VacCiencia

FINLAY EDICIONES

Boletín Científico

No. 10 (23-30 abril / 2023)

EN ESTE NÚMERO

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

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

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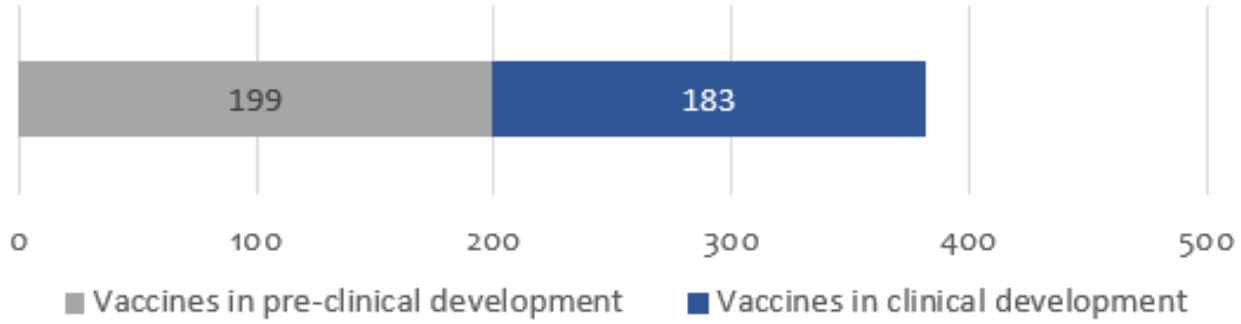
CUBA

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

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

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

183 Vacunas en evaluación clínica y 199 en evaluación preclínica



Vacunas en evaluación clínica por plataforma

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

Vacunas en evaluación clínica por vía de administración

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

Número de dosis de las vacunas en evaluación clínica

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

Vacunas mucosales en evaluación clínica

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

Vacunas en fase 4 de evaluación clínica

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

Vacunas en fase 3 de evaluación clínica

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

Noticias en la Web

Vietnam. Health Ministry urges quickening vaccination against COVID-19

23 abr. Amidst the rapidly increasing number of new cases of COVID-19, the Health Ministry has urged continued efforts to accelerate vaccination against COVID-19, with priority given to groups of high risks of developing serious symptoms and even dying when contracting the virus.

During the week from April 16 – 22, Vietnam counted 12,700 new cases, the highest weekly number since the beginning of the year.

The total number of COVID-19 cases so far rose to 11,54,059, with 10,616,725 patients having recovered.

At present, 123 patients are in serious conditions needing breathing support, including 24 requiring invasive machine ventilation.

One death from COVID-19 was reported in Hanoi on April 22, raising the total fatalities from the pandemic so far to 43,187.

More than 266 million doses of OVID-19 vaccines have been administered so far.

Fuente: Vietnam Plus. Disponible en https://bit.ly/3Vnpvwo

Hongkongers urged to get pneumococcal jabs

Apr 24. Four medical associations on Monday urged people to get vaccinated against pneumococcus, warning that illnesses caused by the bacterium can be serious in young children and the elderly.

The Hong Kong Geriatrics Society, Hong Kong Society for Infectious Diseases, Hong Kong Paediatric Society and Hong Kong Society for Paediatric Immunology Allergy and Infectious Diseases said a survey they carried out last month suggests most people underestimate the risks involved with pneumococcal infections.

Almost 80 percent of 3,600 people polled said they had not been jabbed, the groups said.

Pneumococcus causes mild illnesses such as sinus or middle ear infections, but can also cause more serious conditions including pneumonia, sepsis, and meningitis.

The Centre for Health Protection recommends vaccinations for children under two and adults over 65, as well as people of all ages if they are in a high-risk group, such as those with chronic diseases.

Infectious diseases expert Ivan Hung said as society returns to normal after Covid-19, viruses that cause respiratory infections will resurface.

“Because of the relaxation of the infection control measures, taking off masks and more travelling, it’s important not only to take the flu jab but also to update your COVID-19 vaccination. But more importantly, of course, is the pneumococcal vaccine,” he said.

Hung urged the government to look at providing the public with free pneumococcal jabs.

Fuente: RTHK English News. Disponible en https://bit.ly/40T5tuV

Comienza la Semana de Vacunación en las Américas: Ponte al día. #CadaVacunaCuenta

24 abr. La Organización Panamericana de la Salud (OPS) lanzó hoy oficialmente la Semana de Vacunación en las Américas (SVA), una iniciativa que busca movilizar acciones conjuntas para impulsar la inmunización de rutina en toda la región.

La campaña de la SVA de este año, que se celebra del 22 al 29 de abril, busca llegar a más de 92 millones de personas con más de 144 millones de dosis de diferentes vacunas en 45 países y territorios.

La iniciativa tiene lugar cuando el riesgo de brotes de enfermedades prevenibles por vacunación en las Américas está en su punto más alto en 30 años, con uno de cada cinco niños menores de un año sin protección completa contra múltiples enfermedades prevenibles con vacunas.

"La OPS está trabajando con los países para revitalizar los programas de inmunización y utilizar esta herramienta clave de salud pública en toda su capacidad para salvar vidas y proteger la salud de las personas en nuestra región", afirmó el Director de la OPS, Jarbas Barbosa, en el lanzamiento de la Semana de Vacunación de este año.

El doctor Barbosa intervino en una mesa redonda para lanzar oficialmente la Semana, en la que participaron representantes de gobierno, del mundo académico, de la sociedad civil y los jóvenes para debatir los retos, las oportunidades y las estrategias para impulsar la inmunización en la región.

Durante el acto, también pronunciaron mensajes en video Yazmin Colón de Cortizo, Primera Dama de Panamá; Nísia Trindade Lima, Ministra de Salud de Brasil; Jerome Xavier Walcott, Ministro de Salud y Bienestar de Barbados; Rochelle P. Walensky, Directora de los Centros para el Control y la Prevención de Enfermedades (CDC) de los Estados Unidos, y Chris Elias, Presidente de la División de Desarrollo Mundial de la Fundación Bill y Melinda Gates.

Aunque en la última década se ha observado un descenso de las tasas de vacunación en la región, la pandemia de COVID-19 exacerbó el problema debido a la interrupción de los servicios de salud y al aumento de la reticencia provocada por la desinformación, dijo el Director de la OPS.

"Sin embargo, la COVID-19 también nos dio una oportunidad, ya que permitió una fuerte cooperación entre la OPS y los países para desarrollar planes nacionales de inmunización, capacitar al personal de salud y reforzar las operaciones de cadena de frío", afirmó.

Con un compromiso político de alto nivel y la participación de las comunidades, el Director de la OPS señaló que "confía en que la región pueda recuperar su posición de liderazgo en inmunizaciones, como lo tuvo en el pasado".

También hizo un llamado a los países para que renueven los programas de inmunización aprovechando las innovaciones existentes. Esto incluye el uso de herramientas de georreferenciación para recopilar datos

sobre la vacunación que sirvan para asesorar intervenciones, herramientas para identificar rápidamente las deficiencias operativas, y el uso de datos y estrategias sociales y conductuales para hacer frente a las dudas sobre las vacunas.

En los últimos 20 años, la SVA ha sido la campaña más importante de los programas de inmunización de la región para llevar vacunas a las poblaciones. La iniciativa ha ayudado a llegar a casi 1.100 millones de personas en más de 40 países y ha apoyado el control de muchas enfermedades, junto con la eliminación de la poliomielitis, el sarampión, el síndrome de rubéola congénita, el tétanos neonatal, la hepatitis B y la viruela.

Este año, 24 países tienen previsto vacunar a más de 55 millones de personas con la vacuna COVID-19, tanto en dosis primarias como de refuerzo. Los países y territorios participantes también estiman vacunar contra la gripe a más de 84 millones de personas, con especial atención a los grupos de mayor riesgo, como las embarazadas, los adultos mayores y los trabajadores de salud.

Los esfuerzos para mantener a la región de las Américas libre de polio incluyen la vacunación de casi un millón de niños con vacunas antipoliomielíticas durante la Semana. En 1994, las Américas fueron declaradas libres de poliomielitis, pero la disminución de las tasas ha puesto a muchos países de la región en alto riesgo de un resurgimiento de esta enfermedad devastadora e intratable, pero prevenible con vacunación.

Además, los países se han comprometido a administrar más de 800.000 dosis de vacunas contra el sarampión y la rubéola. Estos esfuerzos apoyarán el objetivo regional de obtener de nuevo el estatus de eliminación. Otros objetivos son vacunar contra la difteria, el tétanos y la tos ferina a más de 3 millones de personas, incluidas mujeres embarazadas y niños.

Citas de los panelistas de alto nivel:

Yazmin Colón de Cortizo, Primera Dama de Panamá

Las vacunas existen desde hace siglos y han salvado millones de vida. Sin duda, son una de las historias de éxito más importantes de la medicina.

Las vacunas son también solidarias, porque no solo protegen a quienes se vacunan, sino que también contribuyen a salvaguardar a los miembros más vulnerables de la comunidad.

Panamá, referente en la región por sus altas tasas de inmunización, seguirá trabajando en asegurar una distribución equitativa de las vacunas, especialmente a las poblaciones menos favorecidas.

Nísia Trindade Lima, Ministra de Salud de Brasil

En 2015 teníamos una cobertura vacunal de 90% para algunas enfermedades, como sarampión y polio, grandes amenazas a la salud de las Américas. Hoy esa cobertura es del 70%.

Recuperar las coberturas de vacunación en Brasil es una prioridad del Ministerio de Salud, así como para la región y todo el mundo. Si un país no está protegido contra enfermedades prevenibles por vacunación, ningún país lo estará.

Jerome Xavier Walcott, Ministro de Salud y Bienestar de Barbados

En nuestra región del Caribe, más de 11.000 niños menores de un año -casi 1 de cada 10- no recibieron todas las dosis de vacunas en 2021, dejándolos expuestos a enfermedades como la poliomielitis, el tétanos,

el sarampión y la difteria, que ya habíamos eliminado de nuestras costas.

Pero hay logros notables que deben ser reconocidos. En el Caribe no latino, más de 3 millones de personas han sido completamente vacunadas contra el COVID-19 en los últimos dos años. En mi propio país, más del 55% de la población ha recibido al menos dos dosis de la vacuna.

Cuando nos unimos, incluso en tiempos difíciles, podemos lograr grandes cosas. Mi administración se compromete a invertir en todos los componentes del programa nacional de inmunización para garantizar que las personas de todas las edades tengan acceso a este servicio esencial.

Rochelle Walensky, Directora de los Centros para el Control y la Prevención de Enfermedades (CDC) de los Estados Unidos

Los programas de inmunización eficientes, eficaces y equitativos son nuestra primera línea de defensa contra los brotes epidémicos, y hoy tenemos mucho que celebrar. Celebramos que, a nivel regional, a finales de 2022 se habían administrado más de 2.000 millones de dosis de la vacuna COVID-19 en las Américas, y que casi el 71% de la población de América Latina y el Caribe había recibido al menos dos dosis de la vacuna.

