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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.

- Noticias más recientes en la Web sobre vacunas.
- Artículos científicos más recientes de Medline sobre vacunas Covid.
- Patentes más recientes en Patentscope sobre vacunas.

Noticias en la Web

Accelerating AMR vaccine development

Nov 1. Dr Neil Murray, Chief Executive of ReNewVax, explores the importance of new bacterial vaccines in the context of antimicrobial resistance and examines how the principle of reverse vaccinology could help to create more accessible and cost-effective vaccines.

In July 2022, the World Health Organization (WHO) released its inaugural report on the pipeline of vaccines currently in development to prevent infections caused by antimicrobial resistance (AMR) bacterial pathogens.

WHO's analysis was stark. It asserted the need to accelerate trials for AMR-related vaccines in late-stage development and maximise the use of those already on the market.

WHO referred to 61 bacterial vaccine candidates in diverse stages of clinical development. While the late-stage vaccine candidates listed in the report were described as having a high development feasibility, the report noted that most will not be available any time soon.

I believe it is therefore incumbent upon those of us working in vaccine development to confound this expectation.

Prior to COVID-19, *Streptococcus pneumoniae* (also known as the pneumococcus) represented the biggest vaccine market in the world.

And for good reason – this is a disease which kills more children under the age of five than measles, malaria and HIV-AIDS combined. It is one of the leading causes of death associated with AMR globally.

In the immediate turmoil of the pandemic, it was not surprising that pneumococcus and AMR took a backseat in the rush to find a vaccine for COVID-19.

However, now that researchers, investors and governments have seen how the vaccines created for COVID-19 have allowed large parts of the world to start moving again, it is vital we leverage this impetus to expedite the vaccines that the AMR crisis so badly needs.

The threat of AMR continues to accelerate, spurred by the overuse and misuse of antibiotics.

Bacterial vaccines: challenges and opportunities

Bacterial vaccines have the potential to be a key component in fighting AMR. The great benefit of vaccines is that they are a proactive approach to disease prevention, compared to the reactive use of antibiotics. Additionally, by reducing disease levels, you reduce the need for antibiotics, which slows the evolution of antibiotic-resistant bacteria.

Historically, the development of bacterial vaccines has been challenging; it is not practical to develop a vaccine against each individual pathogen nor to vaccinate everyone against everything. However, for key pathogens, which carry a high disease burden and play a key part in the development of AMR, vaccines can be a critical tool. Slowing the development of resistance in just one class of bacteria increases the useful life of broad-spectrum antibiotics.

In particular, vaccines could be a way forward in treating gram-negative infections, where developing small molecule antibiotics has been challenging.

Another important consideration in the development of bacterial vaccines is cost. Many existing bacterial

vaccines rely on expensive conjugation technologies in their manufacture; consequently routine vaccination largely remains beyond the reach of low- and middle-income countries, where AMR is prevalent.

However, there are potential cost advantages to rationally designed protein-based vaccines developed using reverse vaccinology. These vaccines are cheaper to manufacture, and could potentially be more accessible in developing countries.

Reverse vaccinology

Our strategy at ReNewVax is based on the principle of reverse vaccinology, employing rational design in lieu of the classical hypothesis-led approach, which carries substantial risk until clinical evidence is generated. Analysis of large databases of clinical samples enables us to identify protein antigens with potential to form the basis of an effective vaccine.

In addition to the normal range of efficacy and safety studies, our approach is then further de-risked by including ex vivo human cell testing to confirm the immunologic properties of our vaccines before they are tested in clinic, increasing the likelihood of clinical success.

Using this approach, our lead programme – RVX 001, a protein-based vaccine against invasive pneumococcal disease – has been designed with antigens common to all pneumococcus serotypes. This makes RVX-001, potentially, the first universal pneumococcal vaccine – a key step forward in the immunisation strategy against this critical pathogen.

We look forward to taking our programme through to late-stage development as trials progress. Yet clinical trial costs for late-stage vaccines are high and more can be done to adapt trial designs to alleviate these costs.

There have been several previous failed attempts at developing a universal pneumococcal vaccine associated with late-stage termination of clinical trials, incurring significant costs, both financially and in human resource.⁶ Most recently, the development of a whole cell-based vaccine was abandoned on the basis of reports showing unacceptably high reactogenicity in young children.⁷ ReNewVax's development pipeline is significantly differentiated from any previous or existing pneumococcal programmes in that we have used a rational rather than a hypothesis-led approach.

While regulatory support, such as breakthrough therapy designations, can help in this regard, there is a critical need to collaborate with regulatory agencies to agree efficient clinical trial designs that maintain appropriate demonstration of safety and efficacy.

AMR has the potential to be just as devastating for the world as COVID-19. However, unlike COVID-19, it is advancing with stealth and action must be taken before it is too late. We believe the development of bacterial vaccines can be a key weapon in the fight against AMR.

If it were necessary, the pandemic has reminded us of the incredible power of vaccines as we are able to go about our day-to-day lives after years of disruption.

**"unlike COVID-19,
[AMR] is advancing
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It is imperative that our industry does not waste this vital opportunity and capitalises on advances made in vaccine technology to prevent AMR spiralling further into a crisis that could debilitate our lives once again.

Fuente: European Pharmaceutical Review. Disponible en <https://acortar.link/CUCqZ5>

Combination vaccines are coming for respiratory diseases

Nov 1. Combination vaccines are nothing new for the healthcare industry. Childhood vaccines, as well as a single shot for tetanus, diphtheria and pertussis for adults, have long been combined for ease of administration and increased compliance rates.

Now, as vaccines for COVID-19 and, for older people, RSV and pneumococcal disease join the annual flu shot as routine care recommendations for adults, healthcare professionals are increasingly concerned over getting the word out, vaccine fatigue and logistical hurdles. Biopharma companies are betting there will be a market for vaccines that combine protection against two or more diseases in a single jab.

"The data are pretty unequivocal that when there are combo vaccines available, people generally prefer them."

**Andrea C. Love,
immunologist and
microbiologist**

Benefit to the Population

"The data are pretty unequivocal that when there are combo vaccines available, people generally prefer [them]," said Andrea C. Love, an immunologist and microbiologist and founder of the Unbiased Science Podcast.

Love pointed out the convenience of the combination vaccines is a big positive for patients. She and others in the industry anticipate that a more streamlined process will increase vaccination compliance. Additionally, timely vaccination reduces the burden of illness for recipients.

Despite its benefits, vaccinations for COVID-19 have been on the decline. In October, Pfizer cut its revenue outlook for 2023 by \$2 billion due to lower demand for Comirnaty. The CDC reported that as of October 14, only 7% of adults and 2% of children had obtained the latest bivalent booster shot against COVID-19.

And just under half of adults received a vaccine against flu in the most recent year for which the agency has released data. Uptake has fallen, particularly in the 18 to 49 age group. Yet the flu remains a deadly illness: The CDC reported 290,000 hospitalizations and 19,000 deaths from influenza in the 2022-2023 flu season as pediatric hospitalizations and mortality rates reached highs that haven't been seen in years.

Respiratory syncytial virus (RSV) is the newest addition to the vaccine lineup. The virus leads to 100–300 deaths in children under 5 and 6,000–10,000 deaths in adults over 65 each year. Two vaccines have now been approved to prevent RSV in people over 60, with other companies in late-stage testing. Pfizer's Abrysvo is also indicated for use during pregnancy to protect infants from birth to 6 months of age. Analysts estimate the market will exceed \$9 billion by 2029.

Combo Vaccines in the Pipeline

In the face of dwindling vaccination rates, multiple biopharma companies are now developing shots that combine protection against two or even three respiratory illnesses.

Moderna has a handful of combos in the pipeline for flu plus COVID-19; flu, COVID-19 and RSV; and flu plus RSV. Phase I/II data from its quadrivalent influenza and COVID-19 vaccine were reported in early October, showing strong immunogenicity with an acceptable safety profile compared to standalone vaccines. The company is now moving into Phase III. Likewise, Pfizer and BioNTech announced positive topline data for an mRNA-based vaccine targeting influenza A, B and COVID-19, and it will be headed into Phase III.

Novavax has a vaccine for COVID-19 already on the market and a seasonal influenza shot in Phase III. The company is now working on combining the two into a single shot, hoping that decreasing the number of medical contact visits required will increase the number of people willing to get vaccinated, said Novavax President of R&D Filip Dobovsky.

Novavax's platform leaves the door open to potentially add in protection against other viruses as well, such as RSV, for which it already has a candidate in the pipeline.

"It's our understanding from discussing both with consumers as well as healthcare providers that there's a strong demand for a combination product, and it makes all the sense in the world," Dobovsky said.

The path for Novavax has been much quicker than traditional R&D because components of the vaccines have already been in use, allowing the company to move rapidly into human testing.

As these companies look to combine their already-approved or nearing-approval products, smaller player Icosavax came straight out of the gate with a combo vaccine candidate for RSV and human metapneumovirus (hMPV), a cousin to RSV. The candidate is in Phase II and has already received Fast Track Designation from the FDA.

"We've been able to go right to a combination approach," Icosavax CEO Adam Simpson told BioSpace, pointing out that the FDA seems open to this based on the designation.

The company put RSV and hMPV together because the viruses don't change every year. Simpson said Icosavax is hoping for a longer-acting vaccine with the right technology, foregoing the need for annual dosing.

Andy Hsieh, a William Blair analyst who covers Icosavax, noted that while the pediatric population has been rife with combination vaccines, the elderly population "has not been mature" in this market. "I think it makes very logical sense that the same benefit that was conferred to the pediatric population should also be extended for the elderly population," Hsieh said.

The market for RSV protection might take some time to build, he told BioSpace, as it's not as commonly known as flu or COVID-19. At this point, the Advisory Committee on Immunization Practices (ACIP) recommendations for RSV vaccination are not as strong as those for COVID-19. Rather than recommending vaccination for everyone who is eligible, ACIP recommends that it be a shared decision for those 60 and older to make with their healthcare providers.

Pfizer CEO Albert Bourla told investors on a recent call that he believes the combo shots will "unlock a significant potential by improving the vaccination rates." Whether these combination shots will really move the needle on public vaccination rates remains to be seen.

Fuente: PharmaLive.com. Disponible en <https://acortar.link/jgHvpV>

Moderna reins in 2023 COVID vaccine forecast, shares tumble

Nov 2. Moderna (MRNA.O) on Thursday said its 2023 sales would only hit the low end of its \$6 billion to \$8 billion forecast, reflecting weaker demand for COVID-19 vaccines, and its shares slumped 8%.

The vaccine maker also pushed back to 2025 the launch of its flu shot, which it had previously said it expected to be available in 2024.

Analysts had estimated over \$100 million in sales for each of Moderna's not yet approved vaccines against RSV and flu in 2024, according to LSEG data.

Concerns around waning demand for COVID vaccines and anticipation of a loss this year has led to a 60% drop in the company's shares year to date. The stock on Thursday plunged as much as 18% to a three-year low of \$62.55 in early trade before trimming some of those losses.

Moderna said its \$6 billion 2023 revenue forecast was based on the expectation that at least 50 million COVID-19 vaccines would be administered in the United States. Moderna's COVID-19 vaccine is its lone marketed product.

TD Cowen analyst Tyler Van Buren in a research note said he is not convinced Moderna's full-year expectations for the overall market is achievable.

COVID vaccine sales have declined in recent weeks, he said, citing IQVIA (IQV.N) data, adding that Moderna's expectations of roughly

50 million shots in the U.S. are only achievable if sales stay roughly flat from here on out.

The company reported third-quarter sales of \$1.8 billion, topping analysts' estimates of \$1.32 billion, according to LSEG data.

U.S. market share for Spikevax, the COVID vaccine's brand name, had increased to 45% from 36% in 2022, according to Moderna.

So far, more than 15 million people in the U.S. have received an updated COVID-19 shot, including Pfizer's (PFE.N) rival vaccine, according to the Department of Health and Human Services. That compares to around 23 million by this time in last year's campaign, which started 10 days earlier.

Moderna said it expects to return to sales growth in 2025 with the help of new vaccines and break even the following year.

The Cambridge, Massachusetts company forecast \$4 billion in revenue next year from sales of its COVID and respiratory syncytial virus (RSV) vaccines. Moderna hopes to launch the RSV vaccine in 2024 based on positive data from a late-stage trial.

Analysts, on average, are looking for nearly \$6 billion in revenue next year.

Moderna's 2025 sales growth expectation is based on anticipated revenue from those shots, as well as from a forthcoming combination COVID-flu vaccine, Chief Financial Officer Jamey Mock said in an interview.

"We believe 2024 is the low point, and we laid out some of the pieces to that. We're going to launch two or three new products on top of that in 2025, and have RSV out in 2024, and it'll continue to grow thereafter," he said.

The company posted a third-quarter net loss of \$3.6 billion, driven by non-cash charges of \$3.1 billion related to manufacturing capacity resizing and on a tax reserve it had to take.



A woman receives a booster dose of Moderna coronavirus disease (COVID-19) vaccine at a vaccination centre in Antwerp, Belgium, February 1, 2022. REUTERS/Johanna Geron/File Photo Acquire Licensing Rights

The resizing, which included scaling down production by contract manufacturer Lonza (LONN.S), will improve future cost of sales, Moderna said.

A \$9.53 per share loss for the quarter was much larger than expectations for a \$1.93 loss, according to LSEG data.

Fuente: Reuters. Disponible en <https://acortar.link/J8VAh0>

Serotypes 3, 19A Most Common for Pneumococcal Community-Acquired Pneumonia

Nov 3. Despite vaccination with pneumococcal polysaccharide vaccine (PPSV23, Pneumovax 23; Merck), serotypes 3 and 19A were still the most common serotypes of pneumococcal community-acquired pneumonia (pCAP) among children and older adults, according to results of a new study.

In the study, conducted in South Korea, PPSV23 vaccination could still reduce the risk of mortality among those with pCAP. Investigators of the study noted that even though the targeted risk population has been vaccinated against pneumococcal diseases, the serotypes are still evolving in South Korea, which can affect the rollout of the vaccines.



