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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.

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Merck Announces Positive Top-line Results from Phase 3 Trial Evaluating Efficacy and Safety of GARDASIL®9 in Japanese Males

Sep 11. Merck (NYSE: MRK), known as MSD outside of the United States and Canada, today announced positive top-line results from its pivotal Phase 3 trial (V503-064) evaluating the company's 9-valent Human Papillomavirus (HPV) vaccine, GARDASIL ® 9 (Human Papillomavirus 9-valent Vaccine, Recombinant) in Japanese males ages 16 to 26 years. The trial met its primary and secondary endpoints demonstrating that administration of a 3-dose regimen of GARDASIL 9 reduced the combined incidence of anogenital persistent infection caused by 9 types of HPV compared with a placebo.

"A decade after the first approval of GARDASIL 9, Merck continues to evaluate this important vaccine in additional patient populations and remains committed to helping prevent certain HPV-related cancers through broad and equitable access globally," said Dr. Eliav Barr, senior vice president, head of global clinical development and chief medical officer, Merck Research Laboratories. "These data build on the clinical efficacy of GARDASIL 9 for the prevention of persistent infection in males and can potentially make a significant impact in addressing the global burden of certain HPV-related cancers and diseases."

Merck plans to share these data with regulatory authorities in Japan and other countries around the world to support licensure for use in males. The full results also will be presented at an upcoming scientific congress. The clinical development program evaluating GARDASIL 9 in males also includes an ongoing confirmatory Phase 3 trial evaluating efficacy in preventing HPV oral persistent infection to support effectiveness against HPV-related oropharyngeal and other head and neck cancers (NCT04199689).

About V503-064

V503-064 is a Phase 3, double-blind, placebo-controlled clinical study (NCT04635423) to evaluate the safety/tolerability and efficacy of GARDASIL 9 (V503) in preventing HPV-related anogenital persistent infection in Japanese males 16 to 26 years of age. GARDASIL 9 is commercialized in Japan under the name SILGARD 9.

The primary efficacy objective was to demonstrate reduction in the incidence of HPV 6/11/16/18-related 6-month anogenital persistent infection. The secondary efficacy objective was to demonstrate reduction in the incidence of HPV 31/33/45/52/58-related 6-month anogenital persistent infection. The study enrolled 1,059 participants.

About GARDASIL 9 in the U.S.

GARDASIL 9 is a vaccine indicated in females 9 through 45 years of age for the prevention of cervical, vulvar, vaginal, anal, oropharyngeal and other head and neck cancers caused by human papillomavirus (HPV) Types 16, 18, 31, 33, 45, 52, and 58; cervical, vulvar, vaginal, and anal precancerous or dysplastic lesions caused by HPV Types 6, 11, 16, 18, 31, 33, 45, 52, and 58; and genital warts caused by HPV Types 6 and 11.

GARDASIL 9 is indicated in males 9 through 45 years of age for the prevention of anal, oropharyngeal and other head and neck cancers caused by HPV Types 16, 18, 31, 33, 45, 52, and 58; anal precancerous or dysplastic lesions caused by HPV Types 6, 11, 16, 18, 31, 33, 45, 52, and 58; and genital warts caused by HPV Types 6 and 11.

The oropharyngeal and head and neck cancer indication is approved under accelerated approval based on effectiveness in preventing HPV-related anogenital disease. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial.

GARDASIL 9 does not eliminate the necessity for vaccine recipients to undergo screening for cervical, vulvar, vaginal, anal, oropharyngeal and other head and neck cancers as recommended by a health care provider.

GARDASIL 9 has not been demonstrated to provide protection against diseases caused by:

HPV types not covered by the vaccine

HPV types to which a person has previously been exposed through sexual activity

Not all vulvar, vaginal, anal, oropharyngeal and other head and neck cancers are caused by HPV, and GARDASIL 9 protects only against those vulvar, vaginal, anal, oropharyngeal and other head and neck cancers caused by HPV Types 16, 18, 31, 33, 45, 52, and 58.

GARDASIL 9 is not a treatment for external genital lesions; cervical, vulvar, vaginal, anal, oropharyngeal and other head and neck cancers; or cervical intraepithelial neoplasia (CIN), vulvar intraepithelial neoplasia (VIN), vaginal intraepithelial neoplasia (VaIN), or anal intraepithelial neoplasia (AIN).

Vaccination with GARDASIL 9 may not result in protection in all vaccine recipients.

Fuente: Merck News Releases. Disponible en https://acortar.link/kRO4Wg

El laboratorio chino de Wuhan desarrolla una nueva vacuna para la 'futura pandemia': "protección universal"

12 sep. La nanovacuna se probó por primera vez en ratones y mostró resultados prometedores.

El Instituto de Virología de Wuhan de China, que ha llevado a cabo una extensa investigación sobre los coronavirus de los murciélagos, se ha enfrentado a la controversia y el escrutinio de varios países, incluido Estados Unidos, por las acusaciones de que las fugas de laboratorio contribuyeron a la pandemia de COVID-19. Ahora, los científicos del instituto han desarrollado una nueva nanovacuna que parece prometedora para brindar protección universal contra todas las variantes principales de COVID-19 y posibles mutaciones futuras del coronavirus.

Según el equipo de investigación, las vacunas actuales han desempeñado un papel importante a la hora de prevenir la propagación del SARS-CoV-2 y reducir la tasa de mortalidad. Sin embargo, creen que las vacunas existentes no brindan una protección universal contra todas las formas del virus. Entonces, crearon una vacuna universal contra el COVID-19 combinando epítopos del coronavirus (partes específicas de los antígenos que desencadenan la inmunidad) con la proteína sanguínea ferritina. Esta combinación produce una vacuna intranasal de nanopartículas que se muestra prometedora en la protección contra múltiples variantes de SARS-CoV-2, incluidas Delta, Ómicron y WIV04.

La cepa WIV04 se refiere a una forma temprana de SARS-CoV-2 que se identificó inicialmente en Wuhan, la ciudad central de China donde surgió por primera vez la pandemia de COVID-19.

“Las epidemias actuales y futuras causadas por variantes y mutaciones del SARS-CoV-2 enfatizan la necesidad de vacunas efectivas que brinden protección de amplio espectro”, escribieron los investigadores en un artículo publicado en junio en la revista revisada por pares ACS Nano.

El documento también afirma: “La nanovacuna que desarrollamos puede servir como un candidato prometedor para una vacuna universal contra el SARS-CoV-2 al atacar epítopos conservados de anticuerpos neutralizantes preexistentes”.

Aunque el nivel de amenaza global de COVID-19 ha disminuido significativamente, los investigadores advierten que la mutación en curso del virus seguirá produciendo nuevas variantes, algunas de las cuales pueden poseer una mayor transmisibilidad y potencialmente desencadenar brotes futuros o incluso otra pandemia global.

Por eso el equipo cree que las nanovacunas ofrecen una “excelente plataforma de vacunación” y tienen una inmunidad duradera.

La nanovacuna se probó por primera vez en ratones y mostró resultados prometedores. Los ratones que recibieron la nanovacuna, después de dos inyecciones de refuerzo en 42 días, mostraron niveles significativamente más altos de anticuerpos de inmunoglobulina G (IgG) que el grupo de control. Cuando los ratones vacunados fueron expuestos a diferentes variantes del coronavirus, incluidas Omicron y Delta, mostraron una mayor resistencia a los síntomas pulmonares causados por el virus, lo que demuestra la eficacia protectora de la vacuna contra las diferentes cepas.

La vacuna de nanopartículas “tiene un potencial protector como vacuna de amplio espectro contra varios (coronavirus)”, escribió el equipo.

Fuente: UCO DIGITAL. Disponible en https://acortar.link/Xu8j0a

Evalúa estudio clínico efectividad de vacuna Abdala

13 sep. Como parte de las estrategias de vacunación del Ministerio de Salud Pública, y ante el aumento de casos con enfermedades respiratorias, se inició hoy en Santiago de Cuba el estudio clínico Baconao-II, dirigido a evaluar la efectividad del medicamento Abdala ante nuevas cepas de la COVID-19.

Según refirió Francisco Hernández, jefe del departamento de Ensayos Clínicos en el Centro de Ingeniería Genética y Biotecnología (CIGB), la amplia cobertura de inmunización del país permite mantener controlado el virus, no obstante, resulta necesario conocer los niveles de protección de una nueva dosis de refuerzo frente a infecciones más graves.

De acuerdo con el especialista, quienes recibieron las tres dosis iniciales del esquema de Abdala, así como las de refuerzo hace más de ocho meses, pueden participar de la pesquisa, desarrollada en el Hospital General Saturnino Lora, de esta ciudad.

Subrayó la intención de incluir 500 voluntarios radicados en la provincia, con edades comprendidas entre 19 y 60 años, en aras de estudiar también la efectividad de Soberana, inyección preventiva contra el nuevo coronavirus aplicada entonces a adolescentes.

Sandra Caridad Laurencio, galena en el Hospital Militar Joaquín Castillo y voluntaria del estudio, significó el orgullo de participar en la etapa investigativa, pues le permite ratificar la confianza en la calidad del medicamento y la competencia de sus creadores.

A decir de Víctor Hugo Leyva, máximo representante de la prensa santiaguera, brindar nuevamente su hombro a la ciencia devine oportunidad para contribuir al cuidado de la salud del pueblo mediante el conocimiento pleno del alcance de una vacuna que colmó de esperanzas a toda una nación.

A tres años de concluidos los estudios clínicos de Abdala en la región suroriental del país, con el propio hospital como centro del proceso, el CIGB efectúa nuevas pruebas, acompañadas de una estrategia de reinmunización organizada por las máximas autoridades del sector.

Fuente: TV Santiago. Disponible en https://acortar.link/GJSgB7

Revista estadounidense *The Lancet* resalta labor de científica cubana

13 sep. La revista *The Lancet* distinguió este viernes en sus páginas a la científica cubana Dagmar García, de amplia trayectoria en el desarrollo de vacunas, entre ellas las moléculas contra la COVID-19 y la antineumocócica.

Bajo el título Dagmar García Rivera: Una carrera de pasión y resiliencia, la publicación destaca en un perfil el quehacer de la farmacéutica, vicedirectora de Investigaciones del Instituto Finlay de Vacunas, primer centro en comenzar los ensayos clínicos en humanos de dos de los cinco candidatos vacunales cubanos contra la COVID-19, en plena efervescencia de la pandemia.

Heroína del trabajo y proveniente de una familia de notables investigadores, García constituye, además, una de las líderes del proyecto de la Quimi-Vio, la variante creada en la isla caribeña de la vacuna contra el neumococo, un inyectable heptavalente, o sea, con siete antígenos contra la bacteria en su composición.

Con anterioridad, por su labor, García mereció en 2019 la condecoración Carlos J. Finlay, máximo reconocimiento a los científicos cubanos, que lleva el nombre de uno de nuestros principales investigadores, descubridor del agente trasmisor de la fiebre amarilla a fines del siglo XIX.

Dagmar García Rivera, vicedirectora de Investigaciones del Instituto Finlay de Vacunas (IFV). Foto: Julio Larramendi

Fuente: Cubadebate. Disponible en https://acortar.link/tyTeBK

WHO prequalifies the first vaccine against mpox

Sep 13. The World Health Organization (WHO) has announced the MVA-BN vaccine as the first vaccine against mpox to be added to its prequalification list.

The prequalification approval is expected to facilitate timely and increased access to this vital product in communities with urgent need, to reduce transmission and help contain the outbreak. WHO's assessment for prequalification is based on information submitted by the manufacturer, Bavarian Nordic A/S, and review by the European Medicines Agency, the regulatory agency of record for this vaccine.

