications and/or treatments. Furthermore, the present invention relates to a method for producing or isolating said modified microorganism and a method for screening for a lipid carrier, growth medium, loading medium, loading conditions, or growth conditions.

27.WO/2021/078910IMMUNOTHERAPY TARGETING TUMOR NEOANTIGENIC PEPTIDES
WO - 29.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2020/079832 Solicitante INSTITUT CURIE Inventor/a DELATTRE, Olivier
The present disclosure relates to a tumor specific neoantigenic peptide, wherein said peptide (i) is encoded by a part of an (ORF) sequence from an unannotated transcript which transcription is positively regulated by an aberrant fusion protein, and (ii) is expressed at a higher level or frequency in a sample from said tumor compared to normal tissue sample. The present disclosure also relates to vaccine or immunogenic composition, antibodies and immune cells derived thereof and their use in therapy of cancer.

28.20210113680Multivalent VLP Conjugates
US - 22.04.2021
Clasificación Internacional A61K 39/09 Nº de solicitud 16987998 Solicitante Inventprise, LLC Inventor/a Subhash V. Kapre
The invention is directed to vaccines comprising capsular polysaccharides conjugated to one or more components of virus like particles (VLP), and methods for the administration of and methods for the manufacture of vaccines of the invention. Preferably vaccines of the invention generate a therapeutically effective response in an individual in need thereof to multiple strains and/or serotypes of the same or of different infectious agents. Preferably such vaccines generate a therapeutically effective immune response to all pathogenic strains and/or serotypes of the same infectious agent. In particular, the invention is directed to methods and compositions for the cost efficient administration of a vaccine to a patient in need thereof exposing the patient's immune system to only the immunogenic components that are likely to be beneficial for the generation of a protective immunological response, both efficacy and safety are increased and cost effectively.

29.20210113691Use of Triplex CMV Vaccine in CAR T Cell Therapy
US - 22.04.2021
Clasificación Internacional A61K 39/395 Nº de solicitud 17006758 Solicitante City of Hope Inventor/a Don J. Diamond
A method for treating a patient comprising: (a) providing a composition comprising a population of T cells expressing both a chimeric antigen receptor (CAR) and a T cell receptor specific for a cytomegalovirus (CMV) antigen; (b) administering the composition to the patient; and (c) administering to the patient a viral vector encoding: (i) CMV pp65 and (ii) a fusion protein comprising exon 4 of CMV protein IE I (e4) and exon 5 of CMV protein IE2 (e5) either prior to or subsequent to administering the composition comprising a population of T cells to the patient is described.

30.3810230SYSTEME UND VERFAHREN ZUR ABGABE VON WIRKSTOFFEN MIT ZWEI KOMPONENTEN
EP - 28.04.2021
Clasificación Internacional A61M 5/24 Nº de solicitud 19823345 Solicitante KOSKA FAMILY LTD Inventor/a KOSKA MARC ANDREW
A delivery system may include a delivery assembly configured to allow delivery of a single dose of a drug agent (e.g., vaccine, drug, medicament, etc.) from a Blow-Fill-Seal (BFS) vial to a patient. The delivery assembly may generally include a modular design consisting of separately constructed components cooperatively arranged and coupled to one another. The drug agent may comprise a fluid agent, diluent, or carrier fluid disposed in a first module of the delivery assembly (e.g., the BFS vial) and an active ingredient disposed in a second module of the delivery assembly such that the two components are combined or introduced upon use, thereby creating a drug agent to be administered to the patient.