Bernard Chantal - tock.adobe.com

In the study, individuals aged 19 and older with community-acquired pneumonia (CAP) were included between September 2018 and July 2021. The individuals were from 5 university hospitals in South Korea. A total of 5009 individuals, with a mean age of 70.3 years and 63.1% men, were included. Approximately 71.3% had at least 1 comorbidity and 44.4% and 7.7% were vaccinated with PPSV23 and pneumococcal conjugate vaccine 13, respectively.

The study investigators analyzed data around demographic and clinical characteristics of the individuals, pneumococcal serotype distribution, and risk factors of 30-day mortality of patients with pCAP. They specifically analyzed the clinical characteristics of serotype 3 pCAP.

The study authors said that the leading cause of CAP was *Streptococcus pneumoniae* with 11.8% in the overall population and 17.7% in individuals less than 65 years of age with chronic medical conditions. Among the 280 serotypes of *Streptococcus pneumoniae*, the study authors reported that serotype 3 was most common at 10%, followed by 19A, 34, and 35B at 8.9% each.

Investigators also found that the proportion of pCAP was significantly higher in those who were male, those with comorbidities, those in long-term care facility residence, and concomitant respiratory viral infections when compared to non-pCAP infection.

Among 180 individuals who were vaccinated with PPSV23, the non-vaccine serotypes 35B and 34 were the most prevalent at 13.9% and 12%, respectively. There were no differences between the 2 vaccination groups. However, serotype 3 was still prevalent, regardless of vaccination status, and the most common in those with

chronic lung disease. Serotype 3 was also more common in the spring at 50%.

Furthermore, the investigators found that advanced age, long-term care facility residence, and bacteremia were all independent risk factors that contributed to mortality for those with pCAP.

The study authors said that *S. pneumoniae* was most prevalent for those less than 65 years of age with chronic medical conditions, noting that the vaccine uptake rate in this group was low. Further, individuals who received PPSV23 had lower rates of pCAP caused by PPSV23 or 20-valent pneumococcal conjugate vaccine serotypes when compared to individuals who were not vaccinated. They suggested that vaccination with PPSV23 could potentially lower the 30-day mortality risk for patients.

Additionally, the investigators stated, that their study demonstrating that pneumococcus was the most common cause of CAP, was consistent with studies in the United States, Canada, and Italy.

The study authors also added that there were limitations to the study. Serotyping data was limited, with information about only 280 of the 598 cases being available. Further, respiratory viral PCR tests were conducted in only 35.2% of individuals.

Fuente: Pharmacy Times. Disponible en <https://acortar.link/DvxbZ2>

El neumococo se podría erradicar en el planeta dentro de 25 años con vacunas asociadas que incluyan a todos los serotipos

6 nov. El neumococo es una bacteria compuesta por más de 100 serotipos que afecta principalmente a niños y personas mayores. Una de las principales patologías que produce es la neumonía, una infección respiratoria que anualmente afecta a millones de personas en todo el mundo. La investigación y el trabajo desarrollado en materia de prevención ha logrado disminuir considerablemente la carga de la enfermedad, las hospitalizaciones y consecuencias de mayor gravedad para la salud de las personas. En una jornada organizada por MSD, dos especialistas han analizado los principales retos y oportunidades de la enfermedad, así como la importancia de la prevención a través de la vacunación.



GettyImages

“La interrelación entre virus y bacterias es muy interesante porque, con la prevención de las infecciones virales se pueden prevenir muchas infecciones neumocócicas”, ha afirmado Fernando Baquero Artigao, coordinador de la Unidad de Infectología Pediátrica del Hospital del Universitario La Paz de Madrid. Por su parte, Fernando Baquero Mochales, profesor de Investigación en el Servicio de Microbiología del Hospital Ramón y Cajal e investigador del grupo 33 de CIBERESP, ha añadido que “el neumococo se podría erradicar en el planeta dentro de 20 o 25 años con vacunas asociadas que incluyan a todos los serotipos”.

Las polisacáridas, desarrolladas a mediados de los 80, fueron las primeras vacunas disponibles para tratar las enfermedades neumocócicas. En los primeros años del siglo XXI empezaron a comercializarse las

vacunas conjugadas, que producen una mayor respuesta inmunológica frente al neumococo que las primeras. Dentro de esta categoría, la primera que se desarrolló fue la 7-valente. “El descubrimiento de la vacuna 7-valente supuso una revolución”, ha pronunciado Baquero Mochales. Posteriormente, la vacuna 13-valente también fue un éxito rotundo.

Las primeras vacunas disponibles consiguieron disminuir de forma drástica las infecciones respiratorias altas en los niños y las resistencias a los antibióticos. Por esta razón, ambos expertos consideran que la historia de las vacunas neumocócicas es una historia de éxito. “La vacunación frente al neumococo es el equivalente al descubrimiento de la penicilina en términos de reducción de la morbilidad”, ha recalcado Baquero Mochales.

Nuevas vacunas

Hay nuevos serotipos que han ocupado nuevamente el lugar que han dejado los otros. Por esta razón, ambos han coincidido en que son necesarias nuevas vacunas de cara al futuro. Hace apenas un año llegó a España la vacuna conjugada antineumocócica 15-valente contra los serotipos 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 22F, 23F y 33F. En Aragón y Cataluña ya está disponible. “La 15-valente incluye dos nuevos serotipos que están emergiendo: el 22F y el 23F. Esta vacuna genera más respuesta de anticuerpos frente al serotipo 3 y podría abrir una esperanza para el control de este serotipo en la población”, ha apuntado Baquero Artigao. Otra de las últimas en llegar ha sido la 20-valente, pero esta cuenta solo con aprobación en adultos.

Problemas con el serotipo 3

Los neumocos comúnnemente colonizan el tracto respiratorio del ser humano, en especial en el invierno y a comienzos de la primavera. La diseminación se produce a través de las gotas que se transmiten por el aire. La cápsula de los neumocos está formada por un polisacárido complejo que determina el tipo serológico y contribuye a su virulencia y potencial patogénico. La virulencia varía un poco dentro de cada tipo serológico debido a la diversidad genética.

Las cepas del serotipo 3, que están encapsuladas en forma más estrecha y tienden a formar más colonias mucoides que otros serotipos, son causas comunes de enfermedad neumocócica invasora en adultos. Según MSD, la mayoría de las infecciones graves son causadas por los serotipos 3, 4, 6B, 9V, 14, 18C, 19F y 23F, que se incluyen en las vacunas antineumocócicas conjugadas PCV15 y PCV20 administradas inicialmente con mayor frecuencia. Estos producen aproximadamente el 90 por ciento de las infecciones graves en niños, y el 60 por ciento de las observadas en adultos. “El serotipo 3 nos causó mucho miedo. Es un serotipo que ha persistido a pesar de la vacunación con 13-valente y es el número uno causante de enfermedad invasora en niños y adultos”, ha explicado Baquero Artigao.

“El serotipo 3 no es muy resistente a los antibióticos. Paradójicamente, su cápsula impide que le entre información de bacterias resistentes a los antibióticos, pero es tan patógeno que, a veces, la respuesta de citoquinas o de interferón del hombre produce lesiones trombóticas o neumonías con tal rapidez que los antibióticos no son muy eficaces”, ha sostenido Baquero Mochales.

El papel de MSD

Durante la jornada también se ha puesto de manifiesto el compromiso y contribución de MSD en el abordaje de esta bacteria. “MSD es una compañía que lleva más de 100 años dedicados a poder desarrollar y

distribuir antibióticos y vacunas", ha explicado Gonzalo Fernández, director médico de la Unidad de Vacunas de MSD en España. Para ello se ha apoyado en una serie de datos: en el siglo XIX aportó las vacunas de la listeria y la viruela, y en el XX fueron muchas más, entre ellas la del neumococo. "En 1977 se presentaron los resultados de dos ensayos clínicos donde se demuestra que eran claramente eficaz", ha detallado. La primera vacuna se comercializó ese mismo año. La siguiente fue la de Pneumovax 23, que aún está disponible. A partir de ese momento, la compañía desarrolló otra tecnología de vacunas con la 15-valente.

"Es importante la estrategia de desarrollo de vacunas porque esta vacuna tenía el objetivo de mantener la inmunogenicidad de la vacuna anterior de 13 serotipos, añadir serotipos nuevos y producir una respuesta para ese serotipo 3. MSD sigue comprometida con el neumococo y está desarrollando una vacuna antineumocócica conjugada de 21 serotipos para la población adulta. De hecho, cuenta con ocho serotipos que no disponen ninguna de las vacunas anteriores. Los resultados de la fase III se van a presentar en las próximas semanas o meses", ha concluido.

Fuente: Gaceta Médica. Disponible en <https://acortar.link/G0mEob>

Moderna Launches mRNA Platform Incubator Network to Boost

Nov 6. US-based biotechnology company Moderna has taken a significant step in advancing mRNA (messenger RNA) research by introducing the mRNA Platform Incubator Network in Australia. This collaborative network brings together prominent Australian organizations with expertise in translational and pharmaceutical science, early-phase clinical trials, and regulatory science. The primary goal is to promote scientific excellence in clinical translation and further harness the therapeutic potential of the mRNA platform.



Promising Potential of mRNA

Moderna has officially partnered with the Australian Federal Government to establish an advanced domestic mRNA vaccine manufacturing facility in Melbourne, Victoria. This collaboration, following the initial announcement in December 2021, underscores Moderna's commitment to supporting Australia's mRNA research and global public health efforts. The facility will focus on producing mRNA vaccines for respiratory viruses like COVID-19, influenza, and RSV. Construction is set to begin by the end of 2022, with operational status expected by the end of 2024, subject to approvals. Moderna's extensive mRNA pipeline includes 28 vaccine candidates targeting respiratory and latent viruses, addressing global health challenges.

Moderna's Regional Research Centre, inaugurated in August, will serve as the headquarters for this network of excellence. It includes prestigious institutions like Monash University, the Monash Institute of Pharmaceutical Sciences (MIPS), the Peter Doherty Institute, and The Peter MacCallum Cancer Centre. By combining the knowledge and expertise of these esteemed organizations, the Network aims to overcome specific clinical platform challenges and enhance mRNA therapeutics.

mRNA technology has been at the forefront of medical innovation, particularly in the development of COVID-19 vaccines like Spikevax. The Network's mission involves developing scientific strategies to tackle challenges in the mRNA field. It also focuses on overseeing the practical implementation of these strategies, using non-clinical and computational quantitative pharmacology investigations, as well as translational clinical trials, led from Australia. This approach demonstrates the commitment to exploring mRNA's therapeutic potential fully.

Elevating Australia as an mRNA Research Leader

Dr. Craig Rayner, Director of Moderna's Regional Research Centre, emphasizes that the creation of the mRNA Platform Incubator Network underscores Australia's emerging leadership in mRNA research. Professor Chris Porter, Director of the Monash Institute of Pharmaceutical Sciences, also highlights the importance of bringing together leaders in mRNA science from academia, industry, and clinical evaluation. This collaboration represents a significant step toward realizing the full potential of mRNA therapeutics. As mRNA technology continues to evolve and offer promising therapeutic options, this initiative is poised to contribute significantly to medical advancements and innovation in Australia.

Fuente: GENE ONLINE. Disponible en <https://acortar.link/S03sfN>

International Scientists Launch Human Trials for Strep A Vaccine

Nov 7. In a significant stride toward combating the deadly Group A Streptococcus bacteria, commonly known as Strep A, an international collaboration of scientists from the University of Alberta in Canada and Griffith University in Australia has initiated the first phase of human clinical trials for a potential Strep A vaccine. This development offers a ray of hope in the battle against a pathogen responsible for claiming more than 500,000 lives annually, particularly affecting vulnerable populations such as children and marginalized communities.



The Vaccine Development Breakthrough

Griffith University researchers, under the lead of Professor Michael F. Good from Griffith's Institute for Glycomics, have pioneered a groundbreaking approach to Strep A vaccine development. Previous research efforts were hampered by the pathogen's enormous diversity, but this new vaccine design targets specific key epitopes present in every Strep A strain.

By presenting these crucial components to the immune system, researchers hope to bolster the body's ability to fight off even the most virulent Strep A strains. This innovative strategy has the potential to unlock a successful vaccine, offering protection against multiple Strep A strains, a feat previously considered challenging due to the pathogen's variability.

International Collaboration and Funding Support

The collaborative effort began when Distinguished Professor Lorne Tyrrell and Nobel laureate Sir Michael Houghton from the Li Ka Shing Applied Virology Institute recognized the potential in Griffith University's Strep A vaccine program. Griffith University's vaccine, formulated by combining two universal molecules found in all

Strep A strains, attracted significant interest due to its innovative approach. The University of Alberta's state-of-the-art facilities and expertise provided an ideal platform for the vaccine's clinical trials.

The Li Ka Shing Applied Virology Institute took a crucial step by funding the initial phase of clinical trials, with Griffith University retaining the intellectual property rights. Lawrence Richer, the center director of the Northern Alberta Clinical Trials and Research Centre, highlighted the University of Alberta's commitment to providing a safe and innovative environment for these critical trials. The institution's dedication to constant innovation and support for researchers significantly facilitated the translation of laboratory discoveries into human trials.

Promising Prospects and Future Trials

The Phase 1 clinical trial, expected to involve 10 to 20 patients, aims to establish the vaccine's safety and efficacy. If successful, the Li Ka Shing Applied Virology Institute plans to support Phase 2 trials, encompassing a larger patient cohort. This progression offers hope for the development of a groundbreaking vaccine that could prevent a spectrum of Strep A-related diseases, including rheumatic fever, necrotizing fasciitis, and neurological disorders like Sydenham chorea.

The launch of human trials for the Strep A vaccine signifies a pivotal moment in the quest to save lives and enhance global health. By targeting the Achilles heel of the Strep A pathogen, scientists have embarked on a journey that holds immense promise for preventing severe diseases and complications, as well as reducing fatalities, particularly in vulnerable populations.

Fuente: GENE ONLINE. Disponible en <https://acortar.link/UnNIMi>

31-Valent Pneumococcal Conjugate Vaccine Candidate Doses First Person

Nov 9. Vaxcyte, Inc. today announced that the first participants were dosed in a Phase 1/2 clinical study for VAX-31, a 31-valent pneumococcal conjugate vaccine (PCV) candidate designed to prevent invasive pneumococcal disease (IPD) in adults.