"This first prequalification of a vaccine against mpox is an important step in our fight against the disease, both in the context of the current outbreaks in Africa, and in future," said WHO Director-General Dr Tedros Adhanom Ghebreyesus. "We now need urgent scale up in procurement, donations and rollout to ensure equitable access to vaccines where they are needed most, alongside other public health tools, to prevent infections, stop transmission and save lives."

The MVA-BN vaccine can be administered in people over 18-years of age as a 2-dose injection given 4 weeks apart. After prior cold storage, the vaccine can be kept at 2–8°C for up to 8 weeks.

"The WHO prequalification of the MVA-BN vaccine will help accelerate ongoing procurement of the mpox vaccines by governments and international agencies such as Gavi and Unicef to help communities on the frontlines of the ongoing emergency in Africa and beyond," said Dr Yukiko Nakatani, WHO Assistant Director-General for Access to Medicines and Health Products. "The decision can also help national regulatory authorities to fast-track approvals, ultimately increasing access to quality-assured mpox vaccine products."

The WHO Strategic Advisory Group of Experts (SAGE) on Immunization reviewed all available evidence and recommended the use of MVA-BN vaccine in the context of an mpox outbreak for persons at high risk of exposure. While MVA-BN is currently not licensed for persons under 18 years of age, this vaccine may be used "off-label" in infants, children and adolescents, and in pregnant and immunocompromised people. This means vaccine use is recommended in outbreak settings where the benefits of vaccination outweigh the potential risks.

WHO also recommends single-dose use in supply-constrained outbreak situations. WHO emphasizes the need to collect further data on vaccine safety and effectiveness in these circumstances.

Available data shows that a single-dose MVA-BN vaccine given before exposure has an estimated 76% effectiveness in protecting people against mpox, with the 2-dose schedule achieving an estimated 82% effectiveness. Vaccination after exposure is less effective than pre-exposure vaccination.

Good safety profile and vaccine performance has been consistently demonstrated in clinical studies, as well as in real-world use during the ongoing global outbreak since 2022. In light of the changing epidemiology and emergence of new virus strains, it remains important to collect as much data as possible on vaccine safety and effectiveness in different contexts.

Fuente: WHO. Disponible en https://acortar.link/tJ76S7

Expanded Programme on Immunisation - solid shield against epidemics

Sep 14. The Expanded Programme on Immunisation (EPI) is considered one of the most successful public healthcare and protection programmes in Vietnam.

Over the past 40 years, hundreds of millions of doses of vaccines have been given free of charge to Vietnamese women and children, significantly contributing to reducing infant and maternal mortality.

Since Vietnam introduced the EPI – the national immunisation programme in 1981, millions of children have been protected from vaccine-preventable diseases including polio, measles, tetanus, and diphtheria.

The programme is implemented synchronously in all provinces and cities, ensuring that all people, especially children, have opportunities to access quality health services based on the provision of free vaccines.

It provides vaccines against 11 infectious diseases including tuberculosis, diphtheria, whooping cough, tetanus, measles, polio, hepatitis B, pneumonia/meningitis caused by Hib, Japanese encephalitis B, Rubella, and Rota.

Over the past 40 years, the programme has contributing to the eradication of polio in 2000, neonatal tetanus in 2005, and a significant reduction in the rate of infectious diseases.

Despite remarkable results, vaccination work in Vietnam still faces many challenges as infectious diseases in the world remain unpredictable and the recent COVID-19 pandemic has greatly affected vaccination rates.

In addition, environmental pollution, climate change, natural disasters, floods, and urbanisation create favourable conditions for infectious diseases to reappear, spread, and break out. At this time when students nationwide have entered a new school year, the risk of studenst contracting infectious diseases increases, especially those transmitted through the respiratory tract.

Dr. Angela Pratt, Chief Representative of the World Health Organisation (WHO) in Vietnam, said that since 2021, hundreds of thousands of children in Vietnam have not been vaccinated due to the COVID-19 pandemic and a shortage in vaccine supply.

As a result, the vaccination rate among children has dropped sharply, unprecedented in more than 20 years. This has led to an increase in the number of cases of vaccine-preventable diseases such as diphtheria and whooping cough, along with concerns about the risk of widespread measles outbreaks.

According to the Department of Preventive Medicine under the Ministry of Health, in the last few months, measles have broken out strongly in many provinces and cities with more than 2,000 cases and deaths.

Ho Chi Minh City has reported more than 600 measles cases and three deaths, more than 8 times higher than that of the same period last year. From late 2023 to early 2024, the Ministry of Health organised vaccinations for those who had not been fully vaccinated against 11 infectious diseases in the programme.

On the eve of the new school year, the ministry launched a vaccination week and issued a measles vaccination campaign for 2024, with children aged from 1 to 10 to be vaccinated instead of only children aged 9-18 months.

Director of the Department of Preventive Medicine Hoang Minh Duc said that 18 provinces and cities with more than 100 districts at risk will be vaccinated in this first phase of the campaign.

All totalled, more than 1 million doses of vaccines administered in this campaign are free of charge. The ministry will strengthen coordination with the Ministry of Education and Training in reviewing and making a list of preschool children and students to get vaccinated. Meanwhile, localities are urged to promote communications about the importance of vaccinations.

To maintain the achievements of the vaccinations, the health ministry recommends that authorities at all levels, departments and organisations need to monitor the innoculation programs closely, ensuring sufficient funding is in place.

The National Assembly Standing Committee has also agreed to allocate a supplementary budget of more than 424.5 billion VND to purchase 11 types of vaccines in 2024 and reserves in the first 6 months of 2025.

According to Resolution 104/NQ-CP of the Government, four important vaccines will be included in the programme in the 2021-2030 period. Specifically, the Rotavirus vaccine and Pneumococcal vaccine (PCV) will be piloted in five provinces and cities in 2025 and expanded nationwide in 2030.

The cervical cancer vaccine (HPV) will be administered by 2026 for girls aged 11, and the Influenza vaccine from 2030 in 20 provinces and cities.

The four vaccines added in the programme will help increase vaccination rates and protect the health of people, especially women and children.

Fuente: DW. Disponible en https://acortar.link/cP3VyL

5 Late-Stage mRNA Vaccines to Watch

Sep 16. The potential of mRNA vaccines was established during the COVID-19 pandemic. Now, a new wave of candidates could soon hit the market for cancer, influenza and more.

The arrival of the COVID-19 pandemic heralded an unprecedented period for the pharmaceutical industry, with vaccines progressing from R&D to worldwide rollout in record time and garnering record-breaking profits for developers. The FDA approval of the mRNA vaccines themselves was also a landmark event, acting as a proof of concept and ushering in this new class of treatments.

“COVID-19 accelerated the timelines of the mRNA pipeline, opening the aperture for the companies to start expanding more broadly into other infectious diseases and then to continue to advance the non-infectious disease part of their mRNA pipelines,” said Jennifer Heller, a partner at McKinsey & Company, which recently published a report on innovation in vaccine development.

This is what happened for Moderna, which recently followed its COVID-19 vaccine with the FDA approval of a respiratory syncytial virus (RSV) vaccine.

The global mRNA therapeutics market size is expected to reach $68 billion by 2030, according to Statista. Within the overall vaccine pipeline, Heller told BioSpace that mRNA technology is disproportionately represented when compared to other technologies, particularly in Phase I trials.

One advantage for mRNA developers is that they can rapidly develop a potential product, as happened during the pandemic. This means that the growth in mRNA vaccines at the early stage of the pipeline could soon be seen later on. It could also establish the technology's advantage over traditional vaccines, which typically take between five and 10 years to develop and bring to the market.

"The advantage of being able to rapidly create a product that can be tested in the clinic lends itself to accelerated development and that's been the promise of this technology platform," Heller said. "I think we're still in early days and so we've only had a few products to look at, but I think the trend suggests favorable timelines."

Here, BioSpace highlights five mRNA vaccine candidates that could reach patients in the near future.

Pfizer/BioNTech's PF-07252220

Influenza and an influenza/COVID-19 combo

Since successfully developing COVID-19 vaccine Comirnaty, Pfizer and BioNTech have extended their collaboration to build a pipeline of mRNA vaccines. The next likely candidate for approval is an influenza vaccine, PF-07252220, with Pfizer last year releasing Phase III trial results that demonstrated "superiority to a licensed flu vaccine" in participants 18 to 64 years of age.

The partners also plan to move forward with a combination mRNA vaccine against both influenza and COVID-19. However, this move was struck a recent blow when the companies announced that the vaccine met only one of its two primary immunogenicity endpoints. While specific data were not provided, they reported that the combination vaccine had strong efficacy against influenza A but was weaker against the influenza B strain. The companies said they will consider "adjustments" to the candidate, but this is likely to result in delays before any potential approval and the possibility of losing ground to rivals.

Moderna's mRNA-1083

Influenza/COVID-19 combo

With Pfizer hitting a stumbling block, Moderna's COVID-19/influenza vaccine, mRNA-1083, could be the first such combination vaccine to reach the market. In June, the company posted results from a Phase III trial that showed mRNA-1083 produced a strong immune response against both COVID-19 and influenza. In releasing the results, Moderna also became the first and, due to Pfizer/BioNTech's struggles, only company to date to post positive Phase III results for a combination COVID-19/influenza vaccine.

The efforts by both Pfizer/BioNTech and Moderna can be seen as a strategy to extend the sales enjoyed by the standalone COVID-19 vaccines. One of the obvious marketing benefits would be the ability to provide the vaccine annually, each flu season. An additional selling point could be improved efficacy over existing vaccines, with Moderna stating that its combination vaccine candidate was more effective at providing immunity in adults over the age of 50 than competing influenza and COVID-19 shots.

Moving forward, Moderna plans to add its newly approved RSV vaccine to the combination, creating a triple shot against all three infectious diseases.

GSK/CureVac's GSK4382276 and GSK4388067

Influenza and, separately, COVID-19

GSK is also targeting both influenza and COVID-19, though currently with separate products. In July, the British multinational bought the global rights to develop CureVac's investigational mRNA vaccines against COVID-19 (GSK4388067) and influenza (GSK4382276), with the option to develop a combination and an additional vaccine against avian flu. GSK4388067 and GSK4382276 are both currently in Phase II trials and are therefore not too far behind their rivals. On securing full rights to the vaccines, GSK Chief Scientific Officer Tony Wood said in a statement that the company would apply its capabilities "to deliver these promising vaccines at pace."

Moderna's mRNA-4157

Head and neck cancer and melanoma

Oncology is one of biopharma's key markets, and if mRNA vaccines can prove effective in the space, it could be a validation of the technology's broader therapeutic and commercial potential. Moderna is developing mRNA-4157, a therapeutic vaccine currently being explored in Phase III. The vaccine is being developed in partnership with Merck and paired with Merck's Keytruda in hopes that it will be able to boost the efficacy of the PD-1 inhibitor to provide a greater anti-tumor effect. The product is currently being trialed in various oncology indications, including head and neck cancer and melanoma.

Heller said that though McKinsey is seeing significant investment go into the therapeutic vaccine space, particularly for those targeting oncology, the "business case needs to be proven." She added that should mRNA vaccines prove to be effective in the space McKinsey expects a number of follow-on assets to emerge, which could target other indications such as rare diseases. For the moment, the main focus of the vaccine pipeline remains infectious disease and respiratory conditions, Heller said.

Moderna's mRNA-1647

Cytomegalovirus

Finally, Moderna is developing mRNA-1647 for cytomegalovirus (CMV), the most common infectious cause of birth defects in the U.S. The vaccine is currently being evaluated in Phase III for primary CMV infection in women 16 to 40 years of age.