Aun con estos éxitos, los servicios de vacunación en la región -como en otras partes del mundo- se enfrentan a una crisis inminente.

Para hacer frente al alarmante descenso de las inmunizaciones será necesario actuar a todos los niveles. Será necesario que todos nos asociemos para fortalecer este esfuerzo colectivo.

Chris Elias, presidente de la División de Desarrollo Mundial de la Fundación Bill y Melinda Gates

Los países de la región de la OPS llevan mucho tiempo siendo líderes mundiales en inmunización. Desde que la región lanzó su programa ampliado de inmunización en la década de 1970, los países han introducido más de 16 vacunas en sus calendarios nacionales de vacunación.

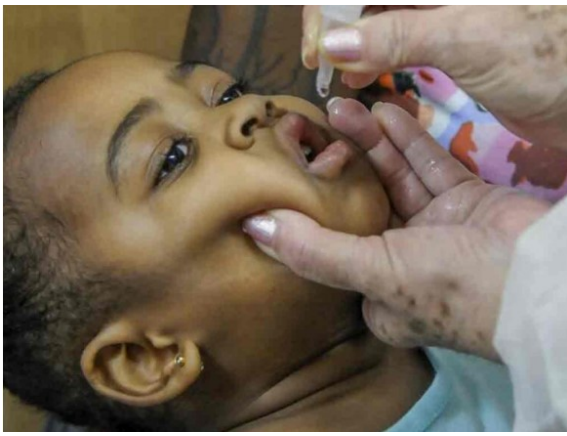
Estas vacunas que salvan vidas han protegido a generaciones de niños, dando a familias y comunidades enteras la oportunidad de llevar vidas sanas y productivas.

En 1994, las Américas se convirtieron en la primera región en erradicar el virus salvaje de la poliomielitis, un gran logro que sirvió de modelo para los esfuerzos de erradicación de la poliomielitis en todo el mundo.

Sabemos que 2023 es un año crítico para erradicar definitivamente la polio. Debemos recuperar las tasas de inmunización contra la poliomielitis en toda la región para prevenir nuevos casos.

Fuente: OPS Noticias. Disponible en https://bit.ly/3VqnlvZ

Cuba sets to start off second polio vaccination campaign



Apr 24. Cuba on Monday began the second stage of the 62nd National Oral Polio Vaccination Campaign for children who received one dose in the first phase from February 27 to March 4.

Dr. Lena López, head of the Immunization Program at the Public Health Ministry (MINSAP), informed this week -with a May 2-to-6 recovery period for those who cannot be vaccinated now- children aging one month and under three who received a first dose will be immunized.

She added that children aged nine who will receive their reactivation as

part of the national, regional and global strategy to keep polio eradicated will be included in this second stage.

López pointed out that Cuba, during the COVID-19 pandemic, drew up some strategies in order to keep vaccination coverage, and for this reason, Cuba is considered one of the few nations in the Americas with high polio coverage to keep children protected.

Poliomyelitis is an infectious-contagious disease that affects the central nervous system, mainly in children, and can cause muscular atrophy, paralysis, deformity and in some cases death.

As part of the immunization scheme, Cuba is currently applying 11 vaccines against 13 diseases, eight of them are of homegrown ones, according to Dr. Francisco Durán, MINSAP´s Epidemiology Director.

According to Liset Pérez, consultant of the PAHO/WHO office in Cuba, this initiative has allowed over one million people in 40 countries to get vaccinated against polio since 2003.

She pointed out that despite these efforts, the Americas are presently facing a crisis in terms of vaccination services.

Fuente: Prensa Latina. Disponible en https://bit.ly/3LNJC3W

Mpox outbreak was wake-up call for smallpox preparation, vaccine maker Bavarian Nordic says

Apr 25. The maker of the mpox vaccine is looking at ways to dramatically scale up its production capacity to prepare for a potential threat from smallpox.

Bavarian Nordic CEO Paul Chaplin said the rapid spread of mpox last year was a wake-up call for the company, which is based in Denmark.

“If it wasn’t mpox but it was smallpox, we are completely at the wrong scale,” Chaplin told CNBC in an interview.

“We’re looking at ways we can dramatically change the way we manufacture to increase our scale,” he said.

Mpox is in the same virus family as smallpox. Bavarian Nordic’s Jynneos vaccine is approved by the U.S. Food and Drug Administration to protect against both pathogens.

Previously known as monkeypox, the World Health Organization changed the name to mpox last year to reduce stigma.

Bavarian Nordic plans to simplify its production process so it can easily partner with other manufacturers and scale up production capacity to hundreds of millions of doses in the event of an emergency.

The company’s current production capacity is tens of millions of doses.

Smallpox was eradicated from the world in 1980 after a successful global vaccination campaign. Though the risk of the virus returning is low, some governments don’t want to take any chances.

“There are concerns either through reengineering or accidental outbreaks from containment, or other terrorist activities that it could be reintroduced,” Chaplin said of smallpox.

Smallpox was one of the most deadly diseases known to humankind. It had a mortality rate of up to 30% depending on the strain, according to the WHO.

In the wake of the mpox epidemic, the European Union's Health Emergency Preparedness and Response Authority and at least two European national governments have shown interest in stockpiling the Jynneos vaccine for use against smallpox, Chaplin said.

"Last year it was all about mpox. And now it's a mixture of mpox, but also more strategic stockpiling, including the smallpox indication," Chaplin said of discussions about future orders.

"The discussions have definitely intensified and increased," he said.

The U.S. has a long-standing stockpile of more than 100 million doses of an older smallpox vaccine, called ACAM2000.

Bavarian Nordic will finish delivering an order of 5 million Jynneos doses for the U.S government in the first half of this year. That contract was signed during the mpox outbreak.

Mpox as a warning

Once limited mostly to Africa, mpox spread suddenly and rapidly around the world last summer, taking public health authorities and Bavarian Nordic by surprise.

Unlike smallpox, mpox is rarely lethal, but the virus can be deadly for people with severely compromised immune systems. And the skin lesions associated with the disease can cause excruciating pain.

Bavarian Nordic only had several thousand finished doses of Jynneos on hand when the United Kingdom reported the first known case of the epidemic to the WHO last May.

"We sold the entire stock to the U.K. government, thinking that this was, as usual, an isolated case," Chaplin said.

Sporadic cases of mpox had occurred in countries outside Africa by travelers in the past. In 2003, there was a small outbreak in the U.S. that came from imported animals.

But when other countries in Europe started reporting cases of the virus last year, it became clear something unusual was happening, Chaplin said.

"The phone started ringing and we realized we were in a situation that we hadn't seen before," Chaplin said.

The virus has since exploded to more than 87,000 cases, with 120 deaths, across 110 countries, according to WHO data.

The global epidemic is the largest in the observed history of the virus. The U.S. had the worst outbreak with more than 30% of reported cases worldwide.

At that time, "We had no plans to manufacture Jynneos," Chaplin said. "We manufacture other vaccines and our order book was full, but we had to make the decision there and then, we need to change all our manufacturing plants and just manufacture Jynneos."

Bavarian Nordic distributed more than 4 million doses of Jynneos to over 70 countries from May to December of last year, Chaplin said.

More production capacity needed

Mpox since last year has spread primarily through sexual contact among gay and bisexual men.

But the rate of new cases of the virus has declined dramatically as vaccine distribution ramped up and

communities at risk had better information about what precautions to take.

Bavarian Nordic estimates that the potential demand for the mpox vaccine could reach tens of millions of doses.

The company's current annual production capacity is between 15 and 20 million doses, Chaplin said.

"It was contained in that risk population, it didn't spread," the CEO said of last year's outbreak. "If that's the way it manifests itself again, I think we can manage."

While mpox spreads mostly through close physical contact, smallpox infects people primarily through respiratory droplets, which means the virus has greater potential to spread widely.

And Bavarian Nordic's annual production capacity for Jynneos wouldn't be sufficient to deal with a wide-spread outbreak of smallpox, Chaplin said.

"We will need many, many more doses. We need to think about how we are better prepared," the CEO said.

Bavarian Nordic's current production capacity is constrained by the fact that the weakened virus used in the vaccine is produced from chicken cells that come from special hen eggs.

Bavarian Nordic has developed a permanent avian cell line that will simplify production and make it easier to bring in other manufacturers in an emergency, Chaplin said.

The company plans to introduce the new cell line in the next 18 months, he said.

Fuente: CNBC. Disponible en https://cnb.cx/40RsI8R

Pfizer raises awareness on why continued vaccine innovation matters

Apr 25. Pfizer, a global pharmaceutical and biotechnology company, has raised awareness on why vaccines and continued vaccine innovation matters today and in the future.

Each April, World Immunisation Week brings together people from around the world to highlight the importance of vaccines and how they protect people of all ages against many diseases, giving us the opportunity to pursue a life well-lived.

In a statement on Tuesday, the firm said the 2023 World Immunisation Week will mark the beginning of a year -long campaign with the theme "The Big Catch-up," representing a global push to vaccinate millions of children and return to pre-pandemic vaccination levels.

According to Pfizer, this year's campaign comes at a critical turning point for immunisation.

"After over two years of immunisation backsliding caused by COVID-19 pandemic disruptions, we must catch-up, restore and strengthen immunization services to reach the millions of people missing out on the life-saving benefits of vaccines and stop outbreaks from accelerating," the statement read.

"Every year during World Immunisation Week, Pfizer takes the time to celebrate the impact of vaccines, and this year is no exception even in the midst of heightened concern and apprehension around the status of vaccination programmes around the world."

Kodjo Soroh, medical director, Sub-Saharan Africa, Pfizer, said the global pharmaceutical company has a long history in vaccine research and development, including a pivotal role in the eradication of polio and smallpox.

"Through the development of innovative delivery systems and technologies (the term often used is "novel vaccines"), we've created innovations for preventing deadly bacterial infections," Soroh said.

"Vaccines underpin our global health security by preventing and controlling over 30 infectious diseases, reducing unnecessary hospitalisations and controlling infectious disease outbreaks.

"We should not forget that they are one of the world's most powerful and cost-effective public health tools available and have successfully helped to eradicate, eliminate, and manage many deadly infectious diseases. Smallpox has been eradicated and polio is nearly gone. Cervical cancer could become the first cancer to be eliminated.

"Vaccines also play a critical role in combatting antimicrobial resistance: they can reduce antibiotic use by preventing bacterial infections in the first place, such as with the pneumococcal and meningococcal vaccines, and can also prevent viral infections such as flu, which can provoke secondary infections requiring antibiotics.

"Today, more than at any time in history, people are benefiting from safe and effective vaccines to prevent infections and diseases. These injections have protected people of all ages, from newborns to seniors.

"However, our work is not done. Many viruses and bacteria still present a serious health risk, and so we continue to focus on research and development in new areas, with the goal of adding more approved vaccines to tackle pathogens.