Vaxcyte stated it expects to announce topline data from the Phase 1/2 study in the second half of 2024.

"We are pleased to initiate the first adult clinical study of VAX-31, which is the broadest-spectrum PCV to enter the clinic, with the potential to protect against approximately 95 percent of IPD circulating in the U.S. adult population," said Grant Pickering, Chief Executive Officer and Co-founder of Vaxcyte, in a press release on November 9, 2023.

"Leveraging the foundation established by our lead PCV candidate, VAX-24, we believe we have an opportunity to deliver a best-in-class PCV franchise that provides the broadest spectrum of coverage and improved immune responses compared to the standard-of-care in adults today."

The VAX-31 Phase 1/2 clinical study is a randomized, observer-blind, active-controlled, dose-finding clinical study designed to evaluate the safety, tolerability, and immunogenicity of VAX-31 compared to Prevnar 20® in healthy adults aged 50 and older.

Pneumococcal disease (PD) is an infection caused by *Streptococcus pneumoniae* bacteria. It can result in IPD, including meningitis and bacteremia, and non-invasive PD, including pneumonia, otitis media, and sinusitis.

The U.S. National Center for Health Statistics Mortality Surveillance reported on October 27, 2023, that most

respiratory disease deaths were recently related to pneumonia, not COVID-19 or influenza. Precision Vax posts additional PCV vaccine and candidate news.

The U.S. CDC's pneumococcal vaccine schedules were updated in 2023.

Fuente: Precision Vaccinations. Disponible en <https://acortar.link/buVEQd>

La vacuna contra el dengue llegó a la Argentina: la palabra del científico que lideró el estudio global

9 nov. Infobae dialogó en exclusiva con el doctor Derek Wallace, jefe del equipo de investigación que desarrolló y evaluó la eficacia de la fórmula tetravalente del laboratorio japonés Takeda que protege contra los cuatro serotipos del virus. Quiénes pueden recibirla y cómo será su aplicación en el país.

Quién iba a decir que los mosquitos iban a ocupar el centro de la escena científica convirtiéndose en el vector de una de las infecciones virales que amenaza al mundo.

El dengue es endémico en más de 100 países y causa 390 millones de nuevas

infecciones y 20.000 muertes por año a nivel global, según la Organización Mundial de la Salud (OMS). El cambio climático y el avance de la urbanización no planificada alteraron el comportamiento del vector -el mosquito Aedes aegypti- y el virus que causa el dengue dejó de tener alta circulación sólo en zonas tropicales y subtropicales para propagarse por nuevas regiones, como Estados Unidos y Europa.

Este avance implica que el dengue se convirtió en una enfermedad con alto riesgo de pandemia.

De esa realidad no escapa la Argentina, que en la última temporada de dengue marcó cifras récord, con 132.237 infecciones y 65 muertes registradas en lo que va del 2023.

Ahora, la buena noticia es que la vacuna tetravalente -aprobada por la ANMAT en abril- que disminuye 84% el riesgo de hospitalización y reduce 61% los casos de dengue sintomático, está disponible en el país desde principios de este mes en los centros de vacunación privados, según informó hoy el laboratorio Takeda, responsable del desarrollo de la vacuna.

Esta formulación tetravalente protege contra los cuatro serotipos del virus del dengue y, además, demostró una eficacia general que se eleva a 80,2% para prevenir los casos de dengue sintomáticos en los 12 meses siguientes a la aplicación.

Infobae entrevistó en exclusiva al doctor Derek Wallace, jefe del Programa Global de Dengue de Takeda que desarrolló la fórmula tetravalente, y quien lideró la investigación global sobre la seguridad y eficacia de la vacuna contra el dengue en un ensayo clínico que se prolongó por 5 años y contó con más de 20 mil voluntarios.



La vacuna tetravalente contra el dengue se administra en dos dosis con un intervalo de 3 meses (Imagen ilustrativa Infobae).

El doctor Wallace es médico especialista en vacunología y es uno de los científicos que más sabe de dengue en el mundo. En 2009 visitó un hospital en Tailandia durante un brote de la enfermedad y quedó shockeado por los niños hospitalizados y sus padres cuidándolos con colchones en el piso, desde entonces encontrar la vacuna contra la enfermedad fue su norte.

“Las vacunas son una herramienta muy potente de la salud pública. Y brindan beneficios a más de una generación, es un orgullo que esta vacuna ayude a reducir la carga de la enfermedad de dengue para las generaciones venideras”, señaló Wallace a Infobae.

El experto nació en Papúa Nueva Guinea, creció en Brisbane, Australia, ahora reside en Massachusetts, EEUU. Como ciudadano del mundo, conoce bien los riesgos de una enfermedad que avanza y que puede convertirse en pandemia si no se mitiga su circulación.

¿Quiénes pueden recibir la vacuna contra el dengue?

La vacuna tetravalente contra el dengue del laboratorio japonés Takeda (TAK-003), conocida como Qdenga, fue aprobada a fines de abril en Argentina por la Administración Nacional de Medicamentos, Alimentos y Tecnología Médica (ANMAT) y desde el 1 de noviembre está disponible en el país.

También fue aprobada por la Agencia Europea de Medicamentos (EMA), el Reino Unido, Islandia, Brasil, Colombia, Indonesia y Tailandia.

La vacuna se administra en dos dosis de 0,5 ml que deben aplicarse con un intervalo de 3 meses. Brinda protección contra los cuatro serotipos del dengue y está destinada para mayores de 4 años (y sin límite de edad) que hayan tenido o no la infección. Está contraindicada en embarazadas, mujeres en período de lactancia y en pacientes con inmunocompromiso.

Se aplica bajo prescripción médica, por eso la persona debe acercarse a los principales centros de vacunación privados del país y presentar la receta para recibir la dosis.

La vacuna Qdenga está compuesta por virus vivo atenuado y se desarrolló a partir del serotipo 2 del dengue, que conforma la base genética para ofrecer protección contra todos los serotipos.

El doctor Wallace, tras más de una década de investigación, sintetiza la elaboración de esta vacuna por virus vivo atenuado como una delicada combinación de “arte y ciencia”.

“La idea es atenuar el virus a un nivel que no sea muy escaso pero tampoco demasiado fuerte. Porque la vacuna tiene que prevenir que se produzca en el organismo síntomas similares a los que produce el dengue, pero, al mismo tiempo, se busca lograr una respuesta inmunitaria robusta”, detalló.

Existen cuatro serotipos distintos del virus del dengue: DEN-1, DEN-2, DEN-3 y DEN-4 y en América circulan todos. Cualquiera de los cuatro serotipos de dengue provocan la enfermedad y la prevalencia de cada serotipo varía según los diferentes países, regiones, temporadas y a lo largo del tiempo.

En Argentina, en la última temporada, el 79% de las infecciones fueron por DEN-2 y el 20% por DEN-1, y solo un grupo reducido de casos por DEN-3.

“De los cuatro serotipos del virus del dengue, solamente DEN-2 es el que tiene ese nivel de atenuación y por eso lo usamos como base (genética) para combatir los otros tres serotipos. El desafío fue identificar la atenuación correcta del virus”, explicó Wallace.

El nivel adecuado de atenuación del virus —que se corroboró en el ensayo clínico con humanos y con

mosquitos— es una cantidad de virus en sangre tan pequeña que cuando el Aedes aegypti pica a una persona vacunada luego el mosquito no transmite ninguna carga viral a otro humano.

Un estudio de cinco años para evaluar la eficacia

El doctor Wallace lideró la investigación global detrás del desarrollo de la vacuna Qdenga: el Estudio de Eficacia de la Inmunización Tetravalente contra el Dengue (TIDES, por sus siglas en inglés), que evaluó la eficacia y seguridad de la vacuna en ocho países, se realizó durante 5 años y contó con la participación de más de 20 mil voluntarios.

Para el ensayo fueron elegidos cinco países endémicos de dengue de América Latina (Brasil, Colombia, República Dominicana, Nicaragua y Panamá) y tres de Asia (Sri Lanka, Tailandia y Filipinas).

La decisión de realizar un seguimiento durante cinco años a 20 mil voluntarios en ocho naciones con distintas realidades de circulación de virus del dengue fue clave para evaluar la fórmula tetravalente: “Lo desafiante fue lograr una heterogeneidad en la situación epidemiológica. Si hubiéramos hecho el estudio en un único país, hubiéramos tenido la información de solamente uno o dos serotipos. En cambio, de esta manera logramos un panorama global con distintos huéspedes (las personas voluntarias) de los cuatro serotipos”, detalla Wallace.



La vacuna tetravalente contra el dengue está destinada para mayores de 4 años y sin límite de edad que hayan tenido o no la infección. (iStock)

Los resultados del estudio TIDES mostraron una disminución del 84% de las hospitalizaciones por dengue y una reducción del 61% los casos de dengue sintomático.

Además, a los 12 meses de la aplicación de las dosis la eficacia general se elevó al 80,2% para prevenir los casos sintomáticos. Ya que con el tiempo, la vacuna logra que la respuesta inmune se haga más robusta, por eso Qdenga cumplió un criterio de valoración clave al prevenir 90,4 % las hospitalizaciones un año y medio después de la vacunación.

Después de haber contraído la enfermedad de dengue, la recuperación de la infección causada por uno de los serotipos ofrece inmunidad de por vida únicamente contra ese serotipo, y la exposición posterior a cualquiera de los otros serotipos está asociada con un mayor riesgo de padecer la enfermedad grave.

Una de las grandes ventajas de esta vacuna es que puede aplicarse en las personas que ya hayan cursado la enfermedad de dengue, que son quienes están en riesgo de desarrollar cuadros más severos.

Wallace describió a Infobae que si una persona está con la enfermedad activa al momento de acercarse al vacunatorio —por ejemplo, si tiene fiebre— se posterga la aplicación de la dosis, pero si ha tenido dengue hace dos semanas puede vacunarse sin problemas.

Protección extra prolongada

Respecto a si se está evaluando un calendario de refuerzos tras las dos dosis, el doctor Wallace explica que

la respuesta inmune es tan prolongada tras las dos dosis que aún falta determinarlo.

“Con la vacuna tetravalente estamos hablando de una protección contra el dengue de cuatro años y medio o más”, dice contundente.

“Nuestro estudio TIDES evaluó la inmunidad hasta 4,5 años después de la segunda dosis y sabemos que la protección se mantiene en ese lapso”, completó.

La vacuna del dengue en Argentina

El dengue se ha urbanizado y amplió su zonas de circulación. Ya no afecta solo a las áreas del norte argentino, aunque la región del NOA (Catamarca, Jujuy, La Rioja, Salta, Santiago del Estero y Tucumán) sigue concentrando casi la mitad de las infecciones registradas, según las cifras actualizadas del Ministerio de Salud de la Nación.

“El dengue se ha transformado en la enfermedad transmitida por insectos más importante en el mundo y continúa mostrando que lo seguirá siendo en los próximos años. Su crecimiento es permanente, tanto en cantidad de pacientes como en la extensión geográfica afectada”, dijo el doctor Tomás Orduna, médico infectólogo tropicalista y ex Jefe de Medicina Tropical y Medicina del Viajero del Hospital Muñiz, durante la presentación de la vacuna.

Fuente: Infobae. Disponible en <https://acortar.link/2y3Bfx>

La FDA aprueba la primera vacuna contra el virus chikungunya

10 nov. La Administración de Alimentos y Medicamentos de Estados Unidos dijo este jueves que aprobó la primera vacuna para prevenir la enfermedad causada por el virus chikungunya.

La vacuna de dosis única, Ixchiq, fabricada por Valneva Austria GmbH, está aprobada para adultos que tienen un mayor riesgo de exposición al virus. Ixchiq recibió designaciones de terapia innovadora y de vía rápida.



El chikungunya, una enfermedad transmitida por mosquitos cuyo nombre en el dialecto makonde de África significa “agacharse de dolor”, no tiene tratamiento específico y puede ser debilitante e incluso mortal para los recién nacidos. Los expertos en salud lo consideran una amenaza emergente para la salud global agravada por el cambio climático, con al menos 5 millones de casos en los últimos 15 años, aunque las muertes y las enfermedades graves son raras, según la Organización Mundial de la Salud .

Las personas con mayor riesgo de infección viven en África, el sudeste asiático y partes de América, donde los mosquitos portadores de chikungunya son endémicos, pero la crisis climática llevó el virus a nuevas partes del mundo.

Antes de 2006, el virus rara vez se identificaba incluso en viajeros estadounidenses, según los Centros para el Control y la Prevención de Enfermedades de EE. UU., pero los estudios identificaron un par de docenas de casos en viajeros estadounidenses entre 2006 y 2013. A finales de 2014, los casos que surgieron de la

transmisión local fueron reportado en partes más cálidas de los EE. UU.: Florida, Texas, Puerto Rico y las Islas Vírgenes de los EE. UU.

Las personas que contraen chikungunya suelen tener fiebre y pueden desarrollar dolor en las articulaciones. También pueden tener dolor de cabeza, dolor muscular y sarpullido. Para algunas personas, el dolor articular puede ser debilitante y puede durar años. Se espera que alrededor del 20% al 30% de los casos se vuelvan crónicos, según muestra la investigación. Para los recién nacidos, el chikungunya puede ser una amenaza potencialmente mortal.

Ixchiq contiene una versión viva y debilitada del virus, por lo que puede causar síntomas similares a los de una infección.

La FDA dijo que en un estudio, el virus de la vacuna se detectó en la sangre de las personas en las primeras semanas después de haber sido vacunadas. La información de prescripción que viene con la vacuna incluye una advertencia para asegurarse de que los proveedores de atención médica informen a sus pacientes que no se sabe si el virus de la vacuna puede transmitirse de una persona embarazada a su recién nacido, y no está claro si el virus de la vacuna puede transmitirse y lastimar a un recién nacido. La advertencia indica a los proveedores que sopesen la amenaza del virus para el paciente, así como la edad gestacional y los riesgos de la enfermedad para el feto o el recién nacido.

Debido a que no existe un tratamiento específico para el chikungunya, los médicos suelen indicar a los pacientes que descansen, beban muchos líquidos y tomen medicamentos de venta libre para controlar la fiebre o el dolor. Pero los científicos dicen que una vacuna es la mejor opción para las personas vulnerables al virus.