The first interim analysis of the vaccine's efficacy is expected by the end of 2024, Moderna stated in March. The company has also advanced indication expansion studies in adolescents 9 to 15 years old and in adult transplant patients. In Phase II results, antigen-specific immune responses were observed at all dose levels in both CMV-seronegative and -seropositive participants, with the vaccine also being found to be generally safe and well-tolerated.

There are currently no approved vaccines to prevent congenital CMV and no treatments for CMV in pregnancy. The virus is typically harmless to adults but can cause a range of health problems in babies and people with a weakened immune system.

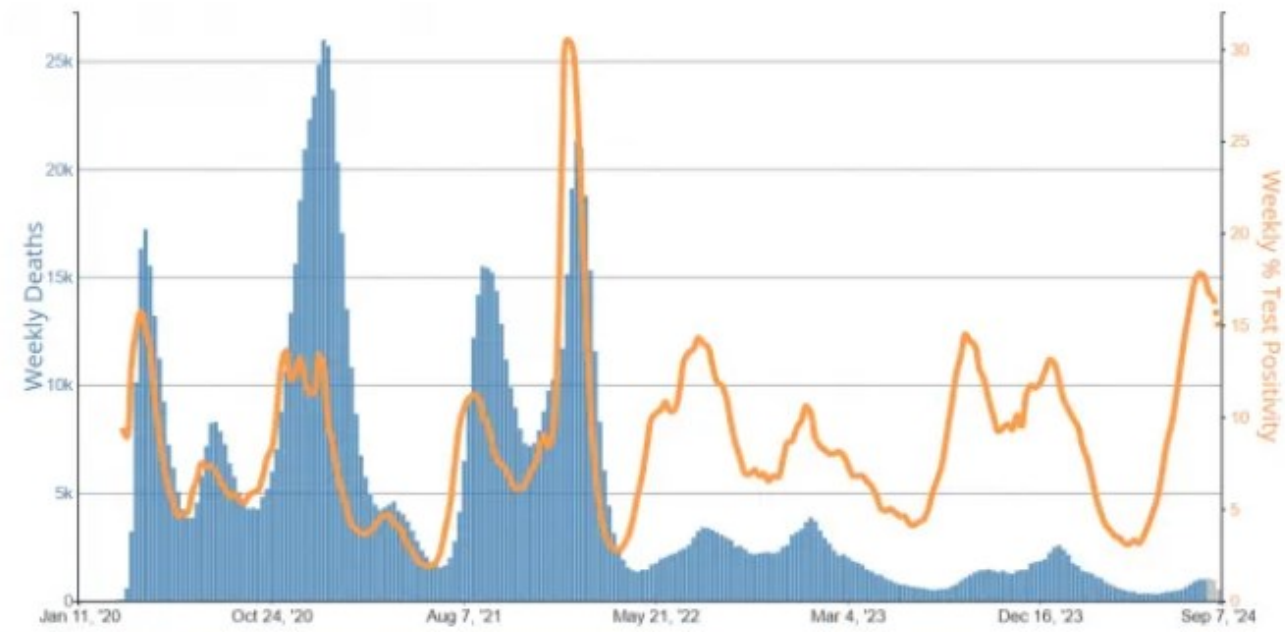
Fuente: BioSpace. Disponible en https://acortar.link/PnT8KS

Why Novavax is Gaining Ground in COVID-19 Vaccine Race

Sep 16. COVID-19 Positive Rate Spikes

With more knowledge about the virus, ample funding, and new treatments, the worst of the COVID-19 pandemic seems to be behind us (from a death perspective). However, just because the Coronavirus death rate has dropped dramatically since its major peak in 2020 (and a subsequent spike in 2021) doesn't mean that COVID-19 is still not negatively impacting people who get it.

Data from the CDC website shows that the number of people testing positive for COVID-19 has reached its highest level since early about two years.



Zacks Investment Research

Image Source: CDC.

Though fewer people are dying from the virus, "long COVID" is something that people want to avoid because it can cause complications (not yet fully understood) that can include extreme fatigue, digestion issues, and potential brain issues in younger patients.

Novavax: A New Entrant in the COVID-19 Vaccine Realm

From a vaccine perspective, the two biggest winners from the COVID-19 vaccine race were Pfizer (PFE) and Moderna (MRNA). However, with COVID-19 stubbornly sticking around, investors should focus on an obscure, up-and-coming COVID-19 vaccine maker called Novavax.

Novavax Sanofi Deal Offers Distribution and Funding

Novavax (NVAX) is a biotech company that develops innovative vaccines to prevent serious infectious diseases. In May, the company entered into a multi-billion-dollar partnership with French biotech giant Sanofi (SNY). NVAX shares jumped 80% for the week when the deal was announced because it offered NVAX a critical component it did not have – distribution.

Per the deal terms, Sanofi took a minority stake in NVAX (a $70 million equity investment), will gain rights to co-market Novavax's COVID-19 vaccine globally, and will have the sole license to develop and market NVAX's COVID vaccine in combination with its influenza vaccine. NVAX also received a payment of $570

million from Sanofi, which was included in the deal.

Florida DOH Advises Against mRNA COVID-19 Vaccine

Distribution is one way that Novavax can tighten the vaccine race and catch up to more prominent players like PFE and MRNA. Another way is through its differentiated, non-mRNA vaccine. Friday, Moderna shares dove more than 12% on massive volume after the Florida Department of Health (DOH) advised against mRNA COVID-19 vaccines, citing seven safety and efficacy concerns. Novavax, which uses protein-based vaccines, is the clear beneficiary. NVAX shares jumped 14% Friday in reaction to the news.

Image Source: Zacks Investment Research.

COVID-Influenza Combo Vaccine Could be Game-Changer

Novavax's COVID-influenza drug is slated to reach late-stage trials by the end of 2024. Should the drug pass trials, this unique, first-of-its-kind drug should act as a bullish catalyst into year-end.

NVAX Stock's Bullish Chart Pattern

NVAX's share price and volume action is mimicking its strong fundamental possibilities. The stock is carving out a bullish monthly bull flag pattern. Shares should accelerate to the upside if they can clear last month's hammer candle highs of $14.09.

Image Source: Zacks Investment Research.

Bottom Line

Though Novavax is behind in the COVID-19 vaccine race, a blockbuster deal with Sanofi and a differentiated product means the stock offers the best reward prospects in the industry moving forward.

Fuente: Yahoo Finance. Disponible en https://acortar.link/BwQFwR

Moderna recibe la aprobación de Health Canada para la vacuna actualizada contra la COVID-19 dirigida a la variante KP.2 del SARS-COV-2 para mayores de seis meses

17 sep. Moderna Inc. ha anunciado que Health Canada ha autorizado su vacuna actualizada contra la COVID-19, SPIKEVAX variante KP.2, para ayudar a prevenir la COVID-19 en individuos de seis meses de edad y mayores.

La vacuna COVID-19 actualizada de Moderna está dirigida al sub linaje KP.2 del SARS-CoV-2. Con las vacunas listas, Moderna comenzará la entrega de las dosis actualizadas a la Agencia de Salud Pública de Canadá, asegurando que el suministro esté disponible a tiempo para las campañas de vacunación provinciales y territoriales. Se espera que recibir la vacuna COVID-19 actualizada más recientemente proporcione una mejor respuesta inmunitaria contra las cepas COVID-19 circulantes en comparación con las vacunas anteriores.

Es especialmente importante para las personas con mayor riesgo de infección por COVID-19 o de enfermedad grave por COVID-19. La aprobación de Health Canada se basa en una combinación de datos preclínicos y de fabricación, así como en pruebas clínicas, no clínicas y del mundo real anteriores que respaldan la eficacia y la seguridad de las vacunas de ARNm contra la COVID-19 de Moderna. Aspectos destacados de la vacuna actualizada de la variante KP.2 de otoño de 2024-2025: La vacuna actualizada se basa en consultas con la Agencia de Salud Pública de Canadá según las cuales la composición preferida para la vacuna COVID-19 actualizada de 2024-2025 es una KP.2 monovalente. SPIKEVAX estará disponible en una sola presentación, lo que permitirá extraer dosis adultas y pediátricas del mismo vial multidosis.

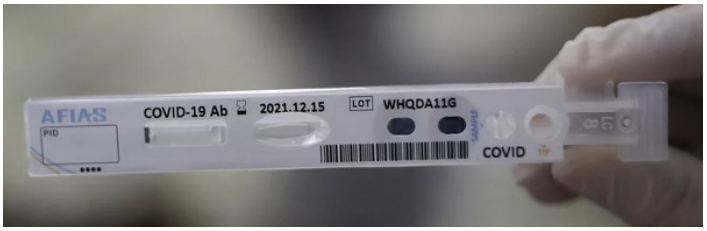
El Comité Consultivo Nacional de Inmunización (CCNI) recomienda que cualquier persona no vacunada o sin una infección conocida por COVID-19 en los últimos tres meses pueda recibir una dosis actualizada, centrándose en salvaguardar a las personas vulnerables.

Fuente: MarketScreener. Disponible en https://acortar.link/NNR75x

La nueva variante XEC COVID está al alza en Europa: esto es lo que sabemos de ella hasta ahora

18 sep. La subvariante se ha notificado en al menos 11 países europeos tras surgir en Alemania, pero hasta ahora no cumple los criterios para ser una variante preocupante o de interés.

Una nueva variante de coronavirus que se está extendiendo por Europa y el mundo podría convertirse pronto en dominante, advierten los expertos médicos.



La variante XEC es un híbrido de las anteriores subvariantes omicrón KS.1.1 y KP.3.3, que actualmente es dominante en Europa. Sin embargo, las mutaciones de XEC podrían facilitar su propagación este otoño, según han declarado los expertos a varios medios de comunicación.

Sin embargo, aún no cumple los criterios para convertirse en una variante preocupante o de interés para las autoridades de salud pública, según un portavoz del Centro Europeo para la Prevención y el Control de las Enfermedades (ECDC).

"Hasta la fecha se ha notificado un número muy limitado de detecciones de XEC", declaró el portavoz.

Los científicos identificaron por primera vez la variante XEC en Berlín en junio, y desde entonces se ha detectado en al menos 11 países europeos y otros cuatro de todo el mundo.

Hasta ahora, la XEC constituye al menos el 1% de todas las muestras secuenciadas en Eslovenia, Bélgica, Alemania y los Países Bajos, según datos del instituto estadounidense sin ánimo de lucro Scripps Research actualizados a principios de este mes. También se ha identificado en el Reino Unido, Dinamarca, Francia, Irlanda, Suecia, Italia y España, según los datos de Scripps.

Recomiendan vacunarse antes del invierno

Los datos de secuenciación tienen algunas advertencias. Las muestras víricas que se someten a secuenciación genómica no son una representación directa de los casos que circulan en la comunidad, y no todos los laboratorios realizan la secuenciación al mismo ritmo.

Esto significa que las cepas que aparecen en los datos de secuenciación "pueden no representar la verdadera prevalencia de las mutaciones en la población", afirma Scripps Research.

Aun así, puede ofrecer pistas tempranas sobre la evolución del virus y dar tiempo a los investigadores y organismos médicos para decidir si son necesarias medidas específicas, como vacunas modificadas o recomendaciones de salud pública. Los expertos creen que las vacunas COVID-19 existentes deberían ser eficaces contra la variante XEC, informó 'BBC News'.

"Prevemos que la XEC tendrá propiedades similares a las variantes que circulan actualmente, sin cambios en la gravedad de la infección ni en la eficacia de la vacuna contra la enfermedad grave", declaró un portavoz del ECDC a 'Euronews Next'.

El ECDC recomienda vacunarse antes de la temporada invernal, ya que la protección disminuye con el tiempo: "La vacunación es la medida más eficaz para protegerse contra las formas más graves de COVID-19 y la gripe estacional", afirma el ECDC .