31.2021101706BLOCKCHAIN TECHNIQUE FOR COVID-19 VACCINE SUPPLY MANAGEMENT
AU - 29.04.2021
Clasificación Internacional Nº de solicitud 2021101706 Solicitante Agarwal, Dileep Kumar Inventor/a

32.3812395MUTANT DES MENSCHLICHEN PAPILLOMAVIRUS-TYP-18-L1-PROTEINS
EP - 28.04.2021
Clasificación Internacional C07K 14/025 Nº de solicitud 19815298 Solicitante UNIV XIAMEN Inventor/a LI SHAOWEI
The present invention relates to a mutated HPV18 L1 protein (or a variant thereof), a sequence encoding the same, a method for preparing the same, and a virus-like particle comprising the same, wherein the protein (or a variant thereof) and the virus-like particle can induce the generation of neutralizing antibodies

against at least two HPV types (for example, HPV18 and HPV45, or HPV18, HPV45 and HPV59), and therefore can be used to prevent infection by said at least two HPV types, and a disease caused by said infection, such as cervical cancer and condyloma acuminatum. The invention further relates to the use of the protein and the virus-like particle in the manufacture of a pharmaceutical composition or a vaccine for preventing infection by said at least two HPV types, and a disease caused by said infection, such as cervical cancer and condyloma acuminatum.

33.WO/2021/076559HUMAN BROADLY NEUTRALIZING ANTIBODIES AGAINST THE MEMBRANE-PROXIMAL EXTERNAL REGION OF HIV ENV FOR VACCINE DESIGN AND INTERVENTION
WO - 22.04.2021
Clasificación Internacional C07K 16/10 Nº de solicitud PCT/US2020/055486 Solicitante THE SCRIPPS RESEARCH INSTITUTE Inventor/a ZWICK, Michael
The present disclosure relates to anti-HIV antibodies and their use in the treatment or prevention of HIV/AIDS and in the development of HIV vaccines.

34.3810170VERFAHREN UND ZUSAMMENSETZUNGEN IM ZUSAMMENHANG MIT EINEM IMPFSTOFF DER NÄCHSTEN GENERATION
EP - 28.04.2021
Clasificación Internacional A61K 38/00 Nº de solicitud 19800219 Solicitante UNIV KANSAS Inventor/a PICKING WENDY L
Disclosed are methods and compositions related to polypeptides comprising a fusion of the needle tip protein and translocator protein of a type III secretion apparatus (T3SA) from a type III secretion system (T3SS) of a Gram negative bacteria. Disclosed herein are fusion polypeptides comprising a fusion of a needle tip protein, such as, Bsp22, LcrV, BipD, PcrV, CT053, or CT668, or an antigenic fragment thereof; and a translocator protein, such as, BopB, YopB, BipB, PopB, CopB, or CopB2, or an antigenic fragment thereof from a Type III secretion system (T3SS) of a Gram negative bacteria, such as, Bordetella, Burkholderia, Chlamvdia, Pseudononas, Vibrio, or Yersinia.

35.20210121545TOXOPLASMA GONDII VACCINE
US - 29.04.2021
Clasificación Internacional A61K 39/002 Nº de solicitud 17251121 Solicitante WISCONSIN ALUMNI RESEARCH FOUNDATION (WARF) Inventor/a Laura Knoll
Methods of preparing mammalian enteroids, and methods producing *T. gondii* oocysts in vitro and in vivo in heterologous systems, are provided.

36.2025748Duck Plague Virus gE-gI Double Gene Markerless Deletion Strain DPV CHVAgE+AgI and Construction Method Thereof
NL - 21.04.2021
Clasificación Internacional C12N 7/01 Nº de solicitud 2025748 Solicitante SICHUAN AGRICULTURAL UNIVERSITY Inventor/a Anchun Cheng
The present invention provides a duck plague virus gE-gI double gene markerlessdeletion strain and a construction method thereof. By using the Escherichia coli strainGSI783 and the pEPkan-S plasmid, in the present invention, the gE gene and gI geneof duck plague virus were deleted by two homologous recombinations on the bacterialartificial chromosome recombinant duck plague virus rescue system platform, and thenthe MiniF element was deleted by intracellular spontaneous homologousrecombination. The duck plague virus double gene deletion strain without exogenousbase and MiniF element residues was first constructed by the present invention. Thetechnical solution of the present invention solves the problem of residual bases at thedeletion site when a duck plague virus gene is deleted and the MiniF element is deletedas well. The present invention provides sufficient technical support for accuratelyexploring the gene function of duck plague virus and the construction of liveattenuated vaccine.