"By getting vaccinated, you can protect yourself and also avoid spreading preventable diseases to other people in your community. Some people cannot get certain vaccines because they are too young or too old or they have a weakened immune system or other serious health condition. Those people are less likely to catch a preventable disease when you and others around them are vaccinated against it. Help protect yourself and the people you love by staying up to date on recommended vaccinations."

According to Pfizer, the global vaccination coverage figures are looking up, but they still mask huge inequalities that we cannot afford to ignore.

"To help protect as many people as possible from life-threatening illness, we're working to develop and distribute vaccines throughout the world. We've already seen that by channeling resources to the most promising public health opportunities, we can have an impact across all areas of life," the company noted.

Fuente: The Cable. Disponible en https://bit.ly/3oZy7NJ

El director general de Salud de Florida alteró el análisis de la vacuna contra la COVID-19 para sugerir un mayor riesgo para los hombres más jóvenes, según Politico

25 abr. El Dr. Joseph Ladapo, director general de Salud de Florida, alteró un análisis publicado por el Departamento de Salud de Florida el año pasado para sugerir que las vacunas ARNm contra la COVID-19 suponen un riesgo significativo para la salud de los hombres de entre 18 y 39 años, informó Politico este lunes.

Politico dijo que obtuvo un documento como parte de una solicitud de registros públicos que muestra los cambios de Ladapo en el análisis de ocho páginas. Los cambios eliminaron comentarios que decían que un vínculo con un ligero aumento del riesgo de muertes relacionadas con el corazón después de la vacunación contra la COVID-19 "ya no era significativo" para las vacunas multidosis y "hay poca sugerencia de cualquier efecto inmediatamente después de la vacunación". El documento muestra una línea añadida que dice que las vacunas de ARNm pueden estar impulsando un mayor riesgo de muerte relacionada con el corazón en los varones, especialmente aquellos entre 18 y 39 años.

La versión hecha pública en octubre de 2022 decía que la vacunación contra la COVID-19 estaba "asociada con un modesto aumento del riesgo de mortalidad relacionada con el corazón 28 días después de la vacunación", y dice que las vacunas pueden estar impulsando el riesgo, especialmente entre los hombres más jóvenes.

En una declaración a CNN, Ladapo dijo que es usual que una evaluación de los datos de vigilancia incluya revisiones, que él tiene "experiencia y formación" para tomar estas decisiones y que las revisiones eran apropiadas.

"Decir que 'eliminé un análisis' para un resultado particular es una negación implícita del hecho de que el público ha sido el destinatario de datos e interpretaciones sesgadas desde el comienzo de la campaña de la vacuna de ARNm contra la COVID-19", dijo. "Nunca he tenido miedo al desacuerdo con mis compañeros o con los medios de comunicación".

El Departamento de Salud de Florida respalda las recomendaciones de Ladapo sobre la vacunación para ciertos grupos de edad.

El análisis de Florida no fue revisado por pares ni publicado en una revista médica, pero fue publicado en línea por el Departamento de Salud de Florida y compartido en un comunicado de prensa. Basándose en ese análisis, Ladapo y el Departamento de Salud publicaron una guía en la que se desaconsejaban las vacunas de ARNm contra el covid-19 para los varones de 18 a 39 años, afirmando que el "riesgo anormalmente alto de muerte relacionada con el corazón entre los hombres de este grupo de edad" probablemente superaba los beneficios.

Los casos de miocarditis y pericarditis, inflamación del corazón y del revestimiento del corazón, son raros después de las vacunas de ARNm, aunque es más probable que ocurran entre hombres jóvenes. El riesgo de inflamación del corazón es mucho mayor por COVID-19 que por la vacunación.

Florida es un caso atípico en sus recomendaciones contra la vacuna para hombres jóvenes y niños sanos; está en desacuerdo con los Centros para el Control y la Prevención de Enfermedades de EE.UU. (CDC, por

sus siglas en inglés), las recomendaciones de otros estados y la división de Florida de la Academia Estadounidense de Pediatría.

Tras la realización de amplios ensayos clínicos, la Administración de Alimentos y Medicamentos de EE.UU. (FDA, por sus siglas en inglés) autorizó el uso de estas vacunas en personas a partir de los 6 meses, y los CDC siguen recomendándolas. Los expertos y las agencias gubernamentales afirman que los beneficios superan con creces los riesgos, ya que las vacunas reducen drásticamente el riesgo de hospitalización o muerte por COVID-19.

Ladapo tiene un historial de escepticismo sobre las vacunas y, desde que se convirtió en director general de Salud de Florida, apoyó el plan del gobernador Ron DeSantis de investigar "las irregularidades cometidas en Florida con respecto a las vacunas contra la COVID-19" por los fabricantes de vacunas y sus partidarios.

Al principio de la pandemia, DeSantis había defendido la necesidad de las vacunas, pero su mensaje cambió desde mediados de 2021, coincidiendo con el escepticismo de los conservadores que en ocasiones han abucheado al presidente Donald Trump por promocionar las vacunas contra la COVID-19.

Fuente: CNN. Disponible en https://cnn.it/3npT5F9

OMS lista a "Arcturus" como una variante del coronavirus de interés

25 abr. La Organización Mundial de la Salud (OMS) elevó el sublinaje de la variante de coronavirus ómicron XBB.1,16 de rápido crecimiento como una nueva variante de interés, y dice que está superando a la variante XBB.1,5 anteriormente dominante en muchas regiones.

XBB.1,16 es descendiente de la variante XBB recombinante, que es una combinación de dos sublinajes BA.2. En las redes sociales, la variante ha sido apodada Arcturus, como la estrella más brillante del hemisferio norte celeste.

Actualmente, es la variante dominante en la India, donde está causando una ola de enfermedades, en su mayoría leves. Pero se ha visto en otros 32 países, incluido Estados Unidos.

Esta rama está muy relacionada con la variante XBB.1,5. Tiene dos cambios genéticos que son diferentes, incluido uno en su proteína espiga, dijo Francois Balloux, director del Instituto de Genética de la UCL, en el University College London, en un comunicado. Balloux dijo que espera que le vaya bien en países que no tuvieron una ola considerable de casos causados por el sublinaje XBB.1,5, como China e India. Dice que no espera que tenga mucho impacto en el número de casos en el Reino Unido.

Estudios han demostrado que el hecho de que una variante cause una ola de casos en un país depende en gran medida de la inmunidad de la población, así como de la última variante que fue la causa dominante de infecciones allí.

La OMS dice que si bien esta variante parece estar propagándose más rápido que las variantes anteriores y escapa a la inmunidad, incluso en personas que han tenido recientemente la cepa XBB.1,5, no parece estar causando una enfermedad más grave. Por lo tanto, la OMS dice que el riesgo de esta variante es bajo.

La semana pasada en Estados Unidos, la subvariante XBB.1,16 representó aproximadamente el 10 % de los casos de COVID-19 a nivel nacional, frente al 6 % de la semana anterior. La variante XBB.1,5 sigue siendo la causa dominante de nuevas infecciones en Estados Unidos, según datos de los Centros para el Control y la Prevención de Enfermedades, CDC.

La OMS recomienda que los países compartan información sobre esta variante, y que realicen pruebas para ver qué tan bien la inmunidad en sus poblaciones se defenderá contra ella. También pide a los países que vigilen ciertos indicadores de la gravedad de la enfermedad a medida que se propaga este sublinaje.

Fuente: VOSTV. Disponible en https://bit.ly/44miAYn

Argentina aprueba el uso de una vacuna japonesa contra el dengue

26 abr. La Administración Nacional de Medicamentos, Alimentos y Tecnología médica de Argentina (ANMAT) informó que autorizó el uso de una vacuna japonesa contra el dengue este miércoles.

La entidad indicó que la vacuna, conocido como TAK-003 del laboratorio Takeda, está indicada para todas las personas mayores de 4 años, hayan o no tenido la enfermedad provocada por el mosquito.

La ANMAT informó que el laboratorio japonés empezará la producción para enviar el primer lote para su comercialización en Argentina.

En el comunicado, el organismo explicó que la aplicación de esta vacuna es en dos dosis, con un intervalo de tres meses.

La TAK-003 ya había sido aprobada en la Unión Europea, Reino Unido y Brasil, entre otros países.

Según el laboratorio japonés, los estudios demostraron que la vacuna tiene 80,2% de eficacia para prevenir los casos sintomáticos de dengue hasta 12 meses después de su aplicación.

Argentina atraviesa una ola de dengue. Según el Ministerio de Salud, hasta el 15 de abril se registraban más de 56.000 casos, y ya han alcanzado casi todas las provincias.

Fuente: CNN. Disponible en https://cnn.it/3Ltr07W

Unicef resalta programa de vacunación infantil en Cuba

26 abr. El Fondo de las Naciones Unidas para la Infancia (UNICEF) resaltó el programa de inmunización infantil en Cuba, en momentos en que los índices de vacunación en el mundo han sufrido el impacto negativo de la pandemia.

Alejandra Trossero, representante de UNICEF en la isla, destacó que mientras en los últimos años América Latina pasó de tener una de las tasas de inmunización más altas del planeta a la segunda más baja, Cuba sobrepasa el 95 % de cobertura y cuenta con un programa universal y gratuito que administra 11 vacunas.

En conferencia de prensa realizada este martes, Trossero ponderó a la isla como ejemplo de buenas prácticas en este sentido, y en particular durante la pandemia, a propósito de la reciente publicación por la Unicef del informe de este año sobre el estado mundial de la infancia, dedicado al tema de la vacunación.

La máxima representante de la organización internacional en Cuba resaltó la estrategia de inmunización infantil en la isla contra diversas enfermedades, a partir del sistema primario de salud, y la producción nacional de ocho de las vacunas que se administran a los niños cubanos.

En contraste, señaló que 1 de cada 4 menores de la región latinoamericana y caribeña carece de vacunas vitales, lo que significa el mayor descenso mundial en vacunación infantil en los últimos diez años. También, que más de 1,7 millones de infantes en el continente son cero dosis, es decir, nunca han recibido una vacuna.

Además, Trossero explicó sobre el respaldo de la Unicef al programa cubano de inmunización, como parte del cual el fondo global proporciona a la isla 88.000 dosis anuales de la vacuna PRS, contra la rubéola, el sarampión y la parotiditis, la cual no se produce en el país y cuya adquisición depende de donativos internacionales.

También, gracias al empleo de fondos globales de emergencia de la organización y al apoyo de donantes como el Gobierno de Japón, apoyó a Cuba para enfrentar la crisis sanitaria por la COVID-19 y su programa de inmunización contra esa enfermedad.

En particular, según respondió Trossero a una pregunta de OnCuba, la Unicef gestionó un financiamiento de unos 4 millones de dólares para fortalecer la cadena de frío de un grupo importante de policlínicos y hospitales de varias provincias cubanas, con el objetivo de preservar las vacunas.