"La infección por el virus chikungunya puede provocar enfermedades graves y problemas de salud prolongados, especialmente en adultos mayores e individuos con afecciones médicas subyacentes", dijo el Dr. Peter Marks, director del Centro de Evaluación e Investigación de Productos Biológicos de la FDA, en un comunicado de la agencia.

"La aprobación de hoy aborda una necesidad médica no cubierta y es un avance importante en la prevención de una enfermedad potencialmente debilitante con opciones de tratamiento limitadas", agregó.

La FDA exige que el fabricante de vacunas Valneva realice un estudio posterior a la comercialización para asegurarse de que la vacuna no presente riesgos graves.

Los efectos secundarios más comunes informados en los estudios presentados a la FDA para la aprobación de la vacuna incluyeron dolor de cabeza, dolor muscular y articular, fiebre, sensibilidad en el lugar de la inyección y cansancio. Casi el 2% de las personas que recibieron la vacuna tuvieron reacciones adversas graves similares a las del chikungunya que requirieron intervención médica. Solo dos de las casi 3.500 personas que participaron en los ensayos tuvieron que ir a un hospital debido a la reacción. Algunos también tuvieron una reacción adversa similar al chikungunya que duró al menos 30 días. La vacuna viene con una advertencia para alentar a los proveedores a discutir cualquier posible reacción que un paciente pueda tener a la vacuna.

Fuente: CNN Salud. Disponible en <https://acortar.link/GN6pqd>

Éxito de la vacuna cubana Abdala, pese a campaña en contra

13 nov. En Cuba no se han registrado muertes por COVID-19 desde hace año y medio, como resultado de las acciones que, a pesar del bloqueo económico, se han realizado para frenar la pandemia; entre éstas destacan el desarrollo de vacunas cuya eficacia contra el virus SARS-CoV2 está demostrada, incluso contra las nuevas variantes que la Organización Mundial de la Salud (OMS) ha clasificado de preocupación.

La experiencia de los científicos de la isla en el desarrollo de Abdala, su primer biológico, es peculiar porque las diferentes etapas del ensayo clínico coincidieron con los períodos en que circulaban las variantes beta, delta y ómicron. Así que en cada fase se comprobó la capacidad del producto para neutralizarlas, explicó Gerardo Guillén, director de Investigación Biomédica del Centro de Ingeniería Genética y Biotecnología (CIGB) de Cuba.



El especialista y Miladys Limonta, directora de Desarrollo de Negocios del CIGB, estuvieron en México la semana pasada para participar en el Congreso Nacional e Internacional de Ciencias Farmacéuticas. Antes de regresar a su país concedieron una entrevista a La Jornada para exponer la eficacia de Abdala y responder a los cuestionamientos que han revivido en las semanas recientes por ser, hasta ahora, el único biológico contra el covid disponible en México para la actual temporada de invierno.

Sin degradación

Mucho se ha discutido sobre la caducidad de la vacuna, pues la etiqueta de los frascos que se han empezado a aplicar en territorio nacional dice que la vigencia terminó en agosto de 2023. Limonta explicó que los registros para uso de emergencia fueron otorgadas por la autoridad sanitaria de Cuba con una vigencia de 12 meses, pero periódicamente, a los 18 y 24 meses, se han realizado pruebas, las cuales confirmaron que los lotes mantienen las condiciones de estabilidad y calidad para contrarrestar la infección por el coronavirus.

Debido a que las condiciones iniciales de producción de la vacuna no se han modificado, las que se han ido fabricando posteriormente salen con una fecha de caducidad de un año, pero se tiene la evidencia de que no se degradan, conservan la pureza y propiedades biológicas para prevenir complicaciones graves y muertes hasta dos años en la actualidad.

Otra crítica recurrente a la vacuna cubana es que no ha sido certificada por la OMS. Limonta informó que el expediente respectivo consta de cinco módulos y se retrasó la entrega del relativo a la caracterización físico-química y la producción.

Pendiente de aprobación, no rechazada

La razón de esto fue que por la emergencia sanitaria, al inicio Cuba utilizó una fábrica que ya tenía para producir Abdala, pero estaba en proceso la instalación de otra planta donde se daría continuidad a la manufactura del biológico. Con la información de estas nuevas instalaciones se completaría el expediente para la OMS.

El proceso de certificación se retrasó varios meses porque se requiere la validación de entidades internacionales y de la autoridad regulatoria de los sistemas, la tecnología y las pruebas de producción de los primeros lotes. De estos, además, se necesitan estudios de comparabilidad respecto a las vacunas fabricadas previamente.

El mayor problema, expuso, se dio con las instancias externas por la dificultad de Cuba para realizar las transacciones financieras y todavía se mantenía la emergencia sanitaria por la pandemia de COVID-19.

Limonta destacó que la OMS no rechazó en ningún momento la vacuna, sino que el proceso está pendiente. El CIGB está por presentar los documentos faltantes, pero ahora el organismo sanitario ya no tiene la necesidad ni urgencia de evaluar vacunas, y como Abdala, hay más de 30 biológicos en proceso de evaluación.

En el CIGB se crearon las vacunas durante 2021, cuando en los países desarrollados ya se aplicaban los biológicos de empresas transnacionales. La isla decidió realizar investigaciones científicas propias, como se ha hecho por décadas, porque a causa del bloqueo económico impuesto por Estados Unidos, las compras y transacciones financieras son muy complicadas, en ocasiones imposibles de realizar. Estaba claro que a Cuba no llegarían las vacunas, señaló Guillén.

Para lograr el objetivo en el CIGB se suspendieron los 30 proyectos de investigación en curso y todos nos enfocamos en COVID-19. Los científicos plantearon 16 líneas de investigación, de las cuales progresaron dos: Abdala y Soberana.

Ambas vacunas están disponibles en Cuba y se aplican de manera indistinta, ahora como refuerzo a los niños a partir de dos años de edad, adultos mayores y personas que viven con enfermedades crónicas.

Los estudios de eficacia de Abdala demostraron 92.28 por ciento de capacidad para neutralizar la acción del coronavirus.

Después, en los estudios de efectividad, cuando la vacuna ya se aplicaba ampliamente en la población, predominaba la variante delta y ya empezaba a circular ómicron. En esa oleada de transmisión del coronavirus, a escala global la cantidad de enfermos fue mucho más alta que con delta, mientras en Cuba, la incidencia y mortalidad fue 10 veces más baja, aseguró el experto.

Otros estudios efectuados para comprobar la eficacia de Abdala frente a las variantes y subvariantes de ómicron –que siguen siendo predominantes–, se hicieron con muestras de sangre tomadas de los participantes en el ensayo clínico y se corroboró que la vacuna reduce 50 por ciento la capacidad de contagio de SARS-CoV-2, lo cual es aceptable a escala internacional, pues se evitan las complicaciones graves y defunciones.

Seguridad garantizada

Guillén explicó que la plataforma tecnológica utilizada por el CIGB se conoce hace 30 años y con ella Cuba fabrica la vacuna contra hepatitis B, de la cual se han vendido cientos de millones de dosis en 50 países. Desde ahí está garantizada la seguridad de Abdala.

Todavía más, dijo, no requiere condiciones especiales de refrigeración, pues se conserva entre 2 y 8 grados centígrados y en la investigación se demostró que mantiene su estabilidad por un mes a 37 grados y por una semana a 45 grados. Esto es una ventaja para los países de ingresos medios y bajos, la mayoría de los cuales han tenido poco acceso a los inmunógenos contra el coronavirus, sostuvo.

En México, la vacuna Abdala tiene autorización de uso de emergencia para aplicarse en personas de 5 años de edad en adelante.

Fuente: La Jornada. Disponible en <https://acortar.link/YbQl9o>

Ministra Aguilera dice que nueva vacuna contra el Covid-19 llegará al país “probablemente a fines de esta semana o a inicios de la que viene”

15 nov. A poco más de un año desde que inició la campaña de inmunización con la vacuna bivalente contra el Covid-19, las autoridades chilenas decidieron implementar un nuevo refuerzo anual. Así lo adelantaba La Tercera ayer martes.

La ministra de Salud, Ximena Aguilera, oficializó la medida este miércoles, ante el incremento de casos en las últimas semanas. “Desde el año pasado, cuando yo llegué como ministra y pasamos a la fase de apertura en la pandemia, también informamos que nuestra política de inoculación iba a ser vacunar una vez al año la población de riesgo”, señaló tras participar de la ceremonia de inicio de obras de un nuevo Cesfam en Providencia.

La secretaria de Estado detalló que la nueva dosis, que reemplazará a la bivalente, “va a llegar probablemente a fines de esta semana o a principios de la semana que viene para ser incorporada al programa de vacunación”.

Es así como desde la próxima semana los grupos de riesgo -mayores de 60 años, pacientes inmunocomprometidos, profesionales de salud y personas con enfermedades crónicas- podrán inocularse con la vacuna monovalente contra la cepa XBB 1.5, la subvariante de ómicron que es la que más circula actualmente, dosis que el Instituto de Salud Pública en Chile autorizó el pasado 3 de noviembre.

“Chile se va a transformar en el primer país de Latinoamérica en tener a disposición la vacuna más actualizada disponible en el mundo, que es la vacuna monovalente contra la subvariante XBB 1.5. Por lo tanto, esta dosis entrega una mayor protección a las variantes actuales que están circulando a nivel comunitario”, afirmó ayer a La Tercera la subsecretaria de Salud Pública, Andrea Albagli.

Consultada respecto al laboratorio de procedencia de la inoculación, la ministra Aguilar informó que próximamente estarán publicando más especificaciones: “Lo vamos a dar en un comunicado, no tiene tanto sentido entrar en ese detalle en este momento”.

“Afortunadamente, el incremento de casos que hemos observado no es acompañado, como era en el pasado, de una presión asistencial en las camas críticas, sino que es con una forma mucho más fácil de responder. Eso es producto de la inmunidad que ha alcanzado la población gracias a las vacunas y también a la infección natural. Ciertamente que dentro del trabajo que se hace en relación a los programas de vacunación, las vacunas tienen que ir adaptadas. Y eso es lo que estamos tratando de hacer”, complementó.

Además, hizo un llamado a que las personas “recuerden que tienen que vacunarse, que vayan a la plataforma, que miren cuando se vacunaron, y empiecen nuevamente con este trabajo (...). Están los consultorios trabajando en ello, probablemente estos últimos días se estén agotando las vacunas anteriores y puede haber algún problema de acceso, pero justamente se está esperando la llegada de la nueva vacuna, a principios de la semana, que viene con más seguridad”.

Fuente: La Tercera. Disponible en <https://acortar.link/NxCG8F>



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Estrategia de búsqueda: *Vaccine in the title or abstract AND 20231101:20231115 as the publication date 77 records*

1.[WO/2023/207717](#) DEVELOPMENT AND USE OF BROAD-SPECTRUM VACCINE FOR H5N8 AVIAN INFLUENZA

WO - 02.11.2023

Clasificación Internacional [C12N 7/01](#) Nº de solicitud PCT/CN2023/089267 Solicitante NANJING ADVANCED ACADEMY OF LIFE AND HEALTH Inventor/a WANG, Guiqin

Provided are development and use of a broad-spectrum vaccine for H5N8 avian influenza, and particularly, provided are preparation methods for a recombinant protein vaccine, an inactivated vaccine and a nucleic acid vaccine, and use thereof. Experiments show that the prepared recombinant protein vaccine, inactivated vaccine and nucleic acid vaccine can effectively prevent infection with avian influenza virus.

2.[WO/2023/211281](#) ANTIVIRAL VACCINE COMPOSITION

WO - 02.11.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud PCT/NL2023/050232 Solicitante ERASMUS UNIVERSITY MEDICAL CENTER ROTTERDAM Inventor/a KATSIKIS, Peter D.

The present invention provides an antiviral vaccine composition, comprising a viral coat, matrix or core/capsid (glyco)protein as antigen, and an adjuvant combination of a CpG oligonucleotide and a STING agonist.

3.[20230348935](#) VACCINE COMPOSITIONS FOR MUCOSAL IMMUNE RESPONSE

US - 02.11.2023

Clasificación Internacional [A61K 9/19](#) Nº de solicitud 18246279 Solicitante NANT HOLDINGS IP, LLC Inventor/a Patrick SOON-SHIONG Vaccine compositions are provided that comprise a lyophilized, adenovirus-based expression vector, and a stabilizing compound, such as such as aragonite. Further provided are compositions that include a solid dosage form made from aragonite for loading and delivery of a vaccine composition.

4. [WO/2023/213946](#) NEW MULTIVALENT HVT VECTOR VACCINE

WO - 09.11.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud PCT/EP2023/061805 Solicitante INTERVET INTERNATIONAL B.V. Inventor/a LANGEREIS, Martijn, Alexander

The present invention regards a new recombinant HVT (rHVT) construct, useful as multivalent vector vaccine for poultry. The rHVT comprises 4 heterologous genes from poultry pathogens: the VP2 gene from IBDV, the F gene from NDV, and the gD and gl genes from ILTV. The VP2 and F genes are inserted in the Us genome region of the rHVT. The gD-gl genes are inserted in the UL genome region, between the UL54 and the LORF3 genes. The new rHVT-VP2-F-gD-gl proved to be genetically stable in vitro and in vivo, and expressed all inserted genes well. Also it was an effective vaccine against severe challenge infections with NDV, IBDV, and ILTV.