Fuente: Euro News. Disponible en https://acortar.link/4JTnJf

Retirará AstraZeneca su vacuna contra la COVID-19 en todo el mundo

19 sep. La farmacéutica británica anunció la decisión de detener la comercialización de su vacuna Vaxzevria, tras un excedente de vacunas.

Ciudad Juárez, Chih. (ADN/Staff) – AstraZeneca ha iniciado el proceso para retirar su vacuna contra la COVID-19 en todo el mundo. De acuerdo con la compañía farmacéutica, la medida responde a un excedente de vacunas actualizadas, lo que ha generado una menor demanda de su producto Vaxzevria, anteriormente utilizado durante la pandemia.

La decisión se produce luego de que la Unión Europea suspendiera la comercialización de esta vacuna, tras reconocer que puede estar relacionada con casos raros de trombosis.

La empresa aclaró que, pese a los rumores que sugieren que la retirada de Vaxzevria está vinculada al veto de la Unión Europea, las razones son principalmente comerciales. Según AstraZeneca, la disponibilidad de diversas vacunas actualizadas para nuevas variantes de la COVID-19 ha reducido la necesidad de seguir fabricando y distribuyendo su vacuna.

En un comunicado oficial, AstraZeneca destacó el papel crucial que desempeñó Vaxzevria en la lucha contra la pandemia, asegurando que su uso contribuyó a salvar más de 6.5 millones de vidas en todo el mundo durante el primer año de implementación. La vacuna fue distribuida en más de 170 países, incluidos España, México, Brasil, Argentina y el Reino Unido, suministrando más de tres mil millones de dosis.

El proceso de retirada será gradual y se llevará a cabo en los próximos meses. AstraZeneca trabajará de la mano de los reguladores y socios para asegurar una transición sin complicaciones y concluir de manera ordenada la fase de comercialización de Vaxzevria.

AstraZeneca también enfrenta actualmente una serie de demandas legales por los efectos secundarios de su vacuna, en particular el síndrome de trombosis con trombocitopenia (STT), una condición rara pero grave que se ha asociado con el uso de vacunas de vectores de adenovirus no replicantes, como Vaxzevria. A pesar de los reclamos legales, la empresa niega que su vacuna sea defectuosa y sigue investigando los posibles mecanismos causales de estos efectos adversos.

Fuente: adn a diario network. Disponible en https://acortar.link/kOepiQ

Researchers discover immune response to dengue can predict risk of severe reinfections

Sep 20. As the dengue virus continues to be a significant global health concern, an international research team led by Duke-NUS Medical School has identified a critical link between the body's initial immune response and its defense against reinfections.

Researchers found that natural killer T (NKT) cells influence whether the response generates protective antibodies that neutralize the virus or harmful ones that could exacerbate the disease in future infections.

Particularly rampant in tropical and subtropical regions, dengue fever is caused by four closely related but distinct types of the dengue virus, known as serotypes. An initial infection with one serotype does not provide immunity against the others, so a person can be reinfected by a different serotype. Secondary infections are a well-known risk factor for developing severe disease.

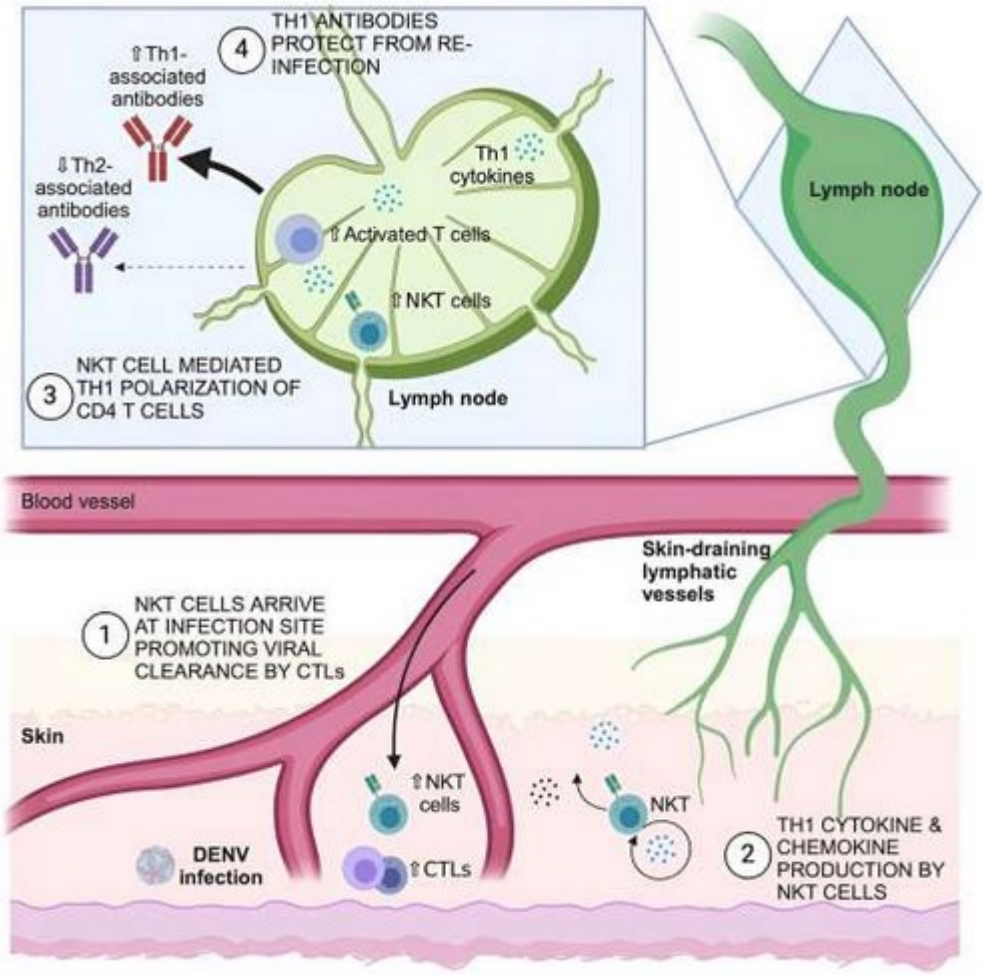
Associate Professor Ashley St John from the Program in Emerging Infectious Diseases at Duke-NUS, is senior author of the study published in the Journal of Clinical Investigation.

"Our study shows that NKT cells not only shape the immune response to an initial dengue infection but also play a pivotal role in determining the severity of future infections.

"Understanding this process is crucial, as it can lead to better strategies for protecting communities, especially in dengue-endemic regions, where severe reinfections can strain health care systems and impact public health," says St John.

Combating a primary infection and fortifying the body against reinfections

The researchers were intrigued by the fact that people infected with dengue have high concentrations of NKT cells in their skin, where the virus initially enters the body. Although many immune cells respond to the infection, NKT cells are among the first to act. Integrating features of both natural killer cells and T cells, these unique immune cells link the innate and adaptive immune systems and play a key role in regulating immune responses.



When NKT cells are active during the initial dengue infection, they help establish a strong immune memory that protects against subsequent infections. In other words, NKT cells recruited to the skin at the start of an infection can influence immune responses for months or even years.

In addition to combating the virus directly in the skin, NKT cells also help to establish a supportive immune environment in nearby lymph nodes. This facilitates the production of effective antibodies, which are essential for neutralizing the virus and providing long-term protection by other immune cells.

The immune system relies on two primary types of immune responses—Th1, which focuses on destroying threats once they have infected cells, and Th2, which combats pathogens like bacteria, parasites and toxins outside cells. This makes Th1 responses particularly effective against viruses such as dengue. The researchers discovered that NKT cells drive dengue-specific Th1 responses, leading to the production of "good" antibodies that neutralize the virus.

In a pre-clinical model, the team found that the immune systems lacking functional NKT cells produce Th2-type antibodies, which are less effective against viruses. This leads to inadequate protection against reinfection with the same strain.

More importantly, it can also cause a phenomenon known as antibody-dependent enhancement, where "bad" antibodies from the initial infection exacerbate the disease during later infections with different strains.

This can make a secondary dengue infection more severe than the initial one.

Similar patterns were also observed in humans. Patients with primary dengue infections who developed Th1 -associated antibodies, linked to NKT cell activity, had better outcomes, whereas those with secondary infections who produced high levels of Th2-associated antibodies were more likely to experience severe disease.

Co-senior author and Adjunct Senior Research Fellow at Duke-NUS, Dr. Abhay Rathore, who is also from the Department of Pathology at Duke University Medical Center, said, "Understanding how immune cells generate strong early responses can help us design vaccines that utilize NKT cells and Th1 responses for better antibody and memory cell production.

"This approach could enhance dengue vaccine effectiveness and safety, especially for those with prior exposure, and allow for personalized treatment by monitoring antibody levels to assess the risk of severe disease."

Professor Patrick Tan, senior vice-dean for research at Duke-NUS, commented, "These findings mark a significant advance in our battle against dengue and reflect Duke-NUS' dedication to pioneering innovative solutions to global health challenges.

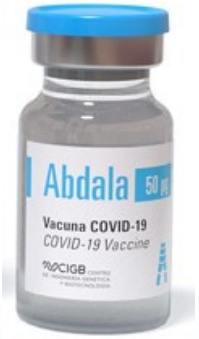
"They not only pave the way for developing more effective vaccines and personalized treatments for dengue but could also have potential implications for other viral diseases as well."

Recognizing that early immune responses can affect long-term health and the nature of immune memory may also be relevant for viruses such as influenza and COVID-19, where strong immune memory is crucial. However, additional research is needed to determine the relevance of these findings to other viral infections.

Fuente: Medical Xpress. Disponible en https://acortar.link/rtlHfP

Concluyó exitosamente la primera etapa del ensayo clínico Baconao II

21 sep. La primera etapa del ensayo clínico Baconao –cuya segunda fase concluyó recientemente en el Hospital Provincial Saturnino Lora, de Santiago de Cuba– resultó exitosa «en los 359 voluntarios que recibieron una dosis de refuerzo de Abdala, y que, previamente, se vacunaron con esta o con Soberana hace más de ocho meses», dijo a Granma, Francisco Hernández Bernal, jefe del Departamento de Ensayos Clínicos del Centro de Ingeniería Genética y Biotecnología (CIGB).



Del total de voluntarios, refirió el científico, «todos resultaron inmunizados, y entre el 3 y el 10 de octubre se desarrollará la segunda y última parte del Baconao, y se evaluará la respuesta a la vacuna».

Este ensayo forma parte de las estrategias de vacunación del Ministerio de Salud Pública (Minsap) que, en este sentido, aplican esas dosis a la población cuya edad está entre 19 y 60 años.

El ensayo Baconao regresó a Santiago luego de tres años de concluidos los estudios clínicos en la región suroriental del país, para determinar en voluntarios el nivel de protección de una dosis de refuerzo a la vacuna Abdala contra las nuevas cepas del virus SARS-CoV-2 que están circulando en la Mayor de las Antillas, y que difieren de las que lo hicieron a principios de esta década.

«El Saturnino Lora fue el sitio clínico principal del desarrollo de la vacuna Adala contra la COVID-19, cuando se demostró su eficacia y seguridad; luego se produjo la vacunación masiva a más de nueve millones de cubanos», detalló el especialista, al tiempo que detalló que, «del total de participantes, 257 habían recibido tres dosis de Abdala y los otros, 102 jóvenes –que son estudiantes de las universidades de Oriente y de Ciencias Médicas–, con Soberana».

Fuente: La Demajagua. Disponible en https://acortar.link/rvxAqm

La Comunidad de Madrid adquirirá 270.000 dosis de vacuna neumocócica para 2024 y 2025

22 sep. La Comunidad de Madrid adquirirá un total de 270.000 dosis de vacuna neumocócica conjugada veintevalente para los años 2024 y 2025 para la inmunización de personas mayores de 60 años y adultos menores de esa edad con factores de riesgo, para lo que el Gobierno autonómico destinará 10,8 millones de euros.