37.20210116436OBTAINING INFORMATION FROM A BIOLOGICAL SAMPLE IN A FLOW CELL
US - 22.04.2021
Clasificación Internacional G01N 33/483 Nº de solicitud 17254473 Solicitante ILLUMINA, INC. Inventor/a Tarun Khurana
Methods are used for obtaining, cataloguing, and/or storing data derived from a biological source using a flow cell body, electrodes, and an imaging assembly. The data may include DNA and/or RNA obtained from a biological source, such as from the cells of an organism. The methods may be used to obtain, catalog, and/or store data such as DNA or RNA sequence from a pathogen such as a virus and/or a bacteria, human health data over time, and immune system information from an individual. The data obtained using the disclosed methods may be used for a variety of different purposes, including the manufacture of vaccine compositions, and for restoring the immune system of an individual who has undergone an immune system depleting event. The methods may be used for storage of biological cells, which may be used for the screening of compounds, such as small molecules with potential for therapeutic indications.

38.3808372NEUARTIGE IMPFSTOFFZUSAMMENSETZUNGEN
EP - 21.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud 19203834 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a
A Shigella flexneri O-antigen of a first serotype or subserotype for use in raising an immune response against one or more Shigella flexneri O-antigen of a different serotype or subserotype, together with associated binding moieties, pharmaceutical compositions, kits, uses or methods.

39.20210121525SILK FIBROIN-CONTAINING COMPOSITION AND METHODS OF USE THEREOF
US - 29.04.2021
Clasificación Internacional A61K 38/17 Nº de solicitud 16757195 Solicitante Georgetown University Inventor/a Morarji PEESAY
Provided are compositions comprising silk fibroin, perfluorocarbon (PFC), and surfactant, and methods of use thereof. The compositions can further comprise a drug, an antibody, or a vaccine. Compositions of the invention are useful in the treatment of certain lung diseases and conditions, including in particular those characterized by surfactant deficiency. Compositions of the invention are particularly useful in the treatment of respiratory distress syndrome (RDS). Also provided are methods for making the compositions, and kits comprising components of the compositions.

40.WO/2021/074352NOVEL VACCINE COMPOSITIONS
WO - 22.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2020/079140 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a CITIULO, Francesco
A Shigella flexneri O-antigen of a first serotype or subserotype are provided for use in raising an immune response against one or more Shigella flexneri O-antigen of a different serotype or subserotype, together with associated binding moieties, pharmaceutical compositions, kits, uses or methods.

41.WO/2021/077051IMPROVED LAMP CONSTRUCTS COMPRISING CANCER ANTIGENS
WO - 22.04.2021
Clasificación Internacional C07K 14/705 Nº de solicitud PCT/US2020/056197 Solicitante IMMUNOMIC THERAPEUTICS, INC Inventor/a HEILAND, Teri
The present invention provides improved LAMP Constructs comprising specific fragments of the LAMP lumenal domain to deliver cancer antigens to immune cells for enhanced processing. These LAMP Constructs can be used for the treatment of disease and in particular hyperproliferative disorders and/or cancer. The improved LAMP Constructs allow for presentation of properly configured three dimensional

epitopes for production of an immune response when administered to a subject. The improved LAMP Constructs can be multivalent molecules, and/or can be provided as part of a multivalent vaccine containing two or more LAMP Constructs. The improved LAMP Constructs as described herein can also be used to generate antibodies when administered to a non-human vertebrate.