5. [20230346904](#) BACTERIAL AND VIRAL VACCINE STRATEGY

US - 02.11.2023

Clasificación Internacional [A61K 39/095](#) Nº de solicitud 17988688 Solicitante ORBIS HEALTH SOLUTIONS LLC Inventor/a Thomas E. Wagner

The present invention generally relates to compositions and methods for delivering a vaccine. The compositions and methods disclosed herein are particularly useful in making bacterial and viral vaccines

6. [20230355738](#) BACTERIOPHAGE-BASED, NEEDLE AND ADJUVANT-FREE, MUCOSAL COVID-19 VACCINE

US - 09.11.2023

Clasificación Internacional [A61P 37/04](#) Nº de solicitud 18138183 Solicitante The Catholic University of America Inventor/a Venigalla B. RAO

A bacteriophage T4-based, multivalent/multicomponent, needle and adjuvant-free, mucosal vaccine by engineering spike trimers on capsid exterior and nucleocapsid protein in the interior is disclosed herein. Intranasal administration of this T4-COVID vaccine induces higher virus neutralization antibody titers against multiple variants, balanced Th1/Th2 antibody and cytokine responses, stronger CD4⁺ and CD8⁺ T cell immunity, and higher secretory IgA titers in sera and bronchoalveolar lavage with no effect on the gut microbiota, compared to vaccination of mice intramuscularly. The vaccine is stable at ambient temperature, induce apparent sterilizing immunity, and provide complete protection against original SARS-CoV-2 strain and its Delta variant with minimal lung histopathology. This mucosal vaccine is an excellent candidate for boosting immunity of immunized and/or as a second-generation vaccine for the unimmunized population. This needle-free platform could be used to develop effective vaccines against many other respiratory infectious pathogens including Flu and any future emerging epidemic and pandemic pathogens.

7. [20230355748](#) DENGUE VACCINE UNIT DOSE AND ADMINISTRATION THEREOF

US - 09.11.2023

Clasificación Internacional [A61K 39/295](#) Nº de solicitud 18149742 Solicitante Takeda Vaccines, Inc. Inventor/a Derek WALLACE

The invention relates to a single unit dose of a dengue vaccine composition and methods and uses for preventing dengue disease and methods for stimulating an immune response to all four dengue virus serotypes in a subject or subject population. The unit dose of a dengue vaccine composition includes constructs of each dengue serotype, such as TDV-1, TDV-2, TDV-3 and TDV-4, at various concentrations in order to improve protection from dengue infection.

8. [20230346935](#) TUMOR COMPLEX ANTIGEN, MULTIVALENT DENDRITIC CELL (DC) VACCINE, AND USE THEREOF

US - 02.11.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 18246194 Solicitante Helen LIU Inventor/a Helen LIU

A tumor complex antigen, a multivalent dendritic cell (DC) vaccine, and a use thereof are provided. In the present disclosure, monocytes of a patient are stimulated in vitro, loaded with a variety of tumor cell lysates with strong immunogenicity against different Epstein-Barr virus (EBV)-associated tumors, and induced into mature dendritic cells (mDCs) by various cytokines and specific agonists to obtain a complete DC vaccine with corresponding tumor antigens. The DC vaccine can be injected back into the patient to activate an immune system, stimulate innate immunity (such as inducing natural killer (NK) cells), and stimulate lymphocytes to produce an acquired immune response and cytotoxic T cells, thereby accurately killing tumor cells. Compared with radiotherapy and chemotherapy, the DC vaccine is particularly safe and has almost no side effects. In addition, the production of the DC vaccine involves a short production cycle of about 1 week and a low cost.

9.[WO/2023/209556](#) A BACTERIOPHAGE-BASED, NEEDLE AND ADJUVANT-FREE, MUCOSAL COVID-19 VACCINE

WO - 02.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud PCT/IB2023/054229 Solicitante THE CATHOLIC UNIVERSITY OF AMERICA Inventor/a RAO, Venigalla B.

A bacteriophage T4-based, multivalent/multicomponent, needle and adjuvant-free, mucosal vaccine by engineering spike trimers on capsid exterior and nucleocapsid protein in the interior is disclosed herein. Intranasal administration of this T4-COVID vaccine induces higher virus neutralization antibody titers against multiple variants, balanced Th1/Th2 antibody and cytokine responses, stronger CD4⁺ and CD8⁺ T cell immunity, and higher secretory IgA titers in sera and bronchoalveolar lavage with no effect on the gut microbiota, compared to vaccination of mice intramuscularly. The vaccine is stable at ambient temperature, induce apparent sterilizing immunity, and provide complete protection against original SARS-CoV-2 strain and its Delta variant with minimal lung histopathology. This mucosal vaccine is an excellent candidate for boosting immunity of immunized and/or as a second-generation vaccine for the unimmunized population. This needle-free platform could be used to develop effective vaccines against many other respiratory infectious pathogens including Flu and any future emerging epidemic and pandemic pathogens.

10.[4271405](#) IMMUNOGENE UND IMPFSTOFFZUSAMMENSETZUNGEN GEGEN SCHWEINEDYSENTERIE

EP - 08.11.2023

Clasificación Internacional [A61K 39/02](#) Nº de solicitud 21845070 Solicitante HIPRA SCIENT S L U Inventor/a OSORIO ARGUELLO JESÚS MARÍA

The invention relates to an immunogenic or vaccine composition comprising an inactivated bacterium from the species *Brachyspira hyodysenteriae*, to a method for producing said composition and to the medical use of this composition for inducing an immune response against a bacterium from the species *Brachyspira hyodysenteriae* or for protecting against an infection caused by a bacterium from the species *Brachyspira hyodysenteriae*. Further, the invention relates to a method for selecting a bacterium from the species *Brachyspira hyodysenteriae* useful for manufacturing a vaccine against swine dysentery.

11.[20230346924](#) MRNA VACCINE COMPRISING ADJUVANT CAPABLE OF KINETIC CONTROL

US - 02.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 18040318 Solicitante PROGENEER INC. Inventor/a Yong Taik Lim

The present invention relates to an mRNA vaccine comprising an adjuvant of which an immune activating function is kinetically controlled and, more specifically, to an mRNA vaccine comprising an adjuvant characterized in that, after mRNA is transcribed into proteins, the activating function of the adjuvant is sequentially active. The present invention relates to a key technology for optimizing the time interval between mRNA antigen expression and immune activation in order to effectively control antigen expression and antigen immunogenicity, which conflict. In order to optimize an mRNA antigen expression amount and the active time of an adjuvant, the present invention provides a key technology, which kinetically controls the action of an immune activating substance to increase the expression amount and immunogenicity of an antigen at the same time, and thus remarkably increases the efficacy of an mRNA vaccine.

12. [20230346901](#) METHODS AND VACCINE COMPOSITIONS TO TREAT CANCERS

US - 02.11.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17786908 Solicitante INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE Inventor/a Jean-Luc POYET

The present invention relates to a method for obtaining a population of oncogenic cells modified comprising the following steps: i) obtaining a population of oncogenic cells from a subject suffering from a cancer; and ii) treating said cells with a fusion protein comprising an AAC-11 leucine-zipper (LZ) derived peptide which is fused to at least one heterologous polypeptide. Inventors have evaluated here the antileukemic efficacy of RT53, an anticancer peptide with potential immunological properties. Their results indicate that RT53 possesses a direct antileukemic effect, even at late stage. They also demonstrated that single injection of a vaccine consisting of leukemic blasts exposed to RT53, which induces the hallmarks of immunogenic cell death, was highly effective in preventing leukemia development in both prophylactic and therapeutic settings. The vaccine comprising RT53-treated APL cells generated long-term antileukemic protection and depletion experiments indicated that CD4+ T cells were of crucial importance for vaccine efficacy. Combined, their results provide the rational for the exploration of RT53-based therapies for the treatment of cancer, such as acute leukemia.

13. [20230346913](#) PRODUCTION OF FLU VACCINE IN MYCELIOPHTHORA THERMOPHILA

US - 02.11.2023

Clasificación Internacional [A61K 39/145](#) N° de solicitud 18350646 Solicitante DYADIC INTERNATIONAL INC. Inventor/a Mark EMALFARB

Recombinant expression of influenza virus surface proteins in the fungus *Myceliophthora thermophila* strain C1 is provided. The recombinant proteins are for use in influenza vaccine compositions.

14. [4272755](#) KOMBINIERTER IMPFSTOFF ZUR PRÄVENTION VON HAND-, FUSS- UND MUNDERKRANKUNGEN, HERSTELLUNGSVERFAHREN DAFÜR UND VERWENDUNG DAVON

EP - 08.11.2023

Clasificación Internacional [A61K 39/125](#) N° de solicitud 20967606 Solicitante SINOVAC BIOTECH CO LTD Inventor/a LI YAJING

Disclosed is a combination vaccine for preventing HFMD, comprising inactivated Enterovirus type 71, and inactivated Coxsackievirus A group type 16, type 10 and type 6. Also disclosed is the method for the preparation of the combination vaccine. The adsorption effect and stability of the prepared vaccine are good. The above antigens do not interfere with each other's antigenicity and immune effect after immunizing the subject, and have good immunogenicity and safety. The application of the combination vaccine can significantly simplify the vaccination process, improve vaccination efficiency and reduce costs.

15. [20230355742](#) FUSION GENE, RECOMBINANT NOVEL CORONAVIRUS HIGH-EFFICIENCY IMMUNE DNA VACCINE, CONSTRUCTION METHOD AND USE THEREOF

US - 09.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 18013663 Solicitante Aurora Genevac Biotech Co., Ltd. Inventor/a Jiyun YU

A fusion gene, a recombinant novel coronavirus high-efficiency immune DNA vaccine, a construction method and use thereof are provided. The immune DNA vaccine ZD-nCor19 provided herein uses RBD protein, residues 301-538 in the S2 subunit and residues 138-369 in the N protein of the novel coronavirus as target antigens, and has specific immune synergism molecules introduced at suitable positions, and thus can simultaneously efficiently induce humoral immunity and cellular immunity, and can avoid safety problems associated with ADE that may be generated by the full-length S protein and the full-length N protein, thereby achieving dual effects of prevention and treatment. The vaccine can be used as a safe, efficient and stable vaccine variety against novel coronavirus infection.

16. [20230346905](#) PENTAVALENT VACCINE AGAINST NEISSERIA MENINGITIDIS COMPRISING A SYNTHETIC MEN A ANTIGEN

US - 02.11.2023

Clasificación Internacional [A61K 39/095](#) Nº de solicitud 18042355 Solicitante GlaxosmithKline Biologicals SA Inventor/a Roberto ADAMO

The inventors have identified a combined vaccine for immunisation against bacterial meningitis caused by multiple pathogens.

17. [4267179](#) MULTIVALENT HVT-VEKTORIMPFSTOFF

EP - 01.11.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud 21847469 Solicitante INTERVET INT BV Inventor/a LANGEREIS MARTIJN ALEXANDER

The present invention regards recombinant HVT (rHVT) constructs, useful as multivalent vector vaccine for poultry. The rHVT comprise 4 heterologous genes from poultry pathogens: the VP2 gene from IBDV, the F gene from NDV, and the gD and gl genes from ILTV. The VP2 and F genes are inserted in the Us genome region of the rHVT. The gD-gl genes are inserted in the UL genome region, either between UL44 and UL45, or between UL45 and UL46. The rHVTs proved to be genetically stable in vitro and in vivo, and expressed all inserted genes well enough to induce protective immunity in vaccinated poultry against IBDV, NDV, and ILTV.

18. [4267182](#) TEMPERATURSTABILE NUKLEINSÄUREVERFAHREN ZUR HERSTELLUNG EINES IMPFSTOFFS

EP - 01.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 21916373 Solicitante GJERDE DOUGLAS T Inventor/a GJERDE DOUGLAS T

Nucleic acid and the nanocomplex reagents are combined to create a vaccine. They are stable and stored separately without degradation. The vaccine components can be stored at a wide range of temperatures. The nucleic acids are stabilized and stored in a column, syringe, vial or chamber as a solid, lyophilized or precipitated. They may be stored on a solid phase surface through electrostatic forces, non-polar interactions, hydrogen bonding, polar interactions or any other mechanism. The solid surface may be media in a column which may be contained in a syringe. Nucleic acid vaccines are prepared by a two-step process. The nucleic acid component is first stabilized and then mixed with nanocomplex reagents, particle forming reagents or other reagents.

19. [4267727](#) GENOMISCHE DELETION IN DER AFRIKANISCHEN SCHWEINEPEST-IMPFUNG, DIE EIN EFFIZIENTES WACHSTUM IN STABILEN ZELLINNEN ERLAUBT

EP - 01.11.2023

Clasificación Internacional [C12N 7/00](#) Nº de solicitud 21911760 Solicitante US AGRICULTURE Inventor/a GLADUE DOUGLAS P

Provided herein are details on the construction of a recombinant African Swine Fever Virus (ASFV) live attenuated vaccine for prevention of ASF caused by various strains of ASFV, such as the highly virulent Georgia 2007 isolate ("ASFV-G"). An exemplary vaccine comprises a deletion of multiple genes allowing for industrial-scale growth in stable cell lines.

20.[4271698](#) STABILE CORONAVIRUSPROTEINE UND IMPFSTOFFZUSAMMENSETZUNGEN DARAUS

EP - 08.11.2023

Clasificación Internacional [C07K 14/165](#) Nº de solicitud 21916103 Solicitante UNIV WASHINGTON Inventor/a ELLIS DANIEL

Provided herein are compositions and methods comprising mutated coronavirus "S" spike proteins or receptor binding domains thereof that have an increased expression level, yield and stability compared to its corresponding native or wild-type coronavirus spike protein under the same expression, culture or storage conditions. These mutated spike proteins can be used for generating a protein-based vaccine against one or more coronaviruses.

21.[20230346925](#) TRIPLE VACCINE PROTECTS AGAINST BACTERIAL AND FUNGAL PATHOGENS VIA TRAINED IMMUNITY

US - 02.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 18213127 Solicitante University of Southern California Inventor/a Brad Spellberg

An optimized protein-free tripartite vaccine that protects against lethal blood and lung infections caused by a variety of nosocomial pathogens across taxonomic kingdoms, including Gram-positive bacteria, Gram-negative bacteria, and fungi.

22.[WO/2023/210722](#) IMMUNOACTIVATOR, VACCINE ADJUVANT, AND METHOD FOR INDUCING IMMUNITY

WO - 02.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud PCT/JP2023/016572 Solicitante TEIKYO UNIVERSITY Inventor/a SUZUKI Ryo

In order to provide an immunoactivator capable of enhancing both humoral immunity and cellular immunity, the active ingredient of the immunoactivator being derived from cell walls (derived from a natural product), to provide a vaccine adjuvant, and to provide a method for inducing immunity, the method having a step for administering the immunoactivator, an immunoactivator according to the present invention has particles having a maximum diameter within the range of 1-800 nm as the active ingredient, the particles being composed of cell-wall-derived polysaccharides.