Su administración se lleva a cabo en otoño en los centros de salud de Atención Primaria y otros puntos autorizados, previa indicación del médico de familia.

El Ejecutivo regional comenzó a aplicar esta acción de Salud Pública en 2005 para evitar el contagio de una bacteria que causa distintas patologías prevalentes, que van desde procesos comunes de vías altas, como otitis o sinusitis, a formas más agudas de neumonía, sepsis o meningitis, que afectan más a los grupos de edad más avanzada.

La recomendación de esta protección a los colectivos antes mencionados reside en que si, como ocurre en muchos casos, se padece alguna patología crónica de base, la enfermedad neumocócica tiene mayor gravedad, lo que puede provocar hospitalizaciones, prolongadas en muchas ocasiones, y un mayor seguimiento facultativo tras recibir el alta.

Fuente: LA RAZÓN. Disponible en https://acortar.link/yNNvyx

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1.WO/2024/188144POXVIRUS MRNA VACCINE AND USE

WO - 19.09.2024

Clasificación Internacional C12N 15/62Nº de solicitud PCT/CN2024/080492Solicitante YITHER BIOTECH CO., LTDInventor/a LIU, Zhihua

Provided are a poxvirus mRNA vaccine and a use. Specifically, provided is an isolated mRNA molecule, comprising a coding region, the coding region coding a target protein, and the target protein comprising the following four proteins: vaccinia virus surface antigens A27, L1, A33, and B5, wherein every two adjacent proteins are independently directly linked or linked by identical or different linkers. Animal immunization results show that the mRNA molecule has good candidate vaccine potential and provides an innovative idea for the development of poxvirus vaccines.

2.4428254PRIMER-SET, ZUSAMMENSETZUNG UND KIT ZUM NACHWEIS VON VACCINIA-VIRUS UND ANALYSEVERFAHREN DAMIT

EP - 11.09.2024

Clasificación Internacional C12Q 1/70Nº de solicitud 22890144Solicitante KOLON INCInventor/a CHOI HEON SIK

The present invention relates to a primer set, composition, kit for the detection of vaccinia virus for the detection and quantification of vaccinia virus and an analysis method using the same, and the primer set for the detection of vaccinia virus has a shorter analysis period and superior sensitivity and specificity compared

to the conventional virus quantitation method, so that when real-time PCR applied to such a primer set is performed, it is possible to detect and quantify vaccinia virus more quickly and accurately in real time.

3.WO/2024/185696ARENAVIRUS VACCINE

WO - 12.09.2024

Clasificación Internacional A61K 31/7105Nº de solicitud PCT/JP2024/007794Solicitante OSAKA UNIVERSITYInventor/a IWASAKI, Masaharu

Provided is a new vaccine against mammal arenavirus infections. This vaccine contains lipid nanoparticles each including mRNA encoding a nucleoprotein (NP) or a glycoprotein precursor (GPC) of arenavirus.

4.WO/2024/188801USE OF QUAIL CELL LINES FOR POXVIRUS PRODUCTION

WO - 19.09.2024

Clasificación Internacional A61K 35/76Nº de solicitud PCT/EP2024/056009Solicitante BAVARIAN NORDIC A/SInventor/a SCHWENEKER, Marc

The present invention relates to methods of cultivating quail cell lines to optimize production of poxvirus for use in making viral vector-based vaccine products. In some embodiments, the poxvirus is Modified Vaccinia Virus Ankara ("MVA") or recombinant MVA. In some embodiments, the recombinant MVA encodes heterologous antigens and can be used to produce a vaccine against the antigens. In some embodiments, the recombinant MVA encodes antigens of Respiratory Syncytial Virus (RSV) and the quail cell culture can be used to produce a vaccine against RSV comprising the recombinant MVA and/or the encoded antigens.

5.20240307515PERSONALIZED VACCINE ADMINISTRATION

US - 19.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18575949Solicitante Daicel CorporationInventor/a Naoki SAKAGUCHI

Provided herein is a method of manufacturing a packaged vaccine personalized to a subject. Also provided is a method of administering a personalized vaccine to a subject. Further provided is an injector having an igniter and a removable cartridge.

6.WO/2024/183665HUMAN PAPILLOMAVIRUS VACCINE AND USE THEREOF

WO - 12.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud PCT/CN2024/079758Solicitante BEIJING HEALTH GUARD BIOTECHNOLOGY, INC.Inventor/a YIN, Fei

Provided is a human papillomavirus vaccine. The vaccine is composed of L1 protein antigens of HPV types 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68. The recombinant fifteen-valent vaccine for human papillomavirus contains 12 types clearly related to human cancers, two most common low-risk types: HPV6 and HPV11, and a suspicious carcinogenic type: HPV68. In China, the prevention effect of the vaccine on female cervical cancer is expected to be improved to 97.2% or more, and globally, the prevention effect on

female cervical cancer is expected to be improved to 94.1% or more, and the vaccine has a relatively high application value.

7.4426343RNA-IMPFSTOFF GEGEN DAS RESPIRATORISCHE SYNZYTIALVIRUS

EP - 11.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud 22802727Solicitante SANOFI SAInventor/a CASIMIRO DANILO

The present disclosure provides a respiratory syncytial virus (RSV) vaccine comprising a messenger RNA (mRNA) comprising an open reading frame (ORF) encoding an RSV F protein antigen, and methods of eliciting an immune response by administering said vaccine.

8.4426710PROTOTYP EINES SYNTHETISCHEN GLYCOKONJUGATIMPFSTOFFS GEGEN STREPTOCOCCUS SUIS

EP - 11.09.2024

Clasificación Internacional C07H 15/04Nº de solicitud 22884846Solicitante UNIV MONTREALInventor/a SEGURA MARIELA

The invention provides for a vaccine against *S. suis* serotype 2. The vaccine comprises chemically synthesized fragments and thus may be made widely commercially available. The vaccine is used in the livestock production and may be adapted for use against other serotypes of *S. suis* such as serotypes 1, 1/2, 3, 9, and 14. Also, the vaccine may be adapted for use in humans.

9.20240307519MICROENCAPSULATED STERNE VACCINE

US - 19.09.2024

Clasificación Internacional A61K 39/07Nº de solicitud 18576813Solicitante THE TEXAS A&M UNIVERSITY SYSTEMInventor/a Jamie Suzanne Benn

Methods and compositions for the immunization of animals and humans using an immunization or vaccine that comprises *B. anthracis* Sterne strain 34F2 spores suspended in alginate in an amount sufficient to protect an animal or human from a lethal dose of anthrax.

10.4431111PROBIOTIKUM ALS IMPFSTOFFIMMUNADJUVANS

EP - 18.09.2024

Clasificación Internacional A61K 39/39Nº de solicitud 23162396Solicitante COREE S R LInventor/a ELLI MARINA

The present invention concerns a probiotic for use as immunostimulant, preferably as adjuvant for boosting immune response to a vaccine.

11.WO/2024/189569PROBIOTIC AS VACCINE IMMUNOADJUVANT

WO - 19.09.2024

Clasificación Internacional A61K 39/39Nº de solicitud PCT/IB2024/052479Solicitante COREE S.R.L.Inventor/a ELLI, Marina

The present invention concerns a probiotic for use as immunostimulant, preferably as adjuvant for boosting immune response to a vaccine.

12.WO/2024/192352BIODISSOLVABLE MICRONEEDLE ARRAY-METAL-ORGANIC FRAMEWORK-VACCINE BIOCOMPOSITES FOR EFFECTIVE SKIN IMMUNIZATION AND MANUFACTURING THEREOF

WO - 19.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2024/020166Solicitante UNIVERSITY OF PITTSBURGH - OF THE COMMONWEALTH SYSTEM OF HIGHER EDUCATIONInventor/a KORKMAZ, Emrullah

Disclosed herein are aspects of a microneedle array comprising a metal-organic framework (MOF)-vaccine biocomposite and methods for using the same. The microneedle array further comprises a dissolvable material that dissolved when inserted into the skin of a subject, thereby releasing the MOF-vaccine biocomposite. The MOF may be selected to dissolve in an acidic environment, thereby targeting the vaccine delivery to specific cellular compartments. Methods for making the MOF-vaccine biocomposite and the microneedle array also are disclosed.

13.WO/2024/189198A VACCINE FOR PROTECTING A PREGNANT SWINE AGAINST AFRICAN SWINE FEVER

WO - 19.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud PCT/EP2024/056974Solicitante INTERVET INTERNATIONAL B.V.Inventor/a VAN DEN BORN, Erwin

The invention pertains to a live attenuated African swine fever virus Georgia 2007 (ASFV-G) Δ9GL/ΔUK strain for use in a vaccine for protecting a pregnant swine against an infection with African swine fever virus (ASFV) by administering the vaccine comprising the live attenuated ASFV-G-Δ9GL/ΔUK strain to the pregnant swine.

14.WO/2024/188165ANTI-ACNE RECOMBINANT PROTEIN VACCINE, PREPARATION METHOD, AND USE

WO - 19.09.2024

Clasificación Internacional C07K 14/195Nº de solicitud PCT/CN2024/080674Solicitante WESTVAC BIOPHARMA CO., LTD.Inventor/a LI, Jiong

Provided are an anti-acne recombinant protein vaccine, a preparation method, and a use. In order to solve the current problem that there is still a lack of a drug for effective prevention and treatment for acne diseases, a recombinant protein vaccine targeting a CAMP virulence factor of Cutibacterium acnes is provided, which is mainly used for inducing an immune response in vivo, such as the production of antibodies, to neutralize the CAMP virulence factor and inhibit Cutibacterium acnes-induced skin inflammation, so as to have the effect of preventing and treating acne.

15.WO/2024/183687PROTEIN OR MRNA VACCINE AGAINST NOVEL CORONAVIRUS AND PREPARATION METHOD THEREFOR AND USE THEREOF

WO - 12.09.2024

Clasificación Internacional C07K 14/165Nº de solicitud PCT/CN2024/079889Solicitante SHANGHAI RNACURE BIOPHARMA CO., LTD.Inventor/a LIN, Jinzhong

A protein or mRNA vaccine against novel coronavirus and a preparation method therefor and a use thereof. The protein has addition, deletion or substitution of one or more amino acid residues in an amino acid sequence shown in SEQ ID NO: 2. A nucleic acid encodes an S protein mutant. The preclinical animal test data of the mRNA vaccine shows that the mRNA vaccine has a good protection effect against current novel coronavirus mainstream variants of concern (VOCs).

16.2038233BROAD-SPECTRUM VACCINE AGAINST SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS-2 MUTANTS WITH HUMORAL IMMUNITY AND CELLULAR IMMUNITY FUNCTIONS

NL - 20.09.2024

Clasificación Internacional A61P 31/14Nº de solicitud 2038233Solicitante Institute of Medical Biology Chinese Academy of Medical Sciences and Peking Union Medical CollegeInventor/a Junbin Wang

The present invention belongs to the technical field of biomedicine, and specifically relates to a broad—spectrum vaccine against severe acute respiratory syndrome coronavirus—2 (SARS—COV— 2) mutants with humoral immunity and cellular immunity functions. Specifically, the vaccine is applied in the preparation of a universal vaccine against SARS—CoV—Z mutants by a nucleotide sequence shown in SEQ ID NO:l or SEQ ID NO:3. The SARS—CoV—Z mutant is wild type (WT), Alpha, Beta, Delta, BA.l, BA.2, BA.5, XBB.l.5, EG.5.l, BF.7, BQ.l.l, CH.l.l, or XBB.l.l6. Balb/c mice are immunized after prokaryotic expression and purification, and the level of the produced neutralizing antibodies after mice are immunized by a receptor binding domain (RBD) vaccine is detected using euvirus/pseudovirus neutralization experiments, to solve the deficiency of the broad spectrum of the existing vaccine and improve the broad spectrum of vaccine.