42.3808396SPRITZE MIT KOLBENSTANGE ZUM AUFNEHMEN DER NADEL
EP - 21.04.2021
Clasificación Internacional A61M 5/315 Nº de solicitud 20212195 Solicitante INJECTO GROUP AS Inventor/a HETTING MIKKEL
The present invention relates to an injector comprising a cylinder with a longitudinal axis and an inner wall; a solid piston inserted into the cylinder without a preset orientation; a hypodermic needle attached to an outlet at an outlet end of the cylinder opposite an actuating end of the cylinder; and a piston rod having a tubular section for housing the hypodermic needle, the tubular section having a needle insertion end comprising an engagement device for engaging a complementary engagement device of the outlet or the hypodermic needle, and a needle protection end opposite the needle insertion end, which tubular section comprises an actuating surface to push the piston, wherein the piston rod has a length, which is equal to or larger than an operating length of the cylinder defined by the distance from the actuating end of the cylinder to the outlet end of the cylinder minus the dimension of the piston parallel with the longitudinal axis. The injector of is suited for delivery of a pharmaceutical composition, such as a vaccine.

43.20210113673Neoantigen Identification, Manufacture, and Use
US - 22.04.2021
Clasificación Internacional A61K 39/00 Nº de solicitud 16606577 Solicitante Gritstone Oncology, Inc. Inventor/a Thomas Boucher
Disclosed herein is a system and methods for determining the alleles, neoantigens, and vaccine composition as determined on the basis of an individual's tumor mutations. Also disclosed are systems and methods for obtaining high quality sequencing data from a tumor. Further, described herein are systems and methods for identifying somatic changes in polymorphic genome data. Finally, described herein are unique cancer vaccines.

44.202147018123TELEOST INVARIANT CHAIN CANCER VACCINE
IN - 23.04.2021
Clasificación Internacional A61K / Nº de solicitud 202147018123 Solicitante NOUSCOM AG Inventor/a NICOSIA, Alfredo
The present invention relates to polypeptides comprising a fragment of a teleost invariant chain optionally fused to one or more antigens or a teleost invariant chain fused to one or more antigens or antigenic fragments thereof, a polynucleotide encoding such polypeptides, vectors comprising such polynucleotides, collection of vectors comprising such polynucleotides and use of such polypeptides, polynucleotides, vectors for treating or preventing diseases, in particular tumor diseases. The teleost invariant chain polypeptides or fragments thereof act as "T cell enhancer" converting non-immunogenic antigenic sequences into immunogenic T cell antigens.

45.3810796MESSUNG UND VORHERSAGE VON GENETISCHEN VIRUSMUTATIONSMUSTERN
EP - 28.04.2021
Clasificación Internacional C12Q 1/68 Nº de solicitud 19822710 Solicitante UNIV HONG KONG CHINESE Inventor/a WANG MAGGIE HAITIAN
Mutation patterns of a virus (e.g., influenza virus) are identified and predicted based on identifying effective mutations in an amino acid sequence of the virus and an effective mutation period during which the mutation enables the virus to escape from human immunity. Based on analysis of existing virus composition and infection rates, a measure of genetic mutation activity ("g-measure") is determined, and

one or more associated parameters that further characterize virus genetic activity may also be optimized. The g-measure and/or associated parameters can be used to predict future genetic activity of the virus, which can aid in selection of strains for a future vaccine and/or predictions of infectious-disease outbreaks.

46.WO/2021/076982MODIFIED EXTRACELLULAR ENVELOPED VIRUS
WO - 22.04.2021
Clasificación Internacional C12N 15/39 Nº de solicitud PCT/US2020/056107 Solicitante KALIVIR IMMUNOTHERAPEUTICS LLC Inventor/a THORNE, Stephen, H.
This disclosure provides a modified oncolytic poxvirus, such as a vaccinia virus, that can contain modifications in the viral genome that increases production of an extracellular enveloped form of the virus. The modified oncolytic poxvirus can be utilized as a vector for systemic delivery. Also provided are methods of using the modified oncolytic poxvirus.

47.20210113606TREATMENT USING CYTOKINE ENCODING RNA
US - 22.04.2021
Clasificación Internacional A61K 31/7105 Nº de solicitud 16966422 Solicitante BioNTech RNA Pharmaceuticals GmbH Inventor/a Ugur Sahin
The present disclosure relates to methods and compositions for inducing an immune response in a subject comprising co-administering to the subject RNA encoding peptides or proteins used for vaccination and RNA encoding IL-2 attached to a pharmacokinetic modifying group and/or RNA encoding IL-7 attached to a pharmacokinetic modifying group. The vaccine is particularly effective if an immune checkpoint inhibitor such as an anti-PD-L1 antibody is further administered. The present disclosure further relates to methods involving the target-specific delivery of a cytokine to a target organ or target tissue.