La propia entidad, en un informe al respecto, informó que estas instalaciones de salud «recibieron, en total, 622 refrigeradores precalificados por la OMS, con sus controladores de temperatura integrados y 1.490 neveras de 1.5 litros y 465 neveras de 6 litros, todas con sus controladores de temperatura y 10.429 icepacks de 0.3, 0.4 y 0.6 litros».

Asimismo, de acuerdo con el informe, «el Instituto Finlay de Vacunas y el Centro de Ingeniería Genética y Biotecnología (CIGB) fueron beneficiados con 16 refrigeradores precalificados por la OMS, 100 neveras de 1.5 litros, 100 neveras de 6 litros, 800 icepacks de 0.3, 0.4 y 0.6 litros y dos freezers para el desarrollo de nuevos candidatos vacunales».

La Unicef colabora con las campañas de inmunización en Cuba desde la década de 1960. En la isla se aplican anualmente unas 4 800 000 dosis de vacunas contra 13 enfermedades, lo que ha posibilitado la erradicación definitiva de dolencias como la difteria, la rubeola, la poliomielitis y la tos ferina, y el control de otras.

Fuente: On Cuba News. Disponible en https://bit.ly/3LtEVuI

Making Vaccines More Accessible: Reflections from the 14th International Rotavirus Symposium

Apr 27. In March, we joined over 300 participants from 35 countries at the 14th International Rotavirus Symposium in Bali, Indonesia. The conference focused on the latest in vaccine manufacturing and results from new rotavirus vaccine trials, studies, and public health surveillance across the globe; enablers and barriers to vaccine introduction; vaccine policy and implementation; advances in immunology and virology; and vaccine efficacy and safety. Staff from the Ministry of Health and Family Welfare (MoHFW),

Government of India and JSI Private Limited (JSIPL) participated as follows:

"Post-Introduction Evaluation of Rotavirus Vaccine Roll-out in India" panel to discuss "Insights on Rotavirus disease burden and Rotavirus vaccine introduction in the region'" by Dr. Veena Dhawan, MoHFW.

"Introduction of rotavirus vaccine in India" presentation and panel discussion on "Rotavirus Vaccine Product Switch: Experience from the Universal Immunization Programme in India" by Ms. Seema Singh Koshal, JSIPL.

"Telephonic Assessment of Knowledge of District and Block Health Staff following Training on Rotavirus Vaccine Introduction in 12 states of India," and "Digitizing Tools for Post-Introduction Evaluation of Rotavirus Vaccine Introduction in India" poster presentations by Drs. Syed F. Quadri and Amanjot Kaur, JSIPL, respectively.

Throughout these and the other presentations, two main takeaways/components that came though.

Since the last symposium in 2018, there has been growth in vaccine manufacturing in India and production and distribution of new 'made in India' rotavirus vaccine products. These are now globally available in different formulations and presentations, and WHO has updated its position paper to include them. Many countries presented studies on their efficacy, cost-effectiveness, and safety. Continuing to expand India's production and distribution will increase rotavirus vaccine availability for people who previously lacked it.

Access to country research and experience is critical to planning rotavirus vaccine introduction. But why embark on this daunting task alone? Every country is unique and requires localized meticulous planning, but India's success with rotavirus vaccine introduction and switch from Rotasiil lyophilized to Rotasiil liquid and from Rotavac to Rotasiil products can inform others. Our Technical Support for Rotavirus Vaccine Introduction, funded by the Bill & Melinda Gates Foundation, has built the technical capacity of in 36 state and UT governments to oversee comprehensive and high-quality vaccine introduction. Other countries should use India's findings to plan rotavirus vaccine rollout and implementation.

JSIPL's technical assistance is helping to ensure all preparations are made to ensure the smooth introduction of the rotavirus vaccine and integration into routine immunization services in the 36 states. The rotavirus vaccine introduction was an opportunity to re-evaluate gaps in the system and plan ways to fill gaps that apply to all routine immunization service plans. Overall, the symposium reinforced that vaccine introduction is an opportunity to strengthen the routine immunization system, rather than burden it.

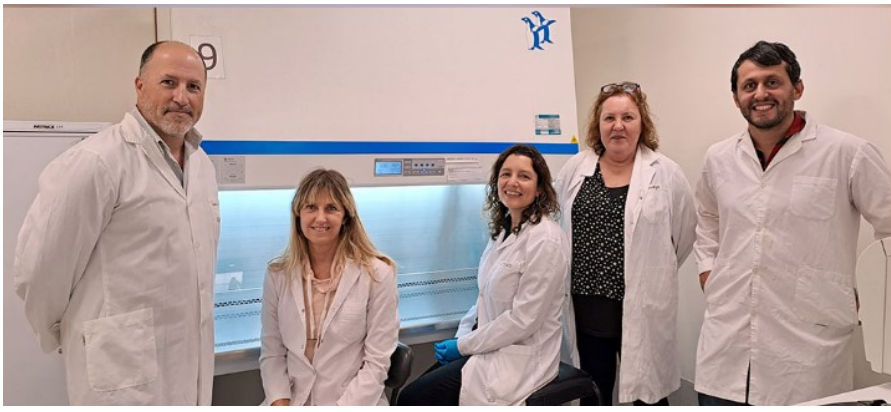
Fuente: JSI. Disponible en https://bit.ly/3HzHKZT

Especialistas del CONICET revelan las diferentes respuestas inmunológicas a la combinación de vacunas contra la COVID-19

27 abr. Investigadores e investigadoras del CONICET en el Centro de Investigaciones en Bioquímica Clínica e Inmunología (CIBICI, CONICET-UNC), con apoyo del Instituto de Inmunología Experimental de la Universidad de Zurich (Suiza), demostraron que distintas combinaciones y órdenes de aplicación de vacunas contra el SARS-CoV-2 producen diferentes perfiles de respuesta inmunológica. El estudio, publicado esta semana en la prestigiosa revista *Nature Immunology*, confirmó que los esquemas combinados de vacunación son muy eficientes en términos de efectos adversos y en su capacidad para inducir una respuesta inmune celular y humoral.

Este trabajo constituye el análisis más completo realizado hasta la fecha sobre protocolos de vacunación. Está basado en la cohorte de la ciudad de Córdoba del "Estudio Colaborativo para la Evaluación de Esquemas Heterólogos de Vacunación contra COVID-19", un ensayo clínico coordinado por el Ministerio de Salud de la Nación en el que participaron también Buenos Aires, La Rioja y San Luis.

En articulación con el Ministerio de Salud de la provincia de Córdoba, se extrajeron alrededor de 800 muestras de sangre en dos tiempos: justo antes de aplicar la segunda dosis de la vacuna y un mes después. Tras un laborioso pre-procesamiento en el CIBICI (cuya sede se encuentra en la Facultad de Ciencias Químicas de la UNC), los especialistas analizaron múltiples parámetros de la inmunidad humoral (niveles de anticuerpos) y celular (linfocitos T y B) desarrollada tras la aplicación de cinco vacunas en 16 combinaciones distintas. A su vez, se recabó información sobre efectos adversos declarados por los voluntarios del estudio.



Gabriel Morón, Laura Cervi, Eva Acosta Rodríguez, Belkys Maletto y Nicolás Núñez son algunos de los autores del trabajo. Foto: CONICET Córdoba

El equipo de trabajo, liderado por Mariana Maccioni, Belkys Maletto, Eva Acosta Rodríguez, Laura Cervi, Gabriel Morón y Nicolás Núñez, coincide en destacar la relevancia sanitaria y académica de los resultados obtenidos. "La importancia es tanto en un sentido retrospectivo de la toma de decisiones sanitarias a partir de evidencia, como prospectivo para enfermedades más allá de la COVID-19. Es probable que, a raíz de las experiencias de muchos países, a partir de ahora primen los esquemas heterólogos en vacunación, porque muestran una respuesta superior. Puede decirse que, para la opinión pública, 'la Covid ya pasó'; pero el conocimiento acerca de qué alternativa es mejor, qué vacuna dar primero y cómo combinar la segunda dosis, tiene aplicación en otras infecciones virales y hasta en cáncer", asegura Acosta Rodríguez.

Desde el punto de vista científico, los resultados obtenidos implican un conocimiento muy detallado sobre el comportamiento de las vacunas dentro del sistema inmunológico. "Aún hoy, lo que se sabe sobre vacunas sigue siendo netamente empírico. Se observa que una vacuna funciona, pero no se conocen los mecanismos, el porqué. Nosotros realizamos un estudio en profundidad sobre la complejidad y diversidad de las poblaciones de células inmunitarias. Estos avances quizás posibiliten el desarrollo de vacunas con mejor efecto, modificando ciertos puntos clave", declara Morón.

"Ningún estudio anterior analizó esta cantidad de combinaciones en las mismas personas, con la misma metodología, procesando las muestras en simultáneo en un mismo laboratorio. Este enfoque permite garantizar la robustez estadística de las comparaciones realizadas y las diferencias detectadas", apunta Maletto.

Inmunidad celular: la segunda defensa

Ante el ataque de un agente externo, el cuerpo humano tiene diferentes estrategias de defensa. "Los anticuerpos son moléculas que se unen al virus para bloquear su avance, como un cepo en la rueda de un auto que impide que se traslade por la ciudad. Unido a un anticuerpo, el virus no puede ingresar a la célula

del tejido epitelial. Esa protección no siempre es óptima y algunos virus logran invadir las células (en el caso de SARS-CoV-2, mediante la proteína *spike*). En este punto, se requiere otra arma para frenar la replicación del virus: los linfocitos T, que distinguen las células infectadas de las que no lo están y las destruyen. Además, el mayor daño que produce el coronavirus es al infectar las células y generar una cascada inflamatoria. Entonces, la inmunidad celular toma un rol muy importante no solo para prevenir la infección, sino para detener el avance del virus y evitar una enfermedad severa o la muerte", explica Morón.

Sin embargo, esto recién terminó por entenderse con la aparición de la variante Ómicron, a finales de 2021. Acosta Rodriguez ilustra que: "Si una persona desarrolla anticuerpos para una variante, estos no tienen tanto poder de protección frente a nuevas variantes virales con modificaciones en la proteína spike; pero la inmunidad celular es mucho menos susceptible. De allí la importancia de medirla y poder determinar que, aunque ciertas combinaciones de vacunas generen anticuerpos que puedan dejar de ser eficientes, la inmunidad celular va a seguir funcionando".

Gracias al apoyo del Ministerio de Salud de la Nación y de la Provincia, Córdoba se estableció como punto de estudio de la respuesta inmunológica celular, además de la respuesta humoral que se estaba investigando en los demás distritos del Estudio Colaborativo. Aunque los análisis de inmunidad celular son costosos e implican una demanda técnica y logística muy alta, los especialistas del CIBICI contaban con la experiencia y capacidades para llevarlo adelante.