23.[4272762](#) VERFAHREN ZUR HERSTELLUNG VON BETULIN ALS ADJUVANS IN EINEM IMPFSTOFF GEGEN CORONAVIRUS SARS-COV-2

EP - 08.11.2023

Clasificación Internacional [A61K 47/10](#) Nº de solicitud 21915924 Solicitante BETUVAKS LLC Inventor/a ISAEV ARTUR ALEXANDROVICH

The invention relates to biotechnology, and specifically to a method for creating the adjuvant betulin, suitable for preparing a vaccine against coronavirus SARS-CoV-2. The method consists in sterilizing filtration of a solution of betulin in tetrahydrofuran through a nylon membrane with a pore diameter of 0.22 µm, decreasing the tetrahydrofuran content by adding a 25-fold volume of sterile 0.01 M tris-buffer (pH 9.0±0.1), and subsequently homogenizing by ultrasound until a homogeneous suspension results,

forming spherical amorphous homogeneous particles suitable for binding proteins of the SARS-CoV-2 virus. The proposed technique makes it possible to produce betulin with high sterility and immunogenicity, which improves the quality of the vaccine against the coronavirus.

24. [4267178](#) RNA-IMPFSTOFF GEGEN SARS-COV-2-VARIANTEN

EP - 01.11.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud 21836244 Solicitante CUREVAC SE Inventor/a ROTH NICOLE

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

25. [4267176](#) CHLAMYDIA-IMPFSTOFF AUF BASIS DES MOMP-VS4-ANTIGEN-TARGETING AUF ANTIGENPRÄSENTIERENDEN ZELLEN

EP - 01.11.2023

Clasificación Internacional [A61K 39/118](#) Nº de solicitud 21843731 Solicitante INST NAT SANTE RECH MED Inventor/a LEVY YVES

Chlamydiae are intracellular bacterial pathogens responsible for a variety of infections. The inventors produced an antibody that is directed against a surface antigen (i.e., CD40) of an antigen presenting cell (i.e., dendritic cell) wherein the heavy chain and/or light chain is conjugated to the MOMP VS4 domain of *Chlamydia trachomatis* for its use as vaccine.

26. [20230357364](#) COVID-19 ANTIBODIES AND USES THEREOF

US - 09.11.2023

Clasificación Internacional [C07K 16/10](#) Nº de solicitud 17923313 Solicitante International AIDS Vaccine Initiative, Inc. Inventor/a Devin Sok

The present application is directed to recombinant monoclonal antibodies, or antigen fragments thereof that bind a Spike protein of SARS-CoV-2. Methods of using the antibodies to treat or prevent SARS-CoV-2 (COVID-19) are also disclosed.

27. [20230348856](#) PHARMACEUTICAL COMPOSITION, AND PREPARATION METHOD THEREFOR AND APPLICATION THEREOF

US - 02.11.2023

Clasificación Internacional [C12N 5/0784](#) Nº de solicitud 18190199 Solicitante BGI SHENZHEN Inventor/a Yuping GE

A method for activating an adaptive immune response by adding allogeneic dendritic cells (DCs) and/or viral antigen peptides to conventional DC vaccines to expand the DC vaccine antigen spectrum with the aid of exogenous DC effect, thereby enhancing the anti-tumor effect of the DC vaccine.

28. [20230346915](#) Production Of Vaccines Comprising Inactivated SARS-COV-2 Viral Particles

US - 02.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 17905700 Solicitante Colorado State University Research Foundation Inventor/a Raymond P. Goodrich

Provided herein are methods for inactivating a viral particle, the methods comprising contacting the viral particle with UV light in the presence of riboflavin. In some embodiments, the viral particle is a SARS-

CoV-2 particle. Vaccine compositions comprising inactivated viral particles (e.g., inactivated SARS-CoV-2 particles) are also provided. In some embodiments, the vaccine compositions comprise an adjuvant capable of promoting a Th1-type immune response.

29.[4267181](#)NUKLEINSÄURESTABILISIERENDE LÖSUNG FÜR IMPFSTOFFE, THERAPIE, DIAGNOSTIK, LAGERUNG UND TRANSPORT

EP - 01.11.2023

Clasificación Internacional [A61K 39/285](#) Nº de solicitud 21911865 Solicitante DAYKIN MOLECULAR SYSTEMS LLC Inventor/a AGHAJANI ERIK

Chemical compositions and/or mixtures that allow nucleic acid to remain stable at ambient temperatures. The disclosed technology includes a solution and manufacturing methods thereof. The solution includes a chelating agent, a buffering agent, and a salt. The solution is configured to protect RNA and/or an RNA-based vaccine added to the solution and prevents or reduces degradation of the RNA and/or the RNA-based vaccine for a duration of 2 to 180 days over a temperature range of -20 degrees C to + 38 degrees C. The chelating agent can comprise ethylenediaminetetraacetic acid (EDTA). The buffering agent can comprise tris(hydroxymethyl)aminomethane (TRIS). The salt can comprise NaCl. The solution is configured to preserve an injectable mRNA vaccine added to the solution, and the solution is safe for injection into mammals.

30.[20230346910](#)INACTIVATING PATHOGENS AND PRODUCING HIGHLY IMMUNOGENIC INACTIVATED VACCINES USING A DUAL OXIDATION PROCESS

US - 02.11.2023

Clasificación Internacional [A61K 39/145](#) Nº de solicitud 18136808 Solicitante Najít Technologies, Inc. Inventor/a Ian J. Amanna

Provided are surprisingly effective methods for inactivating pathogens, and for producing highly immunogenic vaccine compositions containing an inactivated pathogen rendered noninfectious by exposure to a Fenton reagent, or by exposure to a Fenton reagent or a component thereof in combination with a methisazone reagent selected from the group consisting of methisazone, methisazone analogs, functional group(s)/substructure(s) of methisazone, and combinations thereof. The methods efficiently inactivate pathogens, while substantially retaining pathogen antigenicity and/or immunogenicity, and are suitable for inactivating pathogens, or for the preparation of vaccines for a wide variety of pathogens with genomes comprising RNA or DNA, including viruses and bacteria. Also provided are highly immunogenic inactivated vaccine compositions prepared by using any of the disclosed methods, and methods for eliciting an immune response in a subject by administering such vaccine compositions.

31.[20230346920](#)VACCINES AGAINST VIRAL PATHOGENS

US - 02.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 17997886 Solicitante Hexamer Therapeutics, Inc. Inventor/a Keith Douglas Miller

The present disclosure describes a unique viral peptide (VP) vaccine for preventing or treating viral diseases. The vaccine is produced synthetically and includes no production steps in biological cells (e.g. *E. coli*, CHO cells, yeast cells) that would require subsequent endotoxin assays/removal or viral clearance procedures. The hC peptide is synthesized separately from the VP, and following self-assembly of the hC, the VP is covalently coupled to form the VP-hC conjugate which can serve as a vaccine for preventing or treating viral diseases. The hC includes heptad repeats following a specific pattern. Optionally, the VP-hC conjugate further includes one or more T-cell epitopes at the N- and/or C-terminus of the one or more amphipathic alpha-helices. The present disclosure also describes compositions comprising immunogenic compositions including VP-hC conjugate.

32.[20230346908](#)MHC CLASS I ASSOCIATED PEPTIDES FOR PREVENTION AND TREATMENT OF MULTIPLE FLAVI VIRUS

US - 02.11.2023

Clasificación Internacional [A61K 47/69](#) Nº de solicitud 18332022 Solicitante Emergex Vaccines Holding Limited Inventor/a Ramila Philip

The invention provides a vaccine composition comprising a flavi peptide comprising one or more CD8+ T cell epitopes.

33.[4267180](#)CORONAVIRUS-IMPFSTOFF

EP - 01.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 21908159 Solicitante UNIV MELBOURNE Inventor/a GODFREY DALE IAN

The present invention relates to chimeric and fusion proteins and their compositions, and the use of such proteins and compositions in the prevention and/or treatment of coronavirus infections, or respiratory diseases or conditions associated with coronavirus infections.

34.[20230346909](#)NOVEL SEVERE FEVER WITH THROMBOCYTOPENIA SYNDROME VIRUS

US - 02.11.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud 18348323 Solicitante I.D.BIO. Inventor/a Yeo-Jeong CHOI

The present invention relates to a novel genotype of severe fever with thrombocytopenia syndrome viruses and use thereof as an immunogenic composition. The severe fever with thrombocytopenia syndrome viruses of the present invention are genetically different from conventional severe fever with thrombocytopenia syndrome viruses and are novel viruses taxonomically belonging to three sub-groups of genotype B. In view of the vaccine property that specific genotype viruses alone show only limited protective potential, the novel viruses of the present invention may be advantageously used as a vaccine having excellent cross-immunogenicity for SFTSV.

35.[WO/2023/211279](#)ADJUVANT COMBINATIONS FOR NEOPEPTIDE VACCINES

WO - 02.11.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud PCT/NL2023/050230 Solicitante ERASMUS UNIVERSITY MEDICAL CENTER ROTTERDAM Inventor/a KATSIKIS, Peter D.

The present invention provides an anti-cancer vaccine composition comprising a cancer neoantigen comprising a CTL epitope, the composition further comprising as adjuvants a combination of a CpG oligonucleotide and a STING agonist.

36.[WO/2023/206865](#)VACCINATION VERIFICATION SYSTEM AND METHOD BASED ON SMART CONTRACT, AND CONTRACT PLATFORM

WO - 02.11.2023

Clasificación Internacional [G06F 21/45](#) Nº de solicitud PCT/CN2022/112336 Solicitante FANG, Weihang Inventor/a FANG, Weihang

Disclosed in the present application are a vaccination verification system and method based on a smart contract, and a contract platform. The vaccination verification system and method based on a smart contract, and the contract platform, which are provided in the present invention, can realize the decentralization of applications, such that a first client, which serves as an inoculator, a second client, which serves as a medical worker, and the contract platform can achieve high-level mutual trust; and the participation of human factors is reduced, thereby preventing information leakage and imposter phenomenon, and facilitating the rapid popularization of vaccines. In addition, vaccine manufacturers can also plan vaccine production according to registration information.

37. [20230348864](#) INFLUENZA VIRUSES WITH MUTANT PB2 GENE SEGMENT AS LIVE ATTENUATED VACCINES

US - 02.11.2023

Clasificación Internacional [C12N 7/00](#) Nº de solicitud 17835830 Solicitante Wisconsin Alumni Research Foundation (WARF) Inventor/a Yoshihiro Kawaoka

The invention provides a recombinant biologically contained influenza virus that is a PB2 knockout virus, e.g., one that is useful to generate a multivalent vaccine, and methods of making and using that virus.

38. [202303484681](#) 1H-PYRAZOLO[4,3-d]PYRIMIDINE COMPOUNDS AS TOLL-LIKE RECEPTOR 7 (TLR7) AGONISTS

US - 02.11.2023

Clasificación Internacional [C07D 487/04](#) Nº de solicitud 17793278 Solicitante BRISTOL-MYERS SQUIBB COMPANY Inventor/a Matthew COX

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

39. [20230355763](#) NANOPARTICLE VACCINES AND USES THEREOF FOR PROPHYLAXIS AND TREATMENT OF ATHEROSCLEROSIS USING PEPTIDE 210 AS AN ANTIGEN

US - 09.11.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 18312194 Solicitante CEDARS-SINAI MEDICAL CENTER Inventor/a Prediman K. Shah

Described herein are nanoparticle bound self-antigens as an immune and vaccine formulations to elicit self-regulations and reduce atherosclerosis. The use of apolipoprotein B100 (ApoB-100) peptide P210 was investigated in self-assembling peptide amphiphile micelles (P210-PAM) as a vaccine formulation to reduce atherosclerosis in ApoE^{-/-} mice. Demonstrated herein, P210 provided T cell activation and memory response in peripheral blood mononuclear cells of human subjects with atherosclerotic cardiovascular disease, and dendritic cell uptake of P210-PAM and its co-staining with major histocompatibility complex class I (MHC-I) molecules supported its use as an immunogenic composition. In ApoE^{-/-} mice, immunization with P210-PAM dampened P210-specific CD4⁺ T cell proliferative response and CD8⁺ T cell cytolytic response, modulated macrophage phenotype, and significantly reduced aortic atherosclerosis. P210-PAM immunization also reduced atherosclerosis in chimeric mice with human MHC-I allele.

40. [3868741](#) SAMMENSÆTNING OMFATTENDE EN PYRIMIDINFORBINDELSE OG ET PATOGENAFLEDT ANTIGEN

DK - 06.11.2023

Clasificación Internacional [C07D 239/49](#) Nº de solicitud 21164640 Solicitante Sumitomo Pharma Co., Ltd. Inventor/a KIMURA, Hidenori

The present invention provides a compound of the formula (1) :wherein X, R¹, R², R³, R⁴, R⁵, R⁶, Y¹, Y², L, and m are as defined in the description, and a pharmaceutically acceptable salt thereof, which are useful as a vaccine adjuvant.

41. [WO/2023/208990](#) COMBINATION THERAPY FOR THE TREATMENT OF CANCER COMPRISING A FAS AXIS ANTAGONIST AND A T-REG CELL DEPLETING AGENT ANTAGONIST,

WO - 02.11.2023

Clasificación Internacional [A61K 39/395](#) Nº de solicitud PCT/EP2023/060899 Solicitante F. HOFFMANN-LA ROCHE AG Inventor/a AMANN, Maria

The present disclosure is directed to the combination of a Fas axis antagonist, such as an anti-FasL antibody, and a Treg cell depletion therapy, for example an anti-CD25 antibody, optionally with a cancer vaccine, for use in the treatment of cancer.

42.[20230357327](#)PREFUSION-STABILIZED HMPV F PROTEINS

US - 09.11.2023

Clasificación Internacional [C07K 14/08](#) Nº de solicitud 18296771 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a Jason MCLELLAN

Provided herein are engineered hMPV F proteins. In some aspects, the engineered F proteins exhibit enhanced conformational stability and/or antigenicity. Methods are also provided for use of the engineered F proteins as diagnostics, in screening platforms, and/or in vaccine compositions.