17.WO/2024/191944BROAD-SPECTRUM MULTI-ANTIGEN PAN-CORONAVIRUS VACCINE

WO - 19.09.2024

Clasificación Internacional C12N 15/50Nº de solicitud PCT/US2024/019443Solicitante THE REGENTS OF THE UNIVERSITY OF CALIFORNIAInventor/a BENMOHAMED, Lbachir

Waning immunity induced by first-generation Spike-alone-based COVID-19 has failed to prevent immune escape by many variants of concern (VOCs) that emerged from 2020 to 2024, resulting in a prolonged COVID-19 pandemic. Thus, a next-generation Coronavirus (CoV) vaccine incorporating highly conserved non-Spike SARS-CoV-2 antigens is described herein. Conserved non-Spike T cell antigens in combination with a Spike antigen encapsulated in lipid nanoparticles: (i) Induced high frequencies of lung-resident antigen-specific CXCR5+CD4+ T follicular helper cells, GzmB+CD4+ and GzmB+CD8+ cytotoxic T cells, and CD69+IFN-y+TNFa+CD4+ and CD69+IFN-y+TNFa+CD8+ effector T cells; and (ii) Reduced viral load and COVID-19-like symptoms caused by various VOCs. The combined antigen/LNP-based pan-CoV vaccine could be rapidly adapted for clinical use to confer broader cross-protective immunity against emerging highly mutated and pathogenic VOCs.

18.20240299528A DNA PLASMID SARS-CORONA VIRUS-2/COVID-19 VACCINE

US - 12.09.2024

Clasificación Internacional A61K 39/215Nº de solicitud 18004148Solicitante STATENS SERUM INSTITUTInventor/a Charlotta Polacek STRANDH

The present invention relates to DNA vaccine against SARS-Coronavirus-2 (SARS-CoV-2) infection. In particular, the present invention relates to a DNA vaccine encoding the SARS-Coronavirus-2 spike protein for use in prevention or treatment of viral infection in humans and/or animals.

The DNA vaccine including the DNA construct has several features in its design that together provide a more safe and broad protection against SARS-Cov-2 strains in humans and animals, e.g. mink, ferrets, pigs and cats. The DNA construct encodes the SPIKE protein derived from the pandemic strain; Wuhan-Hu-1 (MN908947). The sequence is codon optimized for high expression in human and mammalian cells and the DNA construct is inserted in a selected DNA plasmid for eukaryotic in vivo and in vitro expression. The combination of the choice of SARS-COV-2 SPIKE sequence, codon optimization, expression in the new generation eukaryotic expression plasmid with no antibiotic resistance marker (instead the RNA-OUT system is used for safety) and delivery to the very immunogenic skin, results in protection against SARS-COV-2 infection and covid-19 disease.

19.WO/2024/191324METHOD FOR PRODUCING A VACCINE PREPARATION FROM WHOLE VIRUSES OR BACTERIA

WO - 19.09.2024

Clasificación Internacional C12N 13/00Nº de solicitud PCT/RU2024/050056Solicitante SHILOV, Oleg AleksandrovichInventor/a SHILOV, Oleg Aleksandrovich

Proposed is a method for producing a vaccine preparation from whole viruses or bacteria by treating viruses or bacteria with high-energy electrons having an energy in the range of from 5 to 10 MeV, which includes the following steps: obtaining a liquid containing a virus or bacteria, with an infectious activity of at least 3.0 lg TCID50/ml; irradiating the obtained virus- or bacteria-containing liquid with a beam of high-energy electrons, wherein the radiation dose lies within a range of from 5 to 50 kGy; optionally adding one or a number of adjuvants to the viral or bacterial preparation; optionally adding one or a number of pharmaceutically acceptable excipients to the viral or bacterial preparation. The proposed method makes it possible to obtain a vaccine preparation from whole viruses or bacteria in a technologically simple and highly efficient manner.

20.WO/2024/188212INTELLIGENT DESIGN METHOD FOR TYPE I DIABETES VACCINE

WO - 19.09.2024

Clasificación Internacional G16B 20/50Nº de solicitud PCT/CN2024/080942Solicitante SHANGHAI INSTITUTE FOR ADVANCED STUDY ZHEJIANG UNIVERSITYInventor/a ZHOU, Ruhong

Provided is an intelligent design method for a type I diabetes vaccine. The method comprises: perform computer-simulated amino-acid mutation design on an initial type I diabetes autoantigen sequence obtained from a patient with type I diabetes, and perform auxiliary rational design on the basis of an HLA-polypeptide molecule-TCR ternary complex structure. The binding affinity of an antigen to an immune molecule is optimized and improved in a targeted manner, so that significant proliferation of type I diabetes-related CD4+T lymphocytes is realized.

21.20240299439TNF-ALPHA PROTEIN INHIBITING MRNA VACCINE

US - 12.09.2024

Clasificación Internacional A61K 31/7105Nº de solicitud 18406166Solicitante Sarfaraz K. NiaziInventor/a Sarfaraz K. Niazi

TNF-alpha (Tumor Necrosis Factor-alpha) is a cytokine, a protein involved in the inflammation process in the body. It plays a crucial role in the immune system, primarily produced by activated macrophages the white blood cells. TNF-alpha is critical in the inflammatory response to infections and diseases, but it can also contribute to inflammatory and autoimmune diseases when produced in excess. Many antibodies are created to inhibit over-expressed TNF-alpha but with serious side effects. The present invention provides a mRNA vaccine to reduce the titer of TNF-alpha, leading to treating multiple life-threatening diseases including but not limited to rheumatoid arthritis, psoriatic arthritis, Crohn's disease, ankylosing spondylitis, plaque psoriasis, inflammatory bowel disease, type 2 diabetes, tumor progression, angiogenesis, and metastasis, heart failure from myocardial cell death, and atherosclerosis from fibrosis.

22.20240307523NOVEL CORONAVIRUS VACCINE BASED ON CONTROLLABLE SECRETORY EXPRESSION OF ATTENUATED SALMONELLA, PREPARATION METHOD THEREFOR, AND APPLICATION THEREOF

US - 19.09.2024

Clasificación Internacional A61K 39/215Nº de solicitud 18263578Solicitante JIANGSU TARGET BIOMEDICAL RESEARCH INSTITUTE CO., LTD.Inventor/a Zichun HUA

A coronavirus vaccine based on controllable secretory expression of attenuated *Salmonella*, a preparation method therefor, and use thereof. The method includes constructing controllable and stable expression plasmids for secretory expression of different antigenic structural domain proteins of the new coronaviruses and their attenuated *Salmonella* expression strains, and then mixing various attenuated *Salmonella* antigen-presenting strains that can achieve controllable intracellular secretory expression in antigen-presenting cells. With the aid of a unique secretion system, a variety of different antigenic proteins can be secretory-expressed efficiently in antigen-presenting cells after oral gavaging. The secretory-expressed antigenic proteins can be efficiently processed and presented by the antigen-presenting cells, and finally activate/regulate the immune system to produce more potent antibodies to make the vaccine work.

23.20240306612A SYSTEM AND METHOD FOR MONITORING THE EFFECT OF A HERPESVIRUS-BASED VACCINE IN AN ANIMAL POPULATION

US - 19.09.2024

Clasificación Internacional A01K 45/00Nº de solicitud 18570077Solicitante INTERVET INC.Inventor/a Yun-Ting WANG

The presently disclosed subject matter aims to a system and method directed to monitor the effect of a herpesvirus-based vaccine in an animal population. The system and method include a processing circuitry configured to: obtain one or more tissue samples of one or more respective animals of the animal population; sequence each of the tissue samples; calculate a score associated with the animal population based on the sequence of the tissue samples; compare the score to a benchmark determined from a dataset containing data associated with the effect of the herpesvirus-based vaccine in a plurality of animal populations; and, execute an action in response to the comparison to the benchmark.

24.WO/2024/187116THERMOPHOBIC TREHALOSE GLYCOPOLYMERS AS SMART C-TYPE LECTIN RECEPTOR VACCINE ADJUVANTS

WO - 12.09.2024

Clasificación Internacional A61K 31/715Nº de solicitud PCT/US2024/019138Solicitante CORNELL UNIVERSITYInventor/a AGUILAR-CARRENO, Hector

The present disclosure relates to a copolymer comprising at least one PA block and at least one PB block, wherein PA represents a polymer block comprising one or more units of monomer A and PB represents a polymer block comprising one or more units of monomer B, with the monomer A being an amide or ester, and the monomer B being a trehalose-based monomer, wherein at least one hydroxyl group on the trehalose is esterified. The present disclosure also relates to a method of preparing the copolymer and a bioactive agent delivery system comprising the copolymer and a bioactive agent. The present disclosure further relates to a composition comprising the copolymer and a vaccine and a method of vaccinating a subject against infection by an enveloped virus.

25.4429633NANOTEILCHENFORMULIERUNG

EP - 18.09.2024

Clasificación Internacional A61K 9/00Nº de solicitud 22790011Solicitante NEWIMMUNE II LLCInventor/a HORSBURGH BRIAN

The present disclosure relates to nanoparticulate vaccine adjuvants, and to vaccine compositions which contain nanoparticulate vaccine adjuvants; to methods of preparing such adjuvants and compositions; and to methods of using such compositions and adjuvants for vaccination. The vaccine adjuvants disclosed herein are effective for enhancing the immune response to vaccination.

26.WO/2024/192203MULTISPECIFIC ANTI-HIV ANTIBODIES

WO - 19.09.2024

Clasificación Internacional A61P 31/18Nº de solicitud PCT/US2024/019848Solicitante INTERNATIONAL AIDS VACCINE INITIATIVEInventor/a JARDINE, Joseph

The present disclosure relates to anti-HIV Env antibodies and their use in the treatment or prevention of HIV/AIDS.

27.20240299309PHARMACEUTICAL COMPOSITION COMPRISING LIPID-BASED CARRIERS ENCAPSULATING RNA FOR MULTIDOSE ADMINISTRATION

US - 12.09.2024

Clasificación Internacional A61K 9/51Nº de solicitud 18258552Solicitante CureVac SEInventor/a Michael SONNTAG

The invention is inter alia directed to a pharmaceutical composition or vaccine for multidose administration comprising lipid-based carriers encapsulating an RNA, wherein the composition comprises at least one antimicrobial preservative selected from an aromatic alcohol, a sugar alcohol, thiomersal, or a combination thereof. The present invention is also directed to a kit or kit of parts for preparing and/or administering the pharmaceutical composition or vaccine for multidose administration. Also provided are methods of treating or

preventing a disorders or a diseases, and first and second medical uses of the pharmaceutical composition or vaccine. Further provided is the use of aromatic alcohols, sugar alcohols, and/or thiomersal for preserving and/or preparing a composition or vaccine comprising lipid-based carriers encapsulating an RNA.

28.20240299532SUBUNIT VACCINES WITH DINUCLEOTIDE-LOADED HYDROGEL ADJUVANT

US - 12.09.2024

Clasificación Internacional A61K 39/215Nº de solicitud 18549722Solicitante The Board of Trustees of the Leland Stanford Junior UniversityInventor/a Eric Andrew Appel

Provided herein are vaccine delivery systems including a polymer hydrogel non-covalently crossed-linked with a plurality of nanoparticles, a dinucleotide adjuvant encapsulated in the hydrogel, and an antigen encapsulated in the hydrogel. The provided vaccine delivery systems are particularly useful for slowly releasing the antigen and adjuvant within a subject, thereby triggering a more therapeutically effective immune response. Also provided are kits including the disclosed vaccine delivery systems, and methods of using the disclosed materials.