"Todo este trabajo permitió conformar un biobanco de muestras de suero y células inmunitarias, que actualmente se encuentra almacenado en el CIBICI para futuros estudios. Aquí realizamos la puesta a punto de algunos estudios de inmunidad celular, pero la disponibilidad de reactivos limitaba el avance en esa vía. Afortunadamente, la colaboración con Nicolás Nuñez, quien estaba realizando una estancia en la Universidad de Zurich, posibilitó el traslado y análisis de las muestras con tecnología de punta en citometría espectral".

Estos resultados fueron integrados y analizados computacionalmente con los de anticuerpos neutralizantes, aportados por el Instituto de Virología "Dr. J.M. Vanella" (FCM, UNC), y de anticuerpos específicos, por el Laboratorio Central del Ministerio de Salud de la provincia de Córdoba. Así, el grupo multidisciplinario de especialistas pudo armar el rompecabezas de las múltiples respuestas inmunes desencadenadas por la combinación de vacunas.

El orden de los factores sí altera el producto

Uno de los principales resultados del estudio es que la respuesta inmune no sólo está determinada por el tipo de vacuna, sino por el orden de aplicación. "Analizando once parámetros en total, pudimos clasificar las 16 combinaciones de vacunas en sólo cuatro 'perfiles' o 'firmas inmunológicas' distintas, según las respuestas diferenciales que producen dentro del universo de linfocitos T y B. Por ejemplo, si se coloca Moderna como segunda dosis, se observan altos niveles de anticuerpos, importante respuesta de células T y algunos marcadores característicos en células B, sin importar cuál haya sido la primera vacuna. El uso de la vacuna de Sinopharm como segunda dosis, por otra parte, genera el efecto contrario", profundiza Nuñez.

"Lo que rescatamos es que tener una primera dosis de Sinopharm -una vacuna basada en una tecnología 'antigua' que fue muy denostada-, combinada con la vacuna de ARN mensajero (Moderna), es el esquema que da la mejor respuesta inmunológica", comenta Maletto. En ese sentido, Acosta Rodriguez señala que la tecnología del virus inactivado de la vacuna Sinopharm es aplicada desde hace muchos años para otras

infecciones y que es la que genera menos efectos adversos, razón por la cual en la Argentina fue elegida para comenzar a inmunizar menores de edad.

Capacidades locales con amplia proyección

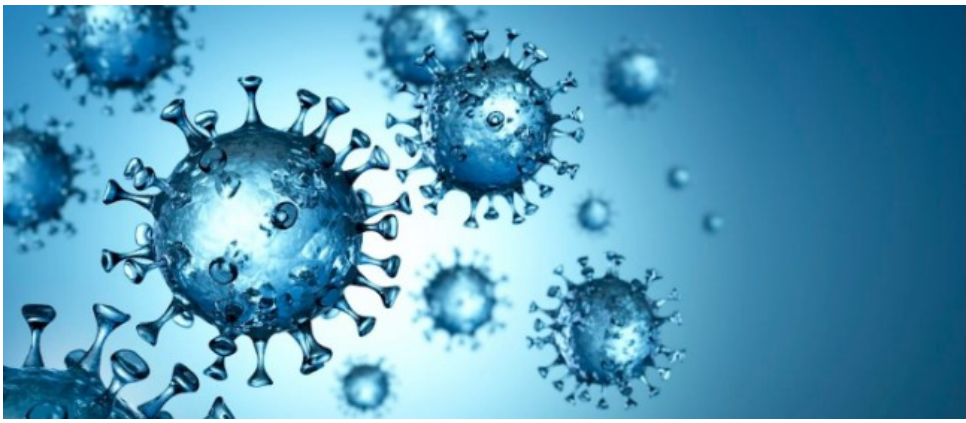
Desde el diseño del ensayo clínico, pasando por la logística de la extracción y el procesamiento de un gran volumen de muestras hasta su traslado a Suiza, esta investigación representó un gran desafío para el equipo. Acosta Rodríguez celebra que: "Cuando hay interés y compromiso académico-científico, de las instituciones y de los organismos gubernamentales, se pueden llevar adelante trabajos de alta envergadura. Las capacidades tecnocientíficas que construimos en este proyecto pueden ser el punto de partida para desarrollar una plataforma de transferencia en inmunidad celular, que se aplique a otras infecciones, alergias y enfermedades autoinmunes".

Por su parte, Maccioni manifiesta: "Este estudio nos permitió consolidar una red nacional e internacional de inmunólogos con capacidad para dar respuesta en el tiempo requerido a un problema sanitario grave. A futuro, se podría pensar en armar un equipo interdisciplinario similar, que involucre epidemiólogos, inmunólogos, bioinformáticos, así como diferentes instituciones de ciencia y de salud pública, para generar ensayos clínicos similares en otras patologías o situaciones de interés sanitario, regionales o no".

A partir de esta experiencia, el grupo de investigación del CIBICI brinda servicios de cuantificación de mediadores solubles de interés inmunológico (ST4126), y de cuantificación y caracterización fenotípica de poblaciones de linfocitos T CD4+ y CD8+ (ST4124), a través de Servicios Tecnológicos de Alto Nivel (STAN).

Fuente: CONICET. Disponible en https://bit.ly/3NP2y3N

La COVID persiste, pero sale de la fase de emergencia: OMS



28 abr. El virus causante de la COVID-19 ha llegado para quedarse, pero el mundo está empezando a salir de la fase de emergencia de la pandemia, declaró el miércoles el jefe de la Organización Mundial de la Salud (OMS).

Tedros Adhanom Ghebreyesus dijo en una sesión informativa que la agencia de la ONU publicará la próxima semana una guía para los países sobre cómo pasar de una respuesta de emergencia a la gestión a largo plazo de la COVID-19.

"Tenemos la esperanza de que en algún momento de este año podamos declarar el fin de la COVID-19 como emergencia de salud pública de importancia internacional", dijo Tedros.

"Pero este virus está aquí para quedarse y todos los países tendrán que aprender a gestionarlo junto con otras enfermedades infecciosas", declaró.

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

Códigos del éxito de la Inmunología cubana

29 abr. Desde el año 2005 y con la aprobación de la Unión Internacional de las Sociedades Inmunológicas, cada 29 de abril se celebra el Día Internacional de la Inmunología.

"Cada 29 de abril se celebra el Día Internacional de la Inmunología, en nuestro país la conmemoración es asumida por la Sociedad Cubana de Inmunología, la cual cuenta hoy con casi 700 miembros."

El objetivo de instaurar la efeméride consistió en divulgar y socializar la importancia creciente de esta especialidad devenida, en las últimas décadas, herramienta primordial a la hora de emprender proyectos de investigaciones biomédicas de primer nivel, cuyos resultados aportan nuevos conocimientos y generan productos y tecnologías eficaces e innovadoras.

La conmemoración en nuestro país es asumida por la Sociedad Cubana de Inmunología, la cual cuenta hoy con casi 700 miembros y tiene 11 capítulos provinciales, con la participación del Grupo nacional de la especialidad, el Instituto de Hematología e Inmunología, el Instituto Superior de Ciencias Médicas de La Habana, la Universidad de La Habana e instituciones del Grupo Empresarial BioCubaFarma.

Para conocer el estado de la especialidad en el mundo, los avances de Cuba y otros tópicos de interés, Granma conversó con la doctora en Ciencias Ana Beatriz Pérez Díaz, investigadora del Instituto de Medicina Tropical Pedro Kourí (IPK), y presidenta de la Sociedad Cubana de Inmunología, desde 2019.

–¿Qué importancia tiene la Inmunología en la actualidad?

–La Inmunología es una rama de las ciencias biomédicas encargadas de estudiar los órganos, tejidos, células y moléculas del cuerpo humano que garantizan el funcionamiento de los mecanismos encargados de defenderlo del ataque de agentes agresores externos o internos.

«Según la Organización Mundial de la Salud, la disciplina se ocupa del estudio, diagnóstico, tratamiento y prevención de pacientes con enfermedades del sistema inmunológico. Pero también es una especialidad transdisciplinaria, pues su campo de aplicaciones abarca, además de las alergias, las enfermedades autoinmunes, las inmunodeficiencias, las enfermedades infecciosas, el cáncer y otras.

«Resulta importante recalcar que la Inmunología es una especialidad costosa, casi exclusiva de países desarrollados, y los principales descubrimientos casi siempre pertenecen a esas naciones, que tienen los recursos financieros y la alta tecnología requerida. Allí se crean las regulaciones para la aprobación de patentes y las leyes que rigen la comercialización de los productos».

Autora de publicaciones, y merecedora de 13 premios anuales de la Academia de Ciencias de Cuba y de diez premios del concurso anual de la Salud, incluyendo el premio a Mejor tesis doctoral, la también profesora titular Ana Beatriz Pérez recalcó que Cuba ha logrado situarse en un lugar relevante en la investigación y desarrollo dentro de la Inmunología. Incluso, en algunos temas alcanza un nivel similar al de los países de mayor adelanto en la especialidad.

Ello, por supuesto, obedece al desarrollo biotecnológico impulsado estratégicamente de forma genial por Fidel. Baste mencionar las vacunas logradas contra infecciones virales como la hepatitis b y el sars-cov-2, o para enfrentar infecciones bacterianas como la meningitis meningocócica tipo b, o el haephofilus influenzae tipo b, por mencionar algunos ejemplos, aseveró la doctora Pérez Díaz.

«Hoy el país dispone de más de diez productos biotecnológicos en uso contra enfermedades inmunológicas, infecciosas y crónicas no transmisibles, mientras que para la inmunoterapia del cáncer hay siete productos registrados y más de 25 en investigación, que incluyen vacunas y anticuerpos monoclonales».

Dijo, además, que, para el diagnóstico de diversas enfermedades, se han producido más de 35 estuches con principio inmunológico. Todo esto se aplica en el aseguramiento de programas nacionales de atención y control de dolencias transmisibles, infecciosas y también de las crónicas no transmisibles, entre ellas las cardiovasculares, endocrino-metabólicas, neurológicas, inflamatorias y degenerativas.

La también especialista de Segundo Grado en Inmunología se refirió, de igual modo, a los resultados de Cuba en la terapia regenerativa con células madres y proteínas bioactivas, empleadas para regenerar tejidos dañados en el tratamiento de diferentes enfermedades y lesiones, junto al desarrollo de los estudios de histocompatibilidad o compatibilidad de tejidos, lo cual favorece una mejor selección del donante para el trasplante renal y hematopoyético.

Es oportuno resaltar que el mayor éxito de la Inmunología nacional en los últimos tiempos consistió en lograr cinco formulaciones vacunales en tiempo récord contra el sars-cov-2, que mostraron su eficacia y contribuyeron en gran medida al control de la pandemia de la covid-19 en Cuba, recalcó la doctora Pérez Díaz.