43.[4268899](#)FERRITIN-NANOPARTIKEL MIT CHEMOTHERAPEUTISCHEM MITTEL

EP - 01.11.2023

Clasificación Internacional [A61P 35/00](#) Nº de solicitud 23184063 Solicitante COLEMAN SRL Inventor/a MAZZUCCHELLI SERENA

The present invention concerns the field of cancer therapy, and in particular to the use of nanoparticles for the preservation of T cells. In particular, the present invention relates to the use of nanoparticles for the treatment of recurrent cancer and for use as a cancer vaccine.

44.[WO/2023/214082](#)SIGNAL SEQUENCES FOR NUCLEIC ACID VACCINES

WO - 09.11.2023

Clasificación Internacional [A61K 39/02](#) Nº de solicitud PCT/EP2023/062066 Solicitante SANOFI Inventor/a GIRERD-CHAMBAZ, Yves

Provided herein is a nucleic acid (e.g., messenger RNA) vaccine encoding at least one antigenic prokaryotic polypeptide linked to one or both of a viral secretion signal peptide and a transmembrane domain. Also provided are methods of vaccination against a prokaryotic infection with the nucleic acid described herein.

45.[20230355751](#)COMPOSITIONS AND METHODS FOR A MULTI-ADJUVANT ONLY APPROACH TO IMMUNOPROPHYLAXIS FOR PREVENTING INFECTIONS

US - 09.11.2023

Clasificación Internacional [A61K 39/39](#) Nº de solicitud 18142216 Solicitante University of Southern California Inventor/a Brad Spellberg

This disclosure provides a new vaccine composition and methods for its use. The composition contains an effective amount of each of: an aluminum hydroxide, a mono-phosphoryl lipid (MPL), and a whole glucan particles (WGP) but no an antigen that raises an immune response against a bacterial or fungal infection.

46.[4271417](#)GLYCOSYLIERTES KLEBSIELLA PNEUMONIAE-O-ANTIGEN UND VERFAHREN ZUR HERSTELLUNG UND VERWENDUNGEN DAVON

EP - 08.11.2023

Clasificación Internacional [A61K 47/65](#) Nº de solicitud 21916427 Solicitante VAXNEWMO LLC Inventor/a HARDING CHRISTIAN

Provided herein is a bioconjugate comprising a *K. pneumoniae* O-antigen covalently linked to a fusion protein comprising a ComP protein or a glycosylation tag fragment. The *K. pneumoniae* O-antigen bioconjugate of this disclosure can be used as a conjugate vaccine including multivalent conjugate vaccines comprising multiple *K. pneumoniae* O-antigens.

47.[WO/2023/208076](#)CATIONIC LIPID NANOPARTICLE HAVING HIGH TRANSECTION EFFICIENCY AND PREPARATION METHOD THEREFOR

WO - 02.11.2023

Clasificación Internacional [A61K 9/51](#) Nº de solicitud PCT/CN2023/090998 Solicitante BEIJING D-NANO PHARMA CO., LTD Inventor/a TONG, Shuwen

A nucleic acid-loaded calcium-containing cationic lipid nanoparticle, comprising a cationic lipid, a neutral lipid, a PEGylated lipid, and cholesterol and/or a cholesterol ester. The cationic lipid nanoparticle can be used for preparing a gene-based drug for localized injection into the body or a nucleic acid vaccine for localized or whole-body injection into the body.

48.[4268817](#) VERWENDUNG EINES PCSK9-INHIBITORS BEI DER HERSTELLUNG EINES PRODUKTS ZUR BEHANDLUNG MEHRERER ERKRANKUNGEN

EP - 01.11.2023

Clasificación Internacional [A61K 31/437](#) Nº de solicitud 21833682 Solicitante CHEN MIN Inventor/a WANG YICHEN

Provided in the present invention is the use of a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor in a product for treating multiple diseases. The PCSK9 inhibitor is a PCSK9 small molecule compound, or a PCSK9 interfering RNA, or a PCSK9 monoclonal antibody, or a PCSK9 mimetic peptide, or a PCSK9 mimetic antibody protein, or a PCSK9 antisense oligonucleotide or a PCSK9 vaccine.

49.[20230346773](#) USE OF PCSK9 INHIBITOR IN PREPARATION OF PRODUCT FOR TREATING MULTIPLE DISEASES

US - 02.11.2023

Clasificación Internacional [A61K 31/4725](#) Nº de solicitud 18024010 Solicitante Min CHEN Inventor/a Min CHEN

Provided in the present invention is the use of a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor in a product for treating multiple diseases. The PCSK9 inhibitor is a PCSK9 small molecule compound, or a PCSK9 interfering RNA, or a PCSK9 monoclonal antibody, or a PCSK9 mimetic peptide, or a PCSK9 mimetic antibody protein, or a PCSK9 antisense oligonucleotide or a PCSK9 vaccine.

50.[WO/2023/212668](#) METHOD FOR ENHANCING IMMUNITY

WO - 02.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud PCT/US2023/066330 Solicitante XANADU BIO, INC. Inventor/a IWASAKI, Akiko

The invention relates to a method of enhancing immunity, mRNA-based vaccines for SARS-CoV-2 have demonstrated the enormous potential of mRNA therapeutics for safe and effective use in the general population. However, more recent studies have demonstrated decreasing vaccine effectiveness in terms of asymptomatic infection as well as symptomatic and severe infections starting around 4 months post second dose with mRNA-lipid nanoparticles (LNP) based regimens.

51.[WO/2023/215869](#) INACTIVATED STAPHYLOCOCCUS COMPOSITIONS AND METHODS OF MAKING AND USING THE SAME

WO - 09.11.2023

Clasificación Internacional [A61K 39/085](#) Nº de solicitud PCT/US2023/066663 Solicitante BIOLOGICAL MIMETICS, INC. Inventor/a DOLLERY, Stephen J.

Presented herein are inactivated Staphylococcal bacterial immunogens. Also described herein are compositions including Staphylococcal immunogens. Methods for preparing and using the same are also described. Immunogens may enable a host immune response that can protect the host from infection and/or disease. Differential analysis of antigens that stimulate protective (immunogenic) and non-protective immunity can be used to identify correlates of protection that can be developed as subunit vaccine candidates.

52. [4267550](#) IONISIERBARE LIPIDE

EP - 01.11.2023

Clasificación Internacional [C07C 271/20](#) Nº de solicitud 21840972 Solicitante ETHERNA

IMMUNOTHERAPIES NV Inventor/a DE KOKER STEFAAN

The present invention generally relates to the field of ionizable (also termed cationic) lipids, and in particular provides a novel type of such lipids as represented by formula (I). The present invention further provides methods for making such lipids as well as uses thereof, in particular in the preparation of nanoparticle compositions, more in particular nanoparticle compositions comprising nucleic acids. It further provides vaccine formulations comprising nanoparticle compositions based on the ionizable lipids disclosed herein.

53. [WO/2023/214801](#) UTR SEQUENCE FOR CONTROLLING PROTEIN EXPRESSION LEVEL AND EXPRESSION LOCATION, AND mRNA SEQUENCE INCLUDING SAME

WO - 09.11.2023

Clasificación Internacional [C12N 15/11](#) Nº de solicitud PCT/KR2023/006052 Solicitante INDUSTRY-ACADEMIC COOPERATION FOUNDATION, DANKOOK UNIVERSITY Inventor/a JEONG, Sunjoo

The present invention relates to an mRNA including the UTR of polymorphic β-catenin. When used, the mRNA molecule, nucleic acid molecule, expression construct, and/or expression vector of the present invention can effectively enhance the expression efficiency of a target protein and extend the expression location of the target protein to the cytoplasm, thus allowing for stable extracellular secretion. In addition, the mRNA functions to regulate an expression level of exogenously introduced mRNA and thus can be utilized as an mRNA vaccine in the future.

54. [20230357325](#) COMPOSITION AND METHOD TO STABILIZE CORONAVIRUS SPIKE GLYCOPROTEINS IN PRE-FUSION CONFORMATION

US - 09.11.2023

Clasificación Internacional [C07K 14/005](#) Nº de solicitud 18314769 Solicitante The Research Foundation for The State of University New York Inventor/a Carlos Simmerling

Compositions include coronavirus S1/S2 prefusion spike proteins with specifically designed disulfide bond that "staple" together the central helix and a region of the spike known as HR1. By preventing HR1 from detaching from CH, the prefusion spike structure is stabilized without rigidification of the central helix or changes to its interaction with the receptor binding domain. This disulfide-stapled spike is more stable in the prefusion form, allowing for a stable vaccine without the need for the stabilizing mutations that are currently in use.

55. [20230346921](#) CIRCULAR RNA VACCINES AND METHODS OF USE THEREOF

US - 02.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 18022488 Solicitante Peking University Inventor/a Wensheng WEI

The present application provides circular RNAs (circRNAs) encoding therapeutic polypeptides (e.g., an antigenic polypeptide, a functional protein, a receptor protein, or a targeting protein). In some embodiments, the present application provides circRNA vaccines against a coronavirus such as SARS-CoV-2. In some embodiments, the circRNA vaccine comprises a circRNA comprising a nucleic acid sequence encoding an antigenic polypeptide comprising a Spike (S) protein or a fragment thereof of a coronavirus. Also provided are methods of treating or preventing a disease or condition using the circRNAs or compositions thereof.

56. [WO/2023/209261](#) USO IN VITRO DEL ETINILESTRADIOL PARA INCREMENTAR EL CRECIMIENTO VÍRICO

WO - 02.11.2023

Clasificación Internacional [C12N 7/02](#) Nº de solicitud PCT/ES2023/070273 Solicitante UNIVERSITAT DE VALÉNCIA Inventor/a MARTÍNEZ GIL, Luis

La presente invención se refiere al uso in vitro del etinilestradiol para incrementar el crecimiento de virus con envuelta lipídica, particularmente del SARS-CoV-2 y IAV. Además, la presente invención se refiere a un método para incrementar el crecimiento in vitro de un virus que comprende una envoltura lipídica.

Dicho método comprende infectar una célula o línea celular con dicho virus e incubar la célula o línea celular infectada con un medio de cultivo que comprende etinilestradiol. Consecuentemente, el uso del etinilestradiol puede mejorar los rendimientos en la producción de estos virus y reducir los costes de producción asociados, por ejemplo, a la producción de vacunas.

57. [2023248200](#) Vaccine compositions having improved stability and immunogenicity

AU - 02.11.2023

Clasificación Internacional Nº de solicitud 2023248200 Solicitante Novavax, Inc. Inventor/a Boddapati, Sarathi

Disclosed herein are nanoparticles suitable for use in vaccines. The nanoparticles present antigens from pathogens surrounded by and associated with a detergent core resulting in enhanced stability and good immunogenicity. Dosages, formulations, and methods for preparing the vaccines and nanoparticles are also disclosed.

58. [20230355740](#) COMPOSITIONS AND METHODS OF USE THEREOF FOR PREVENTION AND TREATMENT OF INFLUENZA INFECTIONS

US - 09.11.2023

Clasificación Internacional [A61K 39/145](#) Nº de solicitud 18245115 Solicitante University of Georgia Research Foundation, Inc. Inventor/a Amy L. Vincent

Recombinant constructs, influenza viral genomes including the recombinant constructs, influenza viruses including the constructs, and vaccine formulations formed thereof for inducing or increasing an immune response against influenza virus are provided. The compositions typically include a nucleic acid having a nucleic acid sequence encoding IgA-inducing protein (IGIP) polypeptide that can positively regulate IgA expression operably linked to expression of a hemagglutinin or a neuraminidase. When the nucleic acid is expressed by recombinant influenza virus in infected cells, it preferably enhances IgA production against influenza virus. Live attenuated virus expressing IGIP, and methods of use thereof for treating and preventing influenza infections are also provided.

59. [20230346837](#) PEPTIDES AND COMBINATION THEREOF FOR USE IN THE IMMUNOTHERAPY AGAINST CANCERS

US - 02.11.2023

Clasificación Internacional [A61K 35/17](#) Nº de solicitud 18177594 Solicitante Immatics Biotechnologies GmbH Inventor/a Juliane Sarah WALZ

The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor-associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

60. [20230355729](#) MULTIEPIPODE VACCINE FOR THE TREATMENT OF ALZHEIMER'S DISEASE

US - 09.11.2023

Clasificación Internacional [A61K 39/00](#) Nº de solicitud 18245532 Solicitante Robin BARBOUR Inventor/a Robin Barbour

The disclosure provides peptide compositions and immunotherapy compositions comprising an amyloid-beta (A β) peptide and an alpha-synuclein peptide. The disclosure also provides methods of treating or effecting prophylaxis of Alzheimer's disease or other diseases with beta-amyloid deposition in a subject, including methods of clearing deposits, inhibiting or reducing aggregation of A β and/or alpha-synuclein, blocking the uptake by neurons, clearing amyloid, and inhibiting propagation of alpha-synuclein seeds in a subject having or at risk of developing Alzheimer's disease or other diseases containing alpha-synuclein and/or amyloid-beta accumulations. The methods include administering to such patients the compositions comprising an amyloid-beta (A β) peptide and an alpha-synuclein peptide.

61. [20230355741](#) Feline Severe Acute Respiratory Syndrome Coronavirus 2 Vaccine

US - 09.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 17923018 Solicitante Intervet Inc. Inventor/a Mark A. Mogler

The present invention provides new vaccines for felines and ferrets to aid in reducing shedding of severe acute respiratory syndrome coronavirus 2 by infected felines or ferrets. Methods of making and using the vaccines alone or in combinations with other protective agents are also provided.

62. [20230355756](#) ALPHA-SYNUCLEIN VACCINE FOR THE TREATMENT OF SYNUCLEINOPATHIES

US - 09.11.2023

Clasificación Internacional [A61P 37/04](#) Nº de solicitud 18245533 Solicitante PROTHENA BIOSCIENCES LIMITED Inventor/a Robin Barbour

The disclosure provides peptide compositions and immunotherapy compositions comprising alpha-synuclein peptide. The disclosure also provides methods of treating or effecting prophylaxis of neurodegenerative diseases, such as Parkinson's disease, dementia with Lewy bodies (DLB), Alzheimer's disease or other synucleinopathies, with alpha-synuclein deposition in a subject, including methods of clearing deposits, inhibiting or reducing aggregation of alpha-synuclein, blocking the uptake by neurons and inhibiting propagation of alpha-synuclein seeds in a subject having or at risk of developing a neurodegenerative disease containing alpha-synuclein accumulations. The methods include administering to such patients the compositions comprising alpha-synuclein peptide.