29.4426730MENSCHLICHE MONOKLONALE INFLUENZA-ANTIKÖRPER MIT BREITER KREUZREAKTION UND VERFAHREN ZUR VERWENDUNG DAVON

EP - 11.09.2024

Clasificación Internacional C07K 16/10Nº de solicitud 22826723Solicitante DANA FARBER CANCER INST INCInventor/a MARASCO WAYNE A

The present invention provides structural determinants important for binding to the stem domain of the HA protein of influenza virus, and methods of use thereof for production of high affinity neutralizing influenza virus antibodies based upon these determinants. The present invention further provides tools for determining the efficacy of an influenza virus vaccine. The present invention further provides a molecular signature useful for determining the efficacy of an influenza virus vaccine in a subject, or for predicting prior immunologic exposure or antigen responsiveness to vaccine or influenza virus infection.

30.4426346MULTIVALENTE INFLUENZAIMPFSTOFFE MIT REKOMBINANTEM HÄMAGGLUTININ UND NEURAMINIDASE UND VERFAHREN ZUR VERWENDUNG DAVON

EP - 11.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud 22821808Solicitante SANOFI PASTEUR INCInventor/a ALEFANTIS TIMOTHY

Disclosed herein are multivalent vaccine or immunogenic compositions comprising one or more recombinant influenza virus hemagglutinin (HA), one or more recombinant influenza virus neuraminidase (NA), and an optional adjuvant. Also disclosed are methods of using the vaccine or immunogenic composition.

31.WO/2024/189430METHODS FOR VACCINATION OF A SUBJECT TREATED WITH AN FCRN ANTAGONIST

WO - 19.09.2024

Clasificación Internacional C07K 16/00Nº de solicitud PCT/IB2024/000120Solicitante ARGENX BVInventor/a STEELAND, Sophie

The present disclosure provides methods for vaccination of subjects treated with a human neonatal Fc receptor (FcRn) antagonist. The present disclosure also provides methods of administering an FcRn antagonist to a subject that has recently received a vaccine or will soon receive a vaccine. In some embodiments, the FcRn antagonist is efgartigimod.

32.WO/2024/188803PRODUCTION OF POXVIRUSES FROM QUAIL CELL CULTURES

WO - 19.09.2024

Clasificación Internacional C12N 7/00Nº de solicitud PCT/EP2024/056012Solicitante BAVARIAN NORDIC A/SInventor/a SCHWENEKER, Marc

The present invention relates to methods of producing poxvirus viral vector-based vaccine products from avian cell lines. In some embodiments, the avian cells are suspension quail cell lines. Pharmaceutical compositions such as vaccines produced by the methods of the invention are also provided. In some embodiments, the poxvirus viral vector is Modified Vaccinia Virus Ankara ("MVA") or recombinant MVA. In some embodiments, the recombinant MVA encodes heterologous antigens and can be used to produce a vaccine against the antigens. In some embodiments, the recombinant MVA encodes antigens of Respiratory Syncytial Virus (RSV) and the avian cells are used to produce a vaccine against RSV comprising the recombinant MVA and/or the encoded antigens.

33.WO/2024/188802METHODS OF ISOLATING POXVIRUSES FROM AVIAN CELL CULTURES

WO - 19.09.2024

Clasificación Internacional C12N 7/02Nº de solicitud PCT/EP2024/056010Solicitante BAVARIAN NORDIC A/SInventor/a THRANE, Susan Hoffmann

The present invention relates to methods of producing poxvirus viral vector-based vaccine products from avian cell lines. In some embodiments, the avian cells are suspension quail cell lines. Pharmaceutical compositions such as vaccines produced by the methods of the invention are also provided. In some embodiments, the poxvirus viral vector is Modified Vaccinia Virus Ankara ("MVA") or recombinant MVA. In some embodiments, the recombinant MVA encodes heterologous antigens and can be used to produce a vaccine against the antigens. In some embodiments, the recombinant MVA encodes antigens of Respiratory Syncytial Virus (RSV) and the avian cells are used to produce a vaccine against RSV comprising the recombinant MVA and/or the encoded antigens.

34.4431599ATTENUIERTER BETACORONAVIRUS-STAMM

EP - 18.09.2024

Clasificación Internacional C12N 7/01Nº de solicitud 22890066Solicitante UNIV OSAKA RES FOUND FOR MICROBIAL DISEASESInventor/a TAKEKAWA SHIRO

The purpose of the present invention is to provide a strain that is useful as a novel betacoronavirus vaccine. It is revealed that novel betacoronavirus, according to the present invention, having a prescribed substitution mutation relating to temperature sensitivity in combination with a prescribed deletion mutation relating to attenuation, is useful as a betacoronavirus vaccine strain having excellent attenuated characteristics.

35.20242164130UTER MEMBRANE VESICLES

AU - 12.09.2024

Clasificación Internacional Nº de solicitud 2024216413Solicitante GlaxoSmithKline Biologicals SAInventor/a DELANY, Isabel

The present invention relates to the field of neisserial vaccine compositions (particularly gonococcal vaccine compositions) and the use of such compositions in medicine. More particularly, the present invention relates to genetically modified gonococci of strain FA1090 and outer membrane vesicles obtained therefrom. The invention also provides a process for preparing the genetically modified gonococci of the invention as well as immunogenic compositions and vaccines comprising the outer membrane vesicles of the invention.

36.WO/2024/188379MÉTODO PARA INDUCIR UNA RESPUESTA INMUNE PROTECTORA CONTRA LA VARIANTE OMICRON DEL VIRUS SARS-COV-2 Y SUS SUBVARIANTES

WO - 19.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud PCT/CU2024/050002Solicitante INSTITUTO FINLAY DE VACUNASInventor/a VEREZ BENCOMO, Vicente Guillermo

La presente invención se relaciona con la biotecnología, específicamente con el campo de la salud humana. Describe un método para la estimulación de una respuesta inmune protectora contra el virus SARS-CoV-2, particularmente la variante ómicron y sus subvariantes, caracterizada por la aplicación de un esquema heterólogo de vacuna de RBD conjugado y vacuna de RBD, donde el RBD proviene de la variante Wuhan-Hu-1 del virus SARS-CoV-2.

37.20240309037DIARYL TREHALOSE COMPOUNDS AND USES THEREOF

US - 19.09.2024

Clasificación Internacional C07H 13/08Nº de solicitud 18437424Solicitante THE UNIVERSITY OF MONTANAInventor/a David Burkhart

Disclosed herein are diaryl trehalose compounds and methods of use thereof, for example as vaccine adjuvants.

38.20240299521CELLULAR ADJUVANTS FOR VIRAL INFECTION

US - 12.09.2024

Clasificación Internacional A61K 39/108Nº de solicitud 18664120Solicitante NantBio, Inc.Inventor/a Kayvan Niazi

Two-component vaccine formulations and methods are contemplated where the vaccine has an adjuvant component and a therapeutic component. The therapeutic component comprises preferably a recombinant therapeutic virus encoding a therapeutic antigen while the adjuvant component comprises a non-host cell or immune stimulating portion thereof. Notably, use of the adjuvant component will result in significant uptake of the therapeutic component into immune competent cells, even in the absence of receptors for entry of the therapeutic component. In addition, such adjuvant also stimulates expression of the therapeutic antigen.

39.4426345MULTIVALENTE HYBRIDINFLUENZAIMPFSTOFFE MIT HÄMAGGLUTININ UND NEURAMINIDASE SOWIE VERFAHREN ZUR VERWENDUNG DAVON

EP - 11.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud 22814316Solicitante SANOFI SAInventor/a ALEFANTIS TIMOTHY

Disclosed herein are hybrid multivalent vaccine or immunogenic compositions comprising (i) one or more influenza virus proteins selected from one or more influenza virus hemagglutinin (HA) proteins, one or more influenza virus neuraminidase (NA) proteins, or a combination thereof; and (ii) one or more ribonucleic acid molecules encoding one or more influenza virus proteins selected from one or more influenza virus HA proteins, one or more influenza virus NA proteins, or a combination thereof. Also disclosed are methods of using the vaccine or immunogenic compositions.

40.WO/2024/184473IMMUNOGENIC CHIKUNGUNYA COMPOSITIONS FOR ADMINISTRATION TO IMMUNOCOMPROMISED PATIENTS

WO - 12.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud PCT/EP2024/056050Solicitante VALNEVA AUSTRIA GMBHInventor/a DUBISCHAR, Katrin

The present invention relates to a vaccine for the prevention or treatment of a Chikungunya virus infection in immunocompromised or immunosuppressed subjects.

41.4429655KLEINMOLEKÜLIGE IMMUNPOTENTIATORKONJUGATE VON NFKB-AKTIVATOREN ALS ADJUVANTIEN MIT ERHÖHTER WIRKSAMKEIT UND VERMINDERTER TOXIZITÄT

EP - 18.09.2024

Clasificación Internacional A61K 31/33Nº de solicitud 22893843Solicitante UNIV CHICAGOInventor/a ESSER-KAHN AARON

The present disclosure concerns immunomodulatory compositions and methods of use for enhancing response to an antigen (e.g., in a vaccine), an immunotherapy (e.g., a cancer immunotherapy), or other immune stimulation. The disclosure describes immunomodulators having reduced toxicity and improved immune response compared with existing adjuvants. Further disclosed are methods for improving an immune response to a vaccine antigen, cancer immunotherapeutic, or other immune stimulating agent. The disclosure describes dimeric and polymeric immunomodulators comprising one or more pattern recognition receptor (PRR) agonist moieties and one or more NF-κB inhibitor moieties.

42.20240307521RNA VACCINES AGAINST INFECTIOUS DISEASES

US - 19.09.2024

Clasificación Internacional A61K 39/145Nº de solicitud 18610681Solicitante HDT Bio Corp.Inventor/a Steven Gregory Reed

The disclosure provides compositions, methods of treatment, and methods of making and using compositions to deliver a nucleic acid to a subject. Methods of using these compositions as a vaccine for treatment of an infectious disease are also provided.

43.20240299525RSV RNA VACCINES

US - 12.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud 18418127Solicitante ModernaTX, Inc.Inventor/a Giuseppe Ciaramella

The disclosure relates to respiratory syncytial virus (RSV) ribonucleic acid (RNA) vaccines as well as methods of using the vaccines and compositions comprising the vaccines. The vaccine can be formulated in a lipid nanoparticle.

44.WO/2024/187287FUSION POLYPEPTIDES, IMMUNOGENIC COMPOSITIONS, METHODS AND USES THEREOF

WO - 19.09.2024

Clasificación Internacional C07K 19/00Nº de solicitud PCT/CA2024/050325Solicitante UNIVERSITY OF SASKATCHEWANInventor/a BANERJEE, Arinjay

Fusion polypeptides, and their use in subunit vaccine compositions to elicit immune responses against two or more pathogens are described, as well as polynucleotides encoding therefor. Also described are methods for treating and preventing infection by two or more pathogens.

45.4428231GENOTYP 5 DES JAPANISCHEN ENZEPHALITISVIRUS MIT HOHEM TITER UND VERWENDUNG DAVON

EP - 11.09.2024

Clasificación Internacional C12N 7/00Nº de solicitud 23792135Solicitante KOREA NAT INSTITUTE OF HEALTHInventor/a SHIM SANG MU

The present invention relates to high titer Japanese encephalitis virus genotype 5 and uses thereof, and specifically relates to a high titer virus produced using subculture and mouse cerebral inoculation methods and a vaccine composition comprising the same.