48.20210113647COMBINATION, COMPOSITION, AND METHOD OF ADMINISTERING THE COMBINATION OR COMPOSITION TO ANIMALS
US - 22.04.2021
Clasificación Internacional A61K 36/88 Nº de solicitud 17132467 Solicitante Phibro Animal Health Corporation Inventor/a Kenneth W. Bafundo
Disclosed herein are embodiments of a combination and/or composition for administration to animals. In some embodiments, the combination and/or composition can be administered to treat and/or prevent a disease in animals. In some embodiments, the combination and/or composition can be administered to promote animal health. In some embodiments, the combination comprises a composition comprising *Yucca schidigera, Quillaja saponaria*, and combinations thereof and a composition comprising an antimicrobial, an antibiotic, an anticoccidial, a vaccine, or combinations thereof. The combinations or compositions disclosed herein can also improve feed conversion rates in animals.

49.3810755ZUSAMMENSETZUNGEN UND VERFAHREN ZUR BEHANDLUNG VON HIV
EP - 28.04.2021
Clasificación Internacional C12N 5/0783 Nº de solicitud 19823605 Solicitante NANTCELL INC Inventor/a NIAZI KAYVAN
HIV treatment, and especially treatment of latent infected CD4 cells, can be significantly improved using a kick-and-kill approach that employs an immune stimulation component and/or HDAC inhibition as one treatment component, and that may also include a second component in which a vaccine composition, various NK cells, CAR-T cells, and/or broadly neutralizing antibodies are administered.

50.20210122787TETRAVALENT DENGUE VACCINE
US - 29.04.2021
Clasificación Internacional C07K 14/005 Nº de solicitud 17077206 Solicitante International Centre for Genetic Engineering and Biotechnology Inventor/a Navin KHANNA

The invention provides a recombinant polypeptide comprising the EDIII domain of each of Dengue virus serotype DENV-1, DENV-2, DENV-3, and DENV-4 linked to the N-terminal of HBsAg.

51.20210113619PEPTIDES AND COMBINATION OF PEPTIDES OF NON-CANONICAL ORIGIN FOR USE IN IMMUNOTHERAPY AGAINST DIFFERENT TYPES OF CANCERS
US - 22.04.2021
Clasificación Internacional A61K 35/17 Nº de solicitud 17117611 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.

52.WO/2021/076897COMPOSITIONS AND METHODS FOR PRODUCING ENHANCED IMMUNE RESPONSES AND RAPID ANTIBODY PRODUCTION
WO - 22.04.2021
Clasificación Internacional C12P 19/04 Nº de solicitud PCT/US2020/055995 Solicitante UNIVERSITY OF VIRGINIA PATENT FOUNDATION Inventor/a ZEICHNER, Steven, L.
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.

53.WO/2021/076570CHAGAS DISEASE VACCINE ANTIGENS WITH IMPROVED STABILITY AND DECREASED AGGREGATION
WO - 22.04.2021
Clasificación Internacional C07K 14/44 Nº de solicitud PCT/US2020/055504 Solicitante BAYLOR COLLEGE OF MEDICINE Inventor/a ZHAN, Bin
Provided herein are compositions and methods for the prevention and treatment of Chagas disease and acute and chronic symptoms thereof. The compositions comprise recombinant proteins based on an amino terminal fragment of the TSA-1 protein from Trypanosoma cruzi. In the fragment, one or more Cys residues is mutated to prevent the formation of disulfide bonds and to enhance solubility. The recombinant proteins also include a carboxyl terminal fragment of the TSA-1 protein from Trypanosoma cruzi to provide additional stability and solubility. The resulting recombinant protein remains soluble upon prolonged storage at low temperatures and elicits a robust immune response upon administration, including decreasing the number of inflammatory cells in heart tissue of subjects.