63. [20230348476](#) CBP/CATENIN SIGNALING PATHWAY INHIBITORS AND USES THEREOF

US - 02.11.2023

Clasificación Internacional [C07D 487/04](#) Nº de solicitud 18297367 Solicitante 3+2 PHARMA, LLC Inventor/a Fuqiang Ruan

Provided are compounds of formula (Ia), (Ib) and (IIa), and pharmaceutically acceptable salts thereof. Additionally provided are compositions and pharmaceutical compositions comprising the compounds, therapeutic methods using same for modulating (e.g., inhibiting) CREB binding protein (CBP)/ β -catenin mediated signaling in treating a condition, disease or disorder (e.g., fibrosis, cancer, neurological conditions, metabolic disorders (e.g., diabetes, etc.), and skin conditions (dermatitis, psoriasis, scarring, alopecia, etc.) mediated by aberrant CBP/ β -catenin signaling, and cosmetic methods for treating skin conditions (e.g., aging, etc.). Additionally, provided are methods for enhancing vaccine efficacy using the compounds and compositions. Further provided are methods for efficiently synthesizing a clinical grade drug, comprising use, in a penultimate, or last reaction step under GMP conditions, of an intermediate 2-propynyl-compound to form a clinical grade isoxazole derivative (e.g., via 3+2 cycloaddition).

64. [WO/2023/214922](#) ANCESTRAL PROTEIN SEQUENCES AND PRODUCTION THEREOF

WO - 09.11.2023

Clasificación Internacional [A61K 39/12](#) Nº de solicitud PCT/SE2023/050423 Solicitante SCHRIEVER, Karen Inventor/a SCHRIEVER, Karen

A protein, such as an antigenic protein, is produced by determining an amino acid sequence of an ancestral version of a given protein in an ancestral sequence reconstruction method based on a plurality of homologous amino acid sequences of the given protein. A domain of the amino acid sequence of the ancestral version of the given protein is replaced with a corresponding domain derived from an amino acid sequence of the given protein or a homologous version thereof. The protein thereby comprises the amino acid sequence obtained by replacing the domain of the amino acid sequence of the ancestral version of the given protein with the corresponding domain derived from the amino acid sequence of the given protein or the homologous version thereof. The protein is suitable as antigen, as vaccine candidate and/or for structural studies.

65.[20230348566](#) RE-FOLDED HUMAN SERUM ALBUMIN AND USE THEREOF FOR ANTI-TUMOR

US - 02.11.2023

Clasificación Internacional [C07K 14/765](#) N° de solicitud 18025637 Solicitante Academia Sinica Inventor/a Chi-Ming LIANG

Re-folded human serum albumin (rfHSA) and use thereof for anti-tumor are disclosed. The rfHSA comprises the primary amino acid sequence of naive human serum albumin, in which the rfHSA in a solution is oval shape, not fibrillar, and the naive HSA is globular. The rfHSA is used for treating cancer or a tumor in a subject in need thereof. The rfHSA may also be used as a reagent for detecting the presence of a cancer cell associated with integrin β1 or serine/threonine protein kinase Akt and extracellular signal-regulated kinase 1/2 (ERK1/2) in a tumor sample or as a reagent for inhibiting phosphorylation of Akt and ERK 1/2 in a cancer cell sample. A cell lysate of a cancer cell treated with rfHSA, a vaccine composition comprising the cancer cell lysate, and use thereof are also disclosed. Also disclosed is a method for preparing rfHSA.

66.[20230357328](#) SARS-CoV-2 PROTEIN-DERIVED PEPTIDE AND VACCINE CONTAINING SAME

US - 09.11.2023

Clasificación Internacional [C07K 14/165](#) N° de solicitud 18029374 Solicitante ONCOTHERAPY SCIENCE, INC. Inventor/a TETSURO HIKICHI

The present invention provides epitope peptides which are derived from SARS-CoV-2 proteins and have the ability to induce cytotoxic T cells. The present invention also provides polynucleotides encoding the peptides, antigen-presenting cells that present the peptides, and cytotoxic T cells that target the peptides, and methods of inducing the antigen-presenting cells or CTLs. The present invention further provides compositions and pharmaceutical compositions containing them as active ingredients. Moreover, the present invention provides methods of treating and/or preventing coronavirus infectious diseases, and/or suppressing the aggravation of coronavirus infectious diseases by using the peptides, polynucleotides, antigen-presenting cells, cytotoxic T cells, or pharmaceutical compositions of the present invention. The present invention also provides methods of inducing an immune response against coronavirus infection. Furthermore, the present invention provides methods of examining the history of coronavirus infection by detecting TCR sequences of a subject.

67.[WO/2023/211172](#) CHIMERIC ZIKA VIRUS ANTICANCER VACCINE USING BREAST CANCER CELL SUBLINE

WO - 02.11.2023

Clasificación Internacional [A61K 35/768](#) N° de solicitud PCT/KR2023/005736 Solicitante SK BIOSCIENCE CO., LTD. Inventor/a HONG, Seung-hye

The present invention relates to a pharmaceutical composition for preventing or treating breast cancer, comprising, as an active ingredient, a chimeric Zika virus using a breast cancer cell subline.

68.[4273155](#) NOROVIRUSVIRUSÄHNLICHE PARTIKEL, IMMUNZUSAMMENSETZUNG ODER KIT UND VERWENDUNG DAVON

EP - 08.11.2023

Clasificación Internacional [C07K 14/08](#) N° de solicitud 21914021 Solicitante GRAND THERAVAC LIFE SCIENCE NANJING CO LTD Inventor/a LI JIANQIANG

Provided is a G11.4 norovirus virus-like particle or active fragment thereof, and use thereof, the virus-like particle comprising or being composed of an amino acid sequence shown as SEQ ID NO: 4. Further, provided is a composition or a kit comprising the G11.4 norovirus virus-like particle, and use thereof. The objective of covering multiple genotypes is achieved by using a single antigen of the invention, the process difficulty of the preparation for a pharmaceutical composition or a vaccine can be reduced, and the production cost is decreased. Also, provided is a norovirus immune composition or a kit comprising GII.2, GII.4, GII.6, and GII.17 norovirus virus-like particles or active fragments thereof, and use thereof. By the composition or the kit comprising the four types of antigens provided by the invention, each of antigens can generate a cross-immune effect on other genotypes, not only multiple prevailing genotypes of noroviruses can be covered, but also a synergy of immune effects on the same genotypes to which the four types of antigens target.

69.[WO/2023/209068](#) PERSONALIZED ANTICANCER VACCINE COMPRISING GLYCOENGINEERED TUMOUR CELLS OR TUMOUR CELL FRAGMENTS

WO - 02.11.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/EP2023/061070 Solicitante CARBOCALYX GMBH Inventor/a DOLOWSCHIAK, Tamas

Disclosed herein is a glycoengineered tumor cell or a glycoengineered tumor cell fragment for use in treatment and/or prevention of cancer, in particular cancerous neoplasms, in a subject. The glycoengineered tumor cell or tumor cell fragment comprises a tumor cell surface comprising one or more carbohydrate antigen moieties. Furthermore, a pharmaceutical composition comprising such a cell or cell fragment, a method for producing such a glycoengineered tumor cell or tumor cell fragment and a method of treatment of a subject comprising the administration of such a glycoengineered tumor cell or glycoengineered tumor cell fragment to a subject is disclosed.

70.[2023258376](#) MATERIALS AND METHODS FOR CELL-FREE EXPRESSION OF VACCINE EPITOPE CONCATEMERS

AU - 09.11.2023

Clasificación Internacional N° de solicitud 2023258376 Solicitante Leidos, Inc. Inventor/a John DRESIOS

71.[20230355766](#)DNA NANOVACCINE, PREPARATION METHOD THEREFOR AND USE THEREOF

US - 09.11.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17774695 Solicitante NATIONAL CENTER FOR NANOSCIENCE AND TECHNOLOGY Inventor/a Baoquan Ding

Provided are a DNA nanovaccine, a preparation method therefor and the use thereof. The DNA nanovaccine comprises a DNA nanostructure, a tumor antigen polypeptide-DNA complex and an immunologic adjuvant, and the immunologic adjuvant comprises a double-stranded RNA immunologic adjuvant and/or a CpG immunologic adjuvant. In the present invention, a nanostructure is constructed, wherein the nanostructure is assembled from a DNA template, a DNA chain for assisting in folding and a capture DNA chain. By hybridizing the capture DNA chain with a functional component, the precise positioning and assembling of a tumor antigen molecule and an immunologic adjuvant molecule on the surface of the DNA self-assembled nanostructure is realized; in addition, a controllable DNA molecule "switch" is designed on one side of the tubular DNA nanostructure, which switch can respond to the acid environment of an endosome after entering an antigen-presenting cell, and open the tubular structure responsively to release the tumor antigen and the immunologic adjuvant molecule. The nanostructure has

a tumor antigen-specific immunostimulatory effect and is a tumor vaccine used for the immunotherapy and prevention of various types of malignant tumors.

72.[4271406](#)NANOEMULSIONSIMPSTOFFZUSAMMENSETZUNGEN UND VERFAHREN ZUR UNTERDRÜCKUNG DER REAKTIVITÄT GEGEN MEHRERE LEBENSMITTELALLERGENE
EP - 08.11.2023

Clasificación Internacional [A61K 39/07](#) Nº de solicitud 21916444 Solicitante UNIV MICHIGAN REGENTS Inventor/a BAKER JR JAMES R

The disclosure is directed to compositions and methods for inhibiting an allergic reaction to two or more food allergens. The compositions comprise a nanoemulsion and at least one of the two or more food allergens.

73.[2023255055](#)Yeast vaccine vector including immunostimulatory and antigenic polypeptides and methods of using the same

AU - 09.11.2023

Clasificación Internacional Nº de solicitud 2023255055 Solicitante The Board of Trustees of the University of Arkansas Inventor/a Billy HARGIS

74.[20230355745](#)CORONAVIRUS-DERIVED RECEPTOR-BINDING DOMAIN VARIANT HAVING REDUCED ACE2-BINDING AFFINITY AND VACCINE COMPOSITION COMPRISING THE SAME
US - 09.11.2023

Clasificación Internacional [A61K 39/215](#) Nº de solicitud 18044365 Solicitante GI CELL, INC. Inventor/a Myoung Ho JANG

Disclosed are a novel coronavirus-derived receptor-binding domain variant having reduced ACE2-binding affinity, a fusion protein comprising the same, and the use thereof. It is possible to overcome the drawbacks of conventional vaccines using the coronavirus spike protein or receptor-binding domain thereof, wherein the reduced ACE2 expression due to binding to ACE2 and negative feedback may lead to side effects of the lungs or heart, and in particular, may be fatal to patients suffering from underlying diseases of the lungs or heart. In particular, the fusion protein constructed by fusing the coronavirus receptor-binding domain with the Fc domain is imparted with a greatly improved in-vivo half-life, and has superior efficacy by further combining N protein, M protein, ORF protein, or the like of SARS-CoV-2 therewith through additional modification and thus is highly applicable to a multivalent immunogenic composition. Therefore, the coronavirus receptor-binding domain variant is useful for the prevention and treatment of coronavirus infections comprising SARS-CoV-2.

75.[20230355734](#)A FACTOR H BINDING PROTEIN B (FHBB) BASED CHIMERIC VACCINE FOR THE PREVENTION AND TREATMENT OF PERIODONTAL DISEASE

US - 09.11.2023

Clasificación Internacional [A61K 39/02](#) Nº de solicitud 18030160 Solicitante VIRGINIA COMMONWEALTH UNIVERSITY Inventor/a Richard T. MARCONI

Provided herein are recombinant Factor H Binding Protein B (FhbB) chimeric proteins comprising several different mutant variants of the *Treponema denticola* Factor H binding protein B (FhbB). The mutant variants cannot bind Factor H. The chimeric proteins are used to vaccinate subjects against periodontal disease either systemically and/or by direct application of antibodies generated against the chimeric proteins to the oral cavity (e.g. the gums) of a patient to prevent and/or treat periodontal disease.

76.[2023258370](#)Use of amino acid sequences from *Mycobacterium tuberculosis* or corresponding nucleic acids thereof for diagnosis and prevention of tubercular infection, diagnostic kit and vaccine therefrom
AU - 09.11.2023

Clasificación Internacional Nº de solicitud 2023258370 Solicitante QIAGEN Australia Holding Pty. Ltd.
Inventor/a Cesare Saltini

77. [20230348570](#) EPITOPE OF ANTIBODY AGAINST STRUCTURAL PROTEIN OF SARS-COV-2, ANTIBODY REACTING WITH EPITOPE, METHOD FOR DETECTING SARS-COV-2 USING ANTIBODY, DETECTION KIT FOR SARS-COV-2 CONTAINING ANTIBODY, METHOD FOR DETECTING ANTI-SARS-COV-2 ANTIBODY CONTAINING POLYPEPTIDE OF EPITOPE, DETECTION KIT FOR ANTI-SARS-COV-2 ANTIBODY CONTAINING POLYPEPTIDE OF EPITOPE, VACCINE FOR SARS-COV-2 CONTAINING POLYPEPTIDE OF EPITOPE, AND THERAPEUTIC AGENT FOR SARS-COV-2 INFECTION CONTAINING ANTIBODY

US - 02.11.2023

Clasificación Internacional [C07K 16/10](#) Nº de solicitud 17909816 Solicitante Denka Company Limited
Inventor/a Shinya OGASAWARA

The present invention relates to a monoclonal antibody or an antigen-binding fragment thereof, wherein the monoclonal antibody or the antigen-binding fragment thereof reacts with a structural protein of SARS-CoV-2 specifically, and the structural protein of SARS-CoV-2 is at least one selected from the group consisting of S-protein, N-protein, M-protein, and E-protein and a hapten, wherein the hapten that reacts with an antibody that reacts with a protein of SARS-CoV-2 specifically, and the protein of SARS-CoV-2 is at least one selected from the group consisting of S-protein, N-protein, M-protein, and E-protein.

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