Precisó que el aporte de la Inmunología cubana también resultó decisivo en el tratamiento de la infección a través del reposicionamiento de productos biotecnológicos, básicamente interferones, anticuerpos monoclonales y péptidos de acción antinflamatoria, utilizados en los pacientes graves y críticos, y en la modulación de la respuesta inmune con productos como la Biomodulina-t en personas vulnerables, la transferencia de anticuerpos específicos, mediante la transfusión de plasma, y el uso de la terapia con células madres, en pacientes convalecientes de la covid-19, aquejados de secuelas pulmonares.

–¿Cómo se avizora el horizonte de la Inmunología en las próximas décadas?

–Se impone el desarrollo de vacunas más eficaces frente a enfermedades infecciosas que aún azotan al mundo. Pero las enfermedades no transmisibles son el principal problema de salud a nivel mundial, y en estas también la Inmunología es central, y particularmente el cáncer y la inmunosenescencia, que viene aparejada al envejecimiento de las poblaciones, son focos importantes de las investigaciones en esta esfera de la ciencia hoy y para el futuro.

«El sistema inmunológico humano es muy complejo, y descifrar sus códigos también resulta sumamente difícil. La introducción de tecnologías de la Inteligencia Artificial a la Medicina, los algoritmos de inteligencia genética, las metodologías inmunológicas inteligentes, van camino a facilitar esos estudios.

«La búsqueda de biomarcadores para enfermedades como el cáncer, y otras dolencias, que posibiliten definir la predisposición a padecerlas, a partir de la modulación de la respuesta inmune en aquellas en los que media la inflamación aguda o crónica, y la terapia génica para tratar los defectos congénitos de la inmunidad o para «reprogramar» nuestras células de la respuesta inmune, frente a un tumor, una infección crónica o en una enfermedad autoinmune, son algunas de las tendencias investigativas que van aflorando en el quehacer actual de la especialidad en el mundo y Cuba también ya incursiona en ellas.

Fuente: Granma. Disponible en https://bit.ly/3LPMXj1

Soberana 02 con mayor alcance

30 abr. Las evidencias clínicas que respaldan la seguridad e inmunogenicidad* de la vacuna cubana Soberana 02 posibilitaron que el Centro para el Control Estatal de Medicamentos, Equipos y Dispositivos Médicos (CECMED) aprobara la extensión del autorizo de uso en emergencia como dosis de refuerzo en personas inmunizadas con diferentes vacunas contra la COVID-19.

Desarrollada por el Instituto Finlay de Vacunas (IFV), de Biocubafarma, el alcance de Soberana 02 se incrementa al intensificar la protección contra el tétanos, debido a que es una vacuna conjugada que utiliza el toxoide tetánico como proteína portadora.

Su nombre técnico es FINLAY- FR-2 anti SARS-CoV-2, y ya desde principios de este año se habilitó su uso de refuerzo para la inmunización anti-COVID-19, con independencia de cualquier esquema de vacunación precedente, ya sean las tres dosis de Abdala (desarrollada por el Centro de Ingeniería Genética y Biotecnología), las dos de Soberana 02 añadidas a una de Soberana Plus, o con otras vacunas administradas en el exterior.

Por los resultados de Soberana 02 cuando se encontraba aún en su etapa de ensayos clínicos fase 3, y por su combinación heteróloga (a partir de la plataforma de vacunas existentes en el país) con Soberana Plus, la prestigiosa revista *Lancet Regional Health - Americas* publicó dichos resultados a manera de aval de su efectividad.

* Se trata de crear un efecto deseado para que el organismo se defienda ante virus o bacterias.

Fuente: Vanguardia. Disponible en https://bit.ly/40SYaTX

VacciMonitor es una revista dedicada a la vacunología y temas afines como Inmunología, Adyuvantes, Infectología, Microbiología, Epidemiología, Validación, Aspectos regulatorios, entre otros. Arbitrada, de acceso abierto y bajo la Licencia *Creative Commons* está indexada en:

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20230421:20230430 as the publication 37 date records*

1.20230127808AD7-VECTORED VACCINE FOR PREVENTING SARS- COV-2 INFECTION
US - 27.04.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 17598659 Solicitante GUANGZHOU N BIOMED LTD. Inventor/a Ling Chen
Disclosed is an Ad7-vectored vaccine for preventing SARS-CoV-2 infection, which is an adenovirus vectored vaccine, comprising an Ad7 vector loaded with a nucleic acid sequence shown in SEQ ID NO: 1. Some embodiments of the disclosure have good safety and are convenient to use. Experiments have shown that the vaccine is capable of producing more S protein in human cells, which is expected to be developed as a vaccine for preventing SARS-CoV-2 infection. Some embodiments of the disclosure may be used in combination with other vaccines, and may also be used as therapeutic vaccines for COVID-19. When a patient is vaccinated with the Ad7-vectored vaccine of the present disclosure at the initial stage of infection, the vaccine can quickly induces immune response in the human body, thereby achieving a therapeutic effect.

2.4170023VERFAHREN ZUR MASSENPRODUKTION VON VACCINIA-VIRUS UNTER VERWENDUNG VON SUSPENSIONSZELLEN
EP - 26.04.2023
Clasificación Internacional C12N 7/00 Nº de solicitud 21829516 Solicitante KOLON LIFE SCIENCE INC Inventor/a KIM SUNG JIN
The present invention relates to a method for mass-producing vaccinia virus using suspended cells. Although methods for producing vaccinia virus using adherent cells in the related art have limitations that are not suitable for mass production of viruses due to the characteristics of adherent cells, the present inventors have developed a technique capable of producing viruses even in a bioreactor using a low appropriate cell number, MOI, culture FBS concentration, and a medium while using suspended cells, and it was also confirmed that the present invention has high virus productivity similar to that in the case of using adherent cells. Accordingly, the technique of producing vaccinia virus using suspended cells according to the present invention enables mass production of vaccinia virus with high productivity. Since it is possible to reduce production costs and time, manpower, and the like using suspended cells, it is expected that the technique will be effectively used in clinical and commercial production fields that require mass production of vaccinia virus.

3.WO/2023/067002IN VITRO POTENCY ASSAY FOR PROTEIN-BASED MENINGOCOCCAL VACCINES USING MONOCLONAL ANTIBODIES
WO - 27.04.2023
Clasificación Internacional C07K 16/12 Nº de solicitud PCT/EP2022/079103 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a MALZONE, Carmine
The invention uses ELISA or similar assays for analysing a meningococcal vaccine. The assay uses antibodies which bind to meningococcal proteins within the vaccine, and in particular monoclonal antibodies which are bactericidal for meningococcus and/or which recognise conformational epitopes within the meningococcal proteins. By performing the assay on a series of dilutions of a test vaccine, and by comparing the results with those obtained using a reference vaccine of known potency, it is possible to determine the relative potency of the test vaccine. This value can be used as a parameter for determining whether a manufactured batch of a vaccine is suitable for release to the public, or whether it has experienced a production failure and so should not be used.

4.4168428SCHWEINEINFLUENZA-A-VIRUS-IMPFSTOFF MIT EINEM NUKLEINSÄUREKONSTRUKT ZUR CODIERUNG VON ANTIGENEN SPEZIFISCHER VIRUSLINIEN
EP - 26.04.2023
Clasificación Internacional C07K 14/11 Nº de solicitud 21733126 Solicitante INTERVET INT BV Inventor/a MOGLER MARK A
The present invention relates to a nucleic acid construct that encodes a first Swine influenza A (IAV- S) hemagglutinin (HA) antigen of the Scot/94 lineage from strain A/swine/Italy/3033-1/2015 (H1N2) or an amino acid sequence having at least 85% sequence identity thereof and a second Swine influenza A (IAV-S) hemagglutinin (HA) antigen of the Eurasian avian-like (EA) lineage from strain A/swine/Italy/28762-3/2013 (H1N1) or an amino acid sequence having at least 90% sequence identity thereof, and a nucleic acid construct that encodes a first IAV-S HA antigen of the Gent/84 lineage from strain A/swine/Italy/240849/2015 (H3N2) or an amino acid sequence having at least 95% sequence identity thereof and a second IAV-S HA antigen of pandemic09 (pdm09) lineage from strain A/swine/England/373/2010 (H1N1) or an amino acid sequence having at least 95% sequence identity thereof. In other embodiments, the present invention relates to RNA replicon particles comprising one or both nucleic acid constructs, an immunogenic composition, such as a vaccine, which may be used

against influenza A virus infection, and comprising the replicon particles. Further provided are methods of making the vaccine and use of the vaccine.

5.20230129062MONOVALENT VACCINE FORMULATION AND A METHOD FOR PREPARATION THEREOF
US - 27.04.2023
Clasificación Internacional A61K 39/02 Nº de solicitud 17878834 Solicitante AIMST UNIVERSITY Inventor/a Guruswamy PRABHAKARAN
The present invention discloses a vaccine formulation in accordance with an illustrative embodiment. The formulation including a live attenuated cholera vaccine strain VCUSM14P; a vaccine medium having starch, cellulose, dextrose, and yeast extract; and a phosphate buffer saline.

6.4168041SCHWEINEINFLUENZA-A-VIRUS-IMPFSTOFF MIT EINEM NUKLEINSÄUREKONSTRUKT MIT EINER SPEZIFISCHEN GENORDNUNG
EP - 26.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21732914 Solicitante INTERVET INT BV Inventor/a MOGLER MARK A
The present invention relates to a nucleic acid construct that encodes, in this order, a first Swine influenza A (IAV-S) hemagglutinin (HA) antigen of the Scot/94 lineage and a second Swine influenza A (IAV-S) hemagglutinin (HA) antigen of the Eurasian avian-like (EA) lineage, and a nucleic acid construct that encodes, in this order, a first IAV-S HA antigen of the Gent/84 lineage and a second IAV-S HA antigen of pandemic09 (pdm09) lineage. In other embodiments, the present invention relates to RNA replicon particles comprising one or both nucleic acid constructs, an immunogenic composition, such as a vaccine, which may be used against influenza A virus infections, and comprising the replicon particles. Further provided are methods of making the vaccine and use of the vaccine.

7.4168044SCHWEINEINFLUENZA-A-VIRUS-IMPFSTOFF MIT ZWEI VERSCHIEDENEN RNA-REPLIKONPARTIKELN
EP - 26.04.2023
Clasificación Internacional A61K 39/145 Nº de solicitud 21733127 Solicitante INTERVET INT BV Inventor/a MOGLER MARK A
The present invention relates to an immunogenic composition comprising first and second RNA replicon particles. The first RNA replicon particle comprises a nucleic acid construct comprising first and second nucleic acid sequences encoding first and second hemagglutinin (HA) antigens of a Swine influenza A virus (IAV-S). The first HA antigen is a of the A/swine/Gent/1/1984-like H3N2 (Gent/84) lineage, and the second HA antigen is of the A(H1N1)pdm09 (pdm09) lineage. The second RNA replicon particle comprises a nucleic acid construct comprising third and fourth nucleic acid sequences encoding third and fourth HA antigens of IAV-S. The third HA antigen is of the A/swine/Scotland/410440/1994-like $H1_{hu}N2$ (Scot/94) lineage, and the fourth HA antigen is of the Eurasian avian-like $H1_{av}N1$ (EA) lineage. In other embodiments, the present invention relates to a vaccine, which may be used against influenza A virus infection, and comprising the immunogenic composition. Further provided are methods of making the vaccine and use of the vaccine.