54.WO/2021/076960LIVE VIRUS VACCINE INJURY RISK
WO - 22.04.2021
Clasificación Internacional A61K 39/275 Nº de solicitud PCT/US2020/056076 Solicitante ANAND, Rene Inventor/a ANAND, Rene

Methods for assessing the risk of autism from the use of live virus-vaccines in neonates and toddlers are disclosed.

55.WO/2021/080373RV2299C-ESAT6-HSPX-RIPA FUSION PROTEIN COMPOSITION FOR BOOSTING BCG VACCINE
WO - 29.04.2021
Clasificación Internacional A61K 39/04 Nº de solicitud PCT/KR2020/014572 Solicitante THE INDUSTRY & ACADEMIC COOPERATION IN CHUNGNAM NATIONAL UNIVERSITY (IAC) Inventor/a KIM, Hwa Jung
The present invention relates to a BCG boosting composition and a BCG boosting method and, more specifically, to a BCG boosting composition comprising as an active ingredient a fusion protein of Rv2299c, ESAT6, HspX, and RipA, which are derived from M. tuberculosis and a BCG boosting method. The composition and method of the present invention boosts conventional BCG vaccines to augment immune responses in the human body.

56.3808361NUKLEINSÄUREN ZUR BEHANDLUNG VON ALLERGIEN
EP - 21.04.2021
Clasificación Internacional A61K 38/00 Nº de solicitud 20194785 Solicitante IMMUNOMIC THERAPEUTICS INC Inventor/a HEARL WILLIAM
The present invention provides DNA vaccines for the treatment of allergies. The vaccines comprise the coding sequence for one or more allergenic epitopes, and preferably the full protein sequence, of the allergenic protein from which the epitope(s) is derived, fused in-frame with the lumenal domain of the lysosomal associated membrane protein (LAMP) and the targeting sequence of LAMP. The vaccines allow for presentation of properly configured three dimensional epitopes for production of an immune response. The vaccines can be multivalent molecules, and/or can be provided as part of a multivalent vaccine containing two or more DNA constructs.

57.20210115410LIVE ATTENUATED ARKANSAS SEROTYPE INFECTIOUS BRONCHITIS VIRUS VACCINE
US - 22.04.2021
Clasificación Internacional C12N 7/00 Nº de solicitud 17132182 Solicitante UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC. Inventor/a Brian J. Jordan
Attenuated isolates of the Arkansas serotype of infectious bronchitis virus (IBV), including the IBV isolate ArkGA p60 deposited at the ATCC under Patent Designation PTA-123783, and compositions thereof are presented. Methods for administering the isolates or compositions as vaccines to the prevent virulent IBV infection in birds of the order Galliformes are also presented.

58.2588334Compositions comprising bacterial strains
GB - 21.04.2021
Clasificación Internacional A61K 35/74 Nº de solicitud 202019509 Solicitante 4D PHARMA RES LTD Inventor/a IMKE ELISABETH MULDER
A composition comprising a bacterial strain of the genus Erysipelatoclostridium (e.g. Clostridium ramosum), for use in treating or preventing inflammatory bowel disease. The inflammatory bowel disease can be mediated by interleukin-17 (IL-17) or the Th17 pathway. The bacterial strain of the composition can be in an amount of from about 1x106 to about 1x1011 CFU/g. The composition can reduce IL-17 production or reduce Th17 cell differentiation. The composition can be used in a patient with elevated IL-17 levels or Th17 cells. The bacterial strain can be lyophilized. The composition can comprise a single strain of the genus Erysipelatoclostridium. The Erysipelatoclostridium bacterial strain can be part of a microbial consortium. The bacterial strain can be viable and capable of colonising the intestine. Further

aspects of the invention are food products and vaccine compositions that comprise the composition, as well as a method of treating or preventing inflammatory bowel disease.

59.2588332Compositions comprising bacterial strains
GB - 21.04.2021
Clasificación Internacional A61K 35/74 Nº de solicitud 202019501 Solicitante 4D PHARMA RES LTD Inventor/a IMKE ELISABETH MULDER
A composition comprising a bacterial strain of the genus Erysipelatoclostridium (e.g. Clostridium ramosum), for use in treating or preventing an inflammatory disease or condition that affects the intestine. The disease or condition can be mediated by interleukin-17 (IL-17) or the Th17 pathway. The bacterial strain of the composition can be in an amount of from about 1x106 to about 1x1011 CFU/g. The composition can reduce IL-17 production or reduce Th17 cell differentiation. The composition can be used in a patient with elevated IL-17 levels or Th17 cells. The bacterial strain can be lyophilized. The composition can comprise a single strain of the genus Erysipelatoclostridium. The Erysipelatoclostridium bacterial strain can be part of a microbial consortium. The bacterial strain can be viable and capable of colonising the intestine. Further aspects of the invention are food products and vaccine compositions that comprise the composition.

60.2588333Compositions comprising bacterial strains
GB - 21.04.2021
Clasificación Internacional A61K 35/74 Nº de solicitud 202019507 Solicitante 4D PHARMA RES LTD Inventor/a IMKE ELISABETH MULDER
A composition comprising a bacterial strain of the genus Erysipelatoclostridium (e.g. Clostridium ramosum), for use in treating or preventing a disease or condition mediated by interleukin-17 (IL-17) or the Th17 pathway. The composition contains the bacterial strain in an amount of from about 1x106 to about 1x1011 CFU/g. The composition can be used to treat or prevent cancers, asthma, arthritis and multiple sclerosis. The composition can reduce IL-17 production or reduce Th17 cell differentiation. The composition can be used in a patient with elevated IL-17 levels or Th17 cells. The composition can be used to treat or prevent uveitis. The bacterial strain can be viable and capable of colonising the intestine. The composition can comprise a microbial consortium. Further aspects of the invention are food products and vaccine compositions that comprise the composition. A further aspect of the invention is a composition comprising a bacterial strain of the genus Erysipelatoclostridium which does not contain bacteria from any other genus, or which comprises only de minimis (minimal) or biologically irrelevant amounts of bacteria from another genus, for use in therapy, wherein the composition contains the bacterial strain in an amount of from about 1x106 to about 1x1011 CFU/g.

61.3812468VERFAHREN ZUR HERSTELLUNG KUGELFÖRMIGER LYOPHILISIERTER PELLETS AUS BIOLOGISCHEN MATERIALIEN
EP - 28.04.2021
Clasificación Internacional C12Q 1/68 Nº de solicitud 20208189 Solicitante MERCK SHARP & DOHME Inventor/a BARR COLLEEN M
Methods for preparing lyophilized pellets of biological materials are described. The pellets have a substantially spherical shape and are prepared by freezing droplets of a liquid composition of a desired biological material on a flat, solid surface, in particular, a surface that does not have any cavities, followed by lyophilizing the frozen droplets. These methods are useful for preparing lyophilized pellets having a high concentration of a desired biological material, in particular a therapeutic protein or vaccine, and which have a faster reconstitution time than lyophilized powder cakes prepared in vials.

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

Results Search in US Patent Collection db for: (ABST/vaccine AND ISD/20210421->20210430), 8 records.

	PAT. NO.	Title
1	10,987,422	Fungal vaccine compositions and methods of use thereof
2	10,987,420	Synthetic conjugate of CpG DNA and T-help/CTL peptide
3	10,987,419	Immunostimulatory compositions, particles, and uses related thereto
4	10,987,418	Polypeptide carrier for presenting target polypeptide and uses thereof
5	10,987,417	Engineered and multimerized human immunodeficiency virus envelope glycoproteins and uses thereof
6	10,987,416	Purification of recombinant EV71 virus-like particle and method for preparing vaccine thereof
7	10,987,415	Process for production of purified recombinant cholera toxin B (rCTB) and formulation thereon
8	10,987,413	MHC-independent tumor-associated antigens

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