46.4429737BFS-INJEKTIONS- UND VERBINDUNGSANORDNUNGEN

EP - 18.09.2024

Clasificación Internacional A61M 5/24Nº de solicitud 22830002Solicitante KOSKA FAMILY LTDInventor/a GIBNEY ERIC DWYER

A pre-filled medical delivery system assembled and configured to allow delivery of a single dose of a therapeutic agent (*e.g.*, vaccine, drug, medicament, etc.) from a Blow-Fill-Seal (BFS) bottle to a patient utilizing one or more BFS injection or connection assemblies.

47.4426269LIPIDNANOPARTIKEL ZUR OLIGONUKLEOTIDFREISETZUNG

EP - 11.09.2024

Clasificación Internacional A61K 9/51Nº de solicitud 22813503Solicitante ZIPHIUS NVInventor/a VALEMBOIS SOPHIE

The current invention relates to ionizable lipid-like compound according to Formula (I) or pharmaceutically acceptable salt, tautomer, or stereoisomer thereof. The present invention also provides a lipid nanoparticle comprising an ionizable lipid-like compound according to Formula (I) and one or more RNA molecules, as well as a pharmaceutical composition or vaccine, comprising such lipid nanoparticles.

48.20240299520MINI CIRCULAR RNA THERAPEUTICS AND VACCINES AND METHODS OF USE THEREOF

US - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18276140Solicitante VIRGINIA COMMONWEALTH UNIVERSITYInventor/a Guizhi ZHU

Synthetic mini circular RNA vaccine constructs are provided. The synthetic mini circular RNA constructs encode one or more antigens and are used, for example, as vaccines against cancer or infectious agents. In some aspects, the one or more antigens are translated as concatemer peptides by rolling cycle translation (RCT) of the mini circular RNA.

49.20240299524COMPOSITIONS FOR USE IN TREATMENT OF CHLAMYDIA

US - 12.09.2024

Clasificación Internacional A61K 39/118Nº de solicitud 18594291Solicitante SANOFIInventor/a Nadège ARNAUD BARBE

This invention relates to compositions (e.g., vaccine compositions) which can be used to immunise against *Chlamydia* infections. The compositions comprise *Chlamydia* sp. antigens and antigen combinations which can be used to immunise against *Chlamydia* sp., used in the form of nucleic acids (e.g., mRNAs) encoding antigenic proteins or in the form of recombinant protein antigens.

50.4426271LIPIDNANOPARTIKEL ZUR OLIGONUKLEOTIDFREISETZUNG

EP - 11.09.2024

Clasificación Internacional A61K 9/51Nº de solicitud 22813917Solicitante ZIPHIUS VACCINES NVInventor/a VALEMBOIS SOPHIE

The current invention relates to ionizable lipid-like compounds according to Formula (I) or pharmaceutically acceptable salt, tautomer, or stereoisomer thereof. The present invention also provides a lipid nanoparticle comprising an ionizable lipid-like compound according to Formula (I) and one or more RNA molecules, as well as a pharmaceutical composition or vaccine, comprising such lipid nanoparticles.

51.4426270LIPIDNANOPARTIKEL ZUR OLIGONUKLEOTIDFREISETZUNG

EP - 11.09.2024

Clasificación Internacional A61K 9/51Nº de solicitud 22813505Solicitante ZIPHIUS NVInventor/a HAQUE AKM ASHIQUL

The current invention relates to ionizable lipid-like compound according to Formula (I) or pharmaceutically acceptable salt, tautomer, or stereoisomer thereof. The present invention also provides a lipid nanoparticle comprising an ionizable lipid-like compound according to Formula (I) and one or more RNA molecules, as well as a pharmaceutical composition or vaccine, comprising such lipid nanoparticles.

52.20240301520METHOD FOR DETECTION OF SARS-COV-2 MUTATIONS

US - 12.09.2024

Clasificación Internacional C12Q 1/70Nº de solicitud 18277020Solicitante SEEGENE, INC.Inventor/a Yun Jee KIM

Disclosed herein is a method for detecting SARS-CoV-2 mutations in a sample comprising a nucleic acid molecule. By the method, rapid detection can be made of SARS-CoV-2 variants that has changed in viral characteristics (e.g., infectivity, mortality, vaccine effect, therapeutic effect, etc.), thus early preventing and promptly coping with the spread of infection of SARS-CoV-2 variants.

53.4429699SARS-COV-2-IMPFSTOFFE

EP - 18.09.2024

Clasificación Internacional A61K 39/12Nº de solicitud 22891167Solicitante GRITSTONE BIO INCInventor/a GITLIN LEONID

Disclosed herein are vaccine compositions that include SARS-Co V-2 MHC epitope-encoding cassettes and/or full-length SARS-CoV-2 proteins, further comprising promoters and polyadenylation signals. Also disclosed are lipid nanoparticles for the delivery of said compositions, and nucleotides, cells, and methods such as dosage regimens associated with administration of the compositions relating to their use as vaccines for stimulating immune responses.

54.WO/2024/186940CODON OPTIMIZATION AND METHODS OF USE THEREOF

WO - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud PCT/US2024/018742Solicitante BRAIDWELL LABS LLCInventor/a SIMS, Joshua Joyner

Featured are methods and applications of codon optimization of a gene product. In particular, the disclosure features methods of codon optimization by reducing the frequency of m6A modifications so as to promote increased mRNA half-life and stability for the purpose of enhancing protein production. Additional methods of delivering codon optimized gene products are disclosed. The methods of the disclosure are clinically relevant for gene and cellular therapies and vaccine development.

55.20240299513NOVEL MRNA VACCINE FOR AUTOIMMUNITY

US - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18572241Solicitante The Trustees of Columbia University in the City of New YorkInventor/a Remi J. Creusot

This disclosure describes a nucleic acid construct that contains sequences for an Endotope construct, a STAT1c, and miR142 target sites. In one example, disclosed is composition comprising an Endotope construct and a STAT1 construct including a nucleic acid sequence encoding a constitutively active STAT1 (e.g. STAT1c), wherein the Endotope and the STAT1 constructs each include miR142 target sites. In alternative examples, disclosed is a single construct that includes the Endotope construct and STAT1 construct along with miR142 target sites. The nucleic acid constructs can be packaged into polycationic molecules or liposome to create nanoparticles for efficient cell transfection.

56.WO/2024/183717USE OF EPITOPE IN PREPARATION OF PRODUCT FOR TREATING TUMORS

WO - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud PCT/CN2024/080133Solicitante GUANGZHOU MEDICAL UNIVERSITYInventor/a WANG, Xiaoling

Disclosed is a use of an epitope in the preparation of a product for treating tumors. Point mutation at an RNA level is introduced for a tumor antigen to generate a novel epitope, so that the mutated epitope is not restricted by negative screening, and can be designed as a target for a tumor immunotherapy product, such as a tumor vaccine and cell therapy, for effective treatment and/or prevention of tumors.

57.WO/2024/187163HYBRID ALPHA-PSEUDOVIRUS PLATFORM FOR RIBOVIRUSES

WO - 12.09.2024

Clasificación Internacional Nº de solicitud PCT/US2024/019263Solicitante VIRONGY BIOSCIENCES INC.Inventor/a HETRICK, Brian

The present disclosure relates to a new system for generating and using a hybrid alpha pseudovirus for Riboviria viruses. The hybrid riboviria-alpha-pseudovirus (HRAP) present a new type of particle having an alphavirus-derived RNA genome and structural protein(s) of viruses in the riboviria realm. The instant HRAP particles assembled from structural proteins across diverse riboviria families may find use for vaccine development, antiviral drug screening, neutralization assays, initiating therapeutic or immune responses, and the like.

58.2024902733FLAVIVIRUS VACCINE COMPOSITIONS AND RELATED METHODS

AU - 12.09.2024

Clasificación Internacional Nº de solicitud 2024902733Solicitante VAXMED Pty LtdInventor/a Paul Michael, HOWLEY

59.WO/2024/186017DUCK-DERIVED RNA POLYMERASE I PROMOTER AND RECOMBINANT VECTOR CARRYING SAME

WO - 12.09.2024

Clasificación Internacional C12N 15/113Nº de solicitud PCT/KR2024/002088Solicitante REPUBLIC OF KOREA(ANIMAL AND PLANT QUARANTINE AGENCY)Inventor/a LEE, Yu-Na

The present invention relates to a duck-derived RNA polymerase I promoter and a recombinant vector carrying same. Using the duck-derived RNA polymerase I promoter of the present invention, avian influenza viruses can be produced with high efficiency. Furthermore, in the event of an outbreak of variant or novel avian influenza viruses, the established virus production system allows for the early acquisition of vaccine candidate libraries and diagnostic reagents, and thus is expected to minimize damage to domestic industries.

60.20240299516MULTILAMELLAR RNA NANOPARTICLE VACCINE AGAINST CANCER

US - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18268725Solicitante UNIVERSITY OF FLORIDA RESEARCH FOUNDATON, INC.Inventor/a Elias Sayour

The disclosure provides a method of treating cancer in a human subject. The method comprises, e.g., administering a dose of nanoparticles every two weeks for an initial treatment period, then administering a dose of nanoparticles once a month for a subsequent treatment period. The nanoparticles comprise a positively-charged surface and an interior comprising (i) a core and (ii) at least two nucleic acid layers, each nucleic acid layer being positioned between a cationic lipid bilayer, wherein the nucleic acids are derived from a cancer cell. The dose comprises about 0.00050 mg/kg to about 1.5 mg/kg of nucleic acid.

61.WO/2024/184626CORONAVIRUS VACCINES

WO - 12.09.2024

Clasificación Internacional Nº de solicitud PCT/GB2024/050568Solicitante DIOSYNVAX LTDInventor/a HEENEY, Jonathan, Luke

Designed messenger RNAs (mRNAs) encoding coronavirus polypeptides are described, as well as mRNA vaccine vectors, pharmaceutical compositions comprising the mRNAs or vectors, and mRNA vaccines, and their use to induce an immune response against viruses of the coronavirus family. The designed sequences include mRNA sequences encoding designed coronavirus receptor binding domain (RBD) sequences CoV_S_T2_17, CoV_S_T2_17 comprising a transmembrane domain sequence (CoV_S_T2_20), CoV_S_T3_3 (T2_20v2), and CoV_S_T3_4 (T2_17_T2_20 dimer). Polypeptides, nucleic acid molecules encoding the polypeptides, vectors, fusion proteins, pharmaceutical compositions, and their use as vaccines against viruses of the coronavirus family are also described.

62.12091717SYSTEM AND METHOD FOR THE DETECTION AND PREVENTION OF LEUKEMIA AND LYMPHOMA

US - 17.09.2024

Clasificación Internacional C12Q 1/6886Nº de solicitud 18129791Solicitante Cameron Kamran TebbiInventor/a Cameron Kamran Tebbi

A method for detection and prevention of leukemia and lymphoma is disclosed. When mononuclear blood cells from an individual are exposed to a supernatant of a mycovirus-containing *Aspergillus flavus*, the degree and pattern of activation and upregulation or downregulation transcription factors are indicative of an individual's susceptibility to leukemia or lymphoma. Upon detection of observed transcription factors, preventive measures are provided to the individual. Preventive measures may include, for example, a vaccine, or may be provided upon detection of observed transcription factors with those individuals that are genetically susceptible to leukemia and lymphoma.

63.20240309053RECOMBINANT HUMAN/BOVINE PARAINFLUENZA VIRUS 3 (B/HPIV3) EXPRESSING A CHIMERIC RSV/PIV3 F PROTEIN AND USES THEREOF

US - 19.09.2024

Clasificación Internacional C07K 14/005Nº de solicitud 18665309Solicitante The United States of America, as represented