8.WO/2023/069551MULTI-EPITOPE MRNA SARS-COV-2 VACCINE FOR BOOSTING IMMUNITY THROUGH THE ACTIVATION OF CD4 AND CD8 T CELLS AS WELL AS B LYMPHOCYTES
WO - 27.04.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/047175 Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIA Inventor/a NEL, Andre E.
In various embodiments immunogenic nanoparticles are provided that are capable of raising an immune response directed against SARS-CoV-2. In certain embodiments the immunogenic nanoparticles

comprise mRNA multi-epitope vaccines that can be used in combination with or independent of other covid-19 vaccines (e.g., the spike protein mRNA vaccine(s)) to invoke a strong CD8+or CD4+ T-cell as well as neutralizing antibody producing B-cell responses. In certain embodiments this vaccine is based on the rational combination of well-conserved T- and B-cell epitopes identified COVID-19 and viral variants.

9.4169529LIPOPOLYSACCHARID (LPS)-DEFIZIENTE MULTIVALENTE ACINETOBACTER-BAUMANNII-IMPFSTOFFE
EP - 26.04.2023
Clasificación Internacional A61K 39/108 Nº de solicitud 21382943 Solicitante VAXDYN S L Inventor/a INFANTE VIÑOLO JUAN JOSÉ
Lipopolysaccharide (LPS) deficient Acinetobacter baumannii multivalent vaccine. The invention refers to a composition comprising inactivated cells deficient in LPS from the genus Acinetobacter and/or outer membrane vesicles form the same and their use for the manufacture of a medicament, preferably a vaccine, for the prevention of diseases caused by K. pneumoniae and/or P. aeruginosa and optionally A baumannii.

10.WO/2023/069498MRNA VACCINE COMPOSITION
WO - 27.04.2023
Clasificación Internacional A61K 9/127 Nº de solicitud PCT/US2022/047107 Solicitante SENDA BIOSCIENCES, INC. Inventor/a MOSAHEB, Munir
Disclosed herein are nucleic acid vaccine compositions including one or more polynucleotides encoding one or more antigenic polypeptide, formulated within a lipid reconstructed plant messenger packs (LPMPs) comprising natural lipids and an ionizable lipid. The disclosure also includes a method for making a nucleic acid vaccine, comprising reconstituting a film comprising purified PMP lipids in the presence of an ionizable lipid to produce a LPMP comprising the ionizable lipid, and loading into the LPMPs with one or more polynucleotides encoding one or more antigenic polypeptides.

11.WO/2023/066496CORONAVIRUS VACCINE
WO - 27.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2021/079285 Solicitante BIONTECH SE Inventor/a SAHIN, Ugur
This disclosure relates to the field of RNA to prevent or treat coronavirus infection. In particular, the present disclosure relates to methods and agents for vaccination against coronavirus infection and inducing effective coronavirus antigen-specific immune responses such as antibody and/or T cell responses. Specifically, in one embodiment, the present disclosure relates to methods comprising administering to a subject RNA encoding a peptide or protein comprising an epitope of SARS-CoV-2 spike protein (S protein) for inducing an immune response against coronavirus S protein, in particular S protein of SARS-CoV-2, in the subject, i.e., vaccine RNA encoding vaccine antigen.

12.WO/2023/067031ASSAY
WO - 27.04.2023
Clasificación Internacional G01N 33/537 Nº de solicitud PCT/EP2022/079144 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a BACCONI, Marta
This invention provides a multiplex binding assay for analysing a meningococcal vaccine and assessing in vitro relative potency of the same (IVRP). The invention also provides monoclonal antibodies which bind to meningococcal proteins within the vaccine, and in particular monoclonal antibodies which are bactericidal for meningococcus and/or which recognise conformational epitopes within the meningococcal proteins.

13.4169527ADJUVANS MIT TLR4-AGONISTENAKTIVITÄT
EP - 26.04.2023

Clasificación Internacional A61K 39/00 Nº de solicitud 21829834 Solicitante SUMITOMO PHARMA CO LTD Inventor/a BAN HITOSHI
The present invention relates to a compound useful as vaccine adjuvant, a manufacturing process thereof, a pharmaceutical composition comprising the compound, and use of the compound as vaccine adjuvant.

14.20230126276FENTANYL HAPTENS, FENTANYL HAPTEN CONJUGATES, AND METHODS FOR MAKING AND USING
US - 27.04.2023
Clasificación Internacional A61K 39/385 Nº de solicitud 17909874 Solicitante REGENTS OF THE UNIVERSITY OF MINNESOTA Inventor/a Marco Pravetoni
This disclosure describes fentanyl haptens, a fentanyl hapten-carrier conjugate, methods of making the fentanyl hapten-carrier conjugate, and methods of using the fentanyl hapten-carrier conjugate including, for example, as a prophylactic vaccine to counteract toxicity from exposure to fentanyl, fentanyl derivatives, and fentanyl analogs. In some embodiments, the fentanyl hapten-carrier conjugate or a composition including the fentanyl hapten-carrier conjugate may be used in an anti-opioid vaccine.

15.WO/2023/070129NEOADJUVANT USAGE OF PLANT VIRUS OR VIRUS-LIKE PARTICLES FOR CANCER TREATMENT
WO - 27.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/078599 Solicitante TRUSTEES OF DARTMOUTH COLLEGE Inventor/a FIERING, Steven
A neoadjuvant for use in treating cancer includes an in situ vaccine and optionally an immune check point therapeutic. The in situ vaccine includes at least one of cowpea mosaic virus or cowpea mosaic virus-like particles.

16.WO/2023/067118LIPOPOLYSACCHARIDE (LPS) DEFICIENT ACINETOBACTER BAUMANNII MULTIVALENT VACCINE.
WO - 27.04.2023
Clasificación Internacional A61K 39/108 Nº de solicitud PCT/EP2022/079329 Solicitante VAXDYN S.L. Inventor/a INFANTE VIÑOLO, Juan José
The invention refers to a composition comprising inactivated cells deficient in LPS from the genus Acinetobacter and/or outer membrane vesicles form the same and their use for the manufacture of a medicament, preferably a vaccine, for the prevention of diseases caused by K. pneumoniae, P. aeruginosa, E. coli, and/or A. pleuropneumoniae. and optionally A. baumannii.

17.4168429SCHWEINEINFLUENZA-A-VIRUS-IMPFSTOFF MIT EINEM NUKLEINSÄUREKONSTRUKT MIT ERSTEN, ZWEITEN UND DRITTEN NUKLEINSÄURESEQUENZEN ZUR CODIERUNG VERSCHIEDENER NEURAMINIDASE-ANTIGENE DES VIRUS
EP - 26.04.2023
Clasificación Internacional C07K 14/11 Nº de solicitud 21733128 Solicitante INTERVET INT BV Inventor/a MOGLER MARK A
The present invention relates to a nucleic acid construct comprising first, second and third nucleic acid sequences encoding first, second and third neuraminidase (NA) antigens of a Swine influenza A virus (IAV-S). The first NA antigen is of the A/swine/Scotland/410440/1994-like $H1_{hu}N2$ (Scot/94) lineage, the second NA antigen is of the A/swine/Gent/1/1984-like H3N2 (Gent/84) lineage, and the third NA antigen is selected from the A(H1N1)pdm09 (pdm09) lineage or the Eurasian avian-like $H1_{av}N1$ (EA) lineage. In other embodiments, the present invention relates to RNA replicon particles comprising the nucleic acid construct, an immunogenic composition, such as a vaccine, which may be used against influenza A virus infection, and comprising the replicon particles.

18.3534939VACCINE MOD PORCIN PARVOVIRUS OG PORCIN REPRODUKTIONS- OG RESPIRATIONSSYNDROMVIRUS OG FREMGANGSMÅDER TIL FREMSTILLING DERAF
DK - 24.04.2023
Clasificación Internacional A61K 39/00 Nº de solicitud 17808328 Solicitante Boehringer Ingelheim Vetmedica GmbH Inventor/a COOL, Robert, Thomas
The present invention relates to a porcine parvovirus and porcine reproductive and respiratory syndrome virus vaccine for protecting a subject, preferably swine, against diseases associated with porcine parvovirus and porcine reproductive and respiratory syndrome virus. The present invention further relates to methods of producing immunogenic compositions as well as such immunogenic compositions exhibiting reduced virucidal activity.

19.WO/2023/069887MUCOSAL VACCINE, METHODS OF USE AND ADMINISTRATION THEREOF
WO - 27.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2022/078191 Solicitante YANG, Kejian Inventor/a
A method of vaccinating a subject against a respiratory viral infection comprises concurrently or separately administering to a subject in need thereof one of more polynucleotide vector(s) encoding a respiratory virus antigen and one or more aerosolized respiratory virus antigen(s) to induce a mucosal immune response in the subject against an infection by respiratory viral infection. In another aspect, the present application provides a mucosal vaccine kit comprising one of more polynucleotide vector(s) encoding a respiratory virus antigen, one or more aerosolized respiratory virus antigen(s).

20.202121036717VIRUS-LIKE PARTICLES FOR RESPIRATORY SYNCYTIAL VIRUS AND METHOD OF PREPARATION THEREOF
IN - 21.04.2023
Clasificación Internacional A61K / Nº de solicitud 202121036717 Solicitante Dr. Harshad Padmanabh Patil Inventor/a Dr. Harshad Padmanabh Patil
The present invention relates to virus-like particles (VLP) for respiratory syncytial virus (RSV) comprising of prefusogenic F (preFG) associated with G and M proteins using baculovirus system wherein the VLP is having lipid bilayer. Also, the present invention provides a method for preparation of respiratory syncytial virus-virus like particles (RSV-VLP). Further, the present invention provides an immunogenic composition wherein the immunogenic composition induces a highly effective immune response in a subject. Also, the present invention provides a VLP candidate vaccine for RSV wherein said vaccine is embedded with or without adjuvants in the lipid bilayer of VLP.

21.2023013119211H-PYRAZOLO[4,3-d]PYRIMIDINE COMPOUNDS AS TOLL-LIKE RECEPTOR 7 (TLR7) AGONISTS
US - 27.04.2023
Clasificación Internacional C07D 487/04 Nº de solicitud 17793155 Solicitante BRISTOL-MYERS SQUIBB COMPANY Inventor/a Christine M. TARBY
Compounds according to formula I are useful as agonists of Toll-like receptor 7 (TLR7). (I) Such compounds can be used in cancer treatment, especially in combination with an anti-cancer immunotherapy agent, or as a vaccine adjuvant.

22.20230127326C3-SUBSTITUTED 1H-PYRAZOLO[4,3-d]PYRIMIDINE COMPOUNDS AS TOLL-LIKE RECEPTOR 7 (TLR7) AGONISTS
US - 27.04.2023
Clasificación Internacional A61K 31/519 Nº de solicitud 17792905 Solicitante BRISTOL-MYERS SQUIBB COMPANY Inventor/a Christine M. TARBY

Compounds according to formula I are useful as agonists of Toll-like receptor 7 (TLR7). Such compounds can be used in cancer treatment, especially in combination with an anti-cancer immunotherapy agent, or as a vaccine adjuvant.

23.20230128782ROTAVIRUS VACCINES
US - 27.04.2023
Clasificación Internacional A61K 39/15 Nº de solicitud 17811250 Solicitante CureVac AG Inventor/a Susanne RAUCH The present invention provides mRNA sequences comprising at least one coding region, encoding for at least one epitope of a protein, or of a fragment, variant or derivative thereof, of a virus of the genus rotavirus. Particularly preferred is the protein respectively the protein cleavage product VP8* of rotavirus. The mRNA sequence may be used as a vaccine or generally as a pharmaceutical composition for prophylaxis or treatment of rotavirus infections.

24.4168042SELBSTVERSTÄRKENDER SARS-COV-2-RNA-IMPFSTOFF
EP - 26.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 21733820 Solicitante ZIPHIUS VACCINES Inventor/a SAHU ITISHRI
The present invention relates self-replicating RNA molecules comprising a sequence encoding nonstructural alphavirus proteins and a sequence encoding a SARS-CoV-5 2 protein antigen.

25.4168554AUTOMATISCHES TRANSPORTSYSTEM
EP - 26.04.2023
Clasificación Internacional C12N 15/62 Nº de solicitud 21745835 Solicitante PROKARIUM LTD Inventor/a CARRERA MARC BIARNES
The present invention provides for a modified autotransporter and the use of genetically engineered microorganisms comprising said modified autotransporters in the treatment of infectious and neoplastic disease. The present invention therefore also relates to vaccine and immunotherapeutic compositions comprising said genetically engineered microorganism.

26.WO/2023/066396CORE AMINO ACID SEQUENCE GROUP FOR TARGETED RECOGNITION OF ANTI-SARS-COV-2 NEUTRALIZING ANTIBODIES N-IGY-PABS, AND USE THEREOF
WO - 27.04.2023
Clasificación Internacional C07K 7/08 Nº de solicitud PCT/CN2022/126859 Solicitante SINO-SWED TONGKANG BIO-TECH (SHENZHEN) LIMITED Inventor/a HEI, Ailian
Specifically disclosed are a core amino acid sequence group for the targeted recognition of anti-SARS-CoV-2 neutralizing antibodies N-IgY-pAbs, and the use thereof. The core amino acid sequence group for the targeted recognition of the anti-SARS-CoV-2 neutralizing antibodies N-IgY-pAbs comprises 15 amino acid sequences located in an S-ECD domain and 5 amino acid sequences located in a non-structural protein (NSP) domain, and can be applied to the detection of SARS-CoV-2, and the designing of treatment targets and designing of vaccine targets. In the above amino acid sequence group, it is found that P272 in only one aa261-275 sequence of an S protein is a residue with a low-frequency mutation, and the remaining 19 sequences are conservative amino acid sequences, do not contain the currently discovered virus mutation sites, and are highly conservative, which can effectively cope with the unfavorable situation of high-frequency mutation of SARS-CoV-2 at present.

27.2023013051611H-PYRAZOLO[4,3-d]PYRIMIDINE COMPOUNDS AS TOLL-LIKE RECEPTOR 7 (TLR7) AGONISTS
US - 27.04.2023
Clasificación Internacional A61K 31/519 Nº de solicitud 17792878 Solicitante BRISTOL-MYERS SQUIBB COMPANY Inventor/a Qian ZHANG

Compounds according to formula I are useful as agonists of Toll-like receptor 7 (TLR7). Such compounds can be used in cancer treatment, especially in combination with an anti-cancer immunotherapy agent, or as a vaccine adjuvant.

28.20230129352MHC CLASS I ASSOCIATED PEPTIDES FOR PREVENTION AND TREATMENT OF ZIKA VIRUS
US - 27.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 17898069 Solicitante Emergex Vaccines Holding Limited Inventor/a Ramila Philip
The invention provides a vaccine composition comprising a flavivirus peptide comprising one or more CD8+ T cell epitopes, wherein the peptide is attached to a nanoparticle.

29.202237061513TRANSDERMAL ACTIVE AGENT DELIVERY DEVICES HAVING CORONAVIRUS VACCINE COATED MICROPROTRUSIONS
IN - 21.04.2023
Clasificación Internacional A61K 39/215 Nº de solicitud 202237061513 Solicitante EMERGEX USA CORPORATION Inventor/a AMERI, Mahmoud
Disclosed herein are systems and methods for the transdermal or intracutaneous delivery of vaccines, and more particularly to the delivery of vaccines that produce coronavirus or other virus specific antibodies in the serum of vaccinated mammals, including to prevent COVID-19.

30.202237061909CORONAVIRUS VACCINE
IN - 21.04.2023
Clasificación Internacional A61K / Nº de solicitud 202237061909 Solicitante PEPTC VACCINES LIMITED Inventor/a CSISZOVSZKI, Zsolt
The disclosure relates to polypeptides, vaccines and pharmaceutical compositions that find use in the prevention or treatment of Coronaviridae or SARS-CoV-2 infection. The disclosure also relates to methods of treating or preventing Coronaviridae or SARS-CoV-2 infection in a subject. The polypeptides and vaccines comprise B cell epitopes and cytotoxic and helper T cell epitopes that are immunogenic in a high percentage of subjects in the human population.

31.20230126396Compositions and Administration of Chimeric Glycoprotein Lyssavirus Vaccines for Coverage Against Rabies
US - 27.04.2023
Clasificación Internacional A61K 39/12 Nº de solicitud 18046243 Solicitante Thomas Jefferson University Inventor/a Matthias Schnell
The present disclosure is directed towards chimeric glycoproteins wherein the clip region, a core region, a flap region, and a transmembrane and cytoplasmic domain are defined by starting from the amino terminus of the protein, these domains are comprised of the following amino acid residue ranges: clip, 1 through 40 to 60; core, 40 to 60 through 249 to 281; flap, 249 to 281 through 419 to 459; the transmembrane domain is comprised of amino acids 460 through 480, and the remaining amino acids 481 through 525 comprise the cytoplasmic domain; and wherein the clip, core, flap, transmembrane, and cytoplasmic domain comprise a chimeric combination of at least two lyssavirus, wherein the chimeric glycoprotein is advantageously inserted into a rabies-based vaccine vector.

32.20230000506COMPOSICIÓN INMUNÓGENA CONTRA EL CORONAVIRUS 2 DEL SÍNDROME RESPIRATORIO AGUDO SEVERO (SARS-COV-2)
CO - 27.04.2023

Clasificación Internacional C07K 14/165 Nº de solicitud 20230000506 Solicitante DYNAVAX TECHNOLOGIES CORPORATION Inventor/a John D. CAMPBELL
Se proporciona una composición inmunogénica contra el síndrome respiratorio agudo severo coronavirus 2 (SARS-CoV-2), especialmente a una composición inmunogénica que tiene una proteína S recombinante de SARS-CoV-2 y adyuvante.

33.4168552IMMUNOGENE ZUSAMMENSETZUNG GEGEN SCHWERES AKUTES RESPIRATORISCHES SYNDROM CORONAVIRUS 2 (SARS-COV-2)
EP - 26.04.2023
Clasificación Internacional C12N 15/50 Nº de solicitud 21826483 Solicitante MEDIGEN VACCINE BIOLOGICS CORP Inventor/a KUO TSUN-YUNG
Provided an immunogenic composition against severe acute respiratory syndrome coronavirus (SARS-CoV-2), especially to an immunogenic composition having a recombinant SARS-CoV-2 S protein and adjuvant.

34.20230125179NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LUNG CANCER, INCLUDING NSCLC, SCLC AND OTHER CANCERS
US - 27.04.2023
Clasificación Internacional C07K 14/47 Nº de solicitud 17871724 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

35.4168439FÜR DAS SPIKE-PROTEIN DES SCHWEREN AKUTEN ATEMWEGSSYNDROMS CORONAVIRUS 2 (SARS-COV-2) SPEZIFISCHES BINDUNGSPROTEIN
EP - 26.04.2023
Clasificación Internacional C07K 16/00 Nº de solicitud 21733156 Solicitante NAVIGO PROTEINS GMBH Inventor/a KAHL MATHIAS
The present invention relates to novel proteins that specifically bind to the spike protein or domains thereof of the severe acute respiratory syndrome corona virus 2 (SARS-Cov-2) or variants of SARS-Cov-2. The proteins of the present invention represent advanced and powerful tools, for example for the purification of the virus or a vaccine for the virus, by virtue of said binding affinity for spike protein or domains of the spike protein of SARS-Cov-2 or variants thereof. Thus, the novel proteins of the present invention are particularly advantageous because they allow precise capturing of proteins or particles comprising spike proteins, S1 domain, and/or RBD in affinity chromatography. Further, the novel proteins of the present invention can be used in medical applications caused by or related to SARS-Cov-2 or variants thereof.

36.4168440FÜR DAS SPIKE-PROTEIN DES SCHWEREN AKUTEN ATEMWEGSSYNDROMS CORONAVIRUS 2 (SARS-COV-2) SPEZIFISCHES BINDUNGSPROTEIN
EP - 26.04.2023
Clasificación Internacional C07K 16/00 Nº de solicitud 21734847 Solicitante NAVIGO PROTEINS GMBH Inventor/a KAHL MATHIAS
The present invention relates to novel proteins that specifically bind to the spike protein or domains thereof of the severe acute respiratory syndrome corona virus 2 (SARS-Cov-2) or variants of SARS-Cov-

2. The proteins of the present invention represent advanced and powerful tools, for example for the purification of the virus or a vaccine for the virus, by virtue of said binding affinity for spike protein or domains of the spike protein of SARS-Cov-2 or variants thereof. Thus, the novel proteins of the present invention are particularly advantageous because they allow precise capturing of proteins or particles comprising spike proteins, S1 domain, and/or RBD in affinity chromatography. Further, the novel proteins of the present invention can be used in medical applications caused by or related to SARS-Cov-2 or variants thereof.

37.WO/2023/070029DNA ORIGAMI SUBUNIT VACCINE FOR PREVENTION OF SARS-CoV-2 VARIANT INFECTION
WO - 27.04.2023
Clasificación Internacional A61K 39/215 Nº de solicitud PCT/US2022/078426 Solicitante ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY Inventor/a STEPHANOPOULOS, Nicholas
The present disclosure relates to DNA nanocarriers and methods of use for stimulating an immune response in a host. In some embodiments, the DNA nanocarriers comprise SARS-CoV-2 surface glycoprotein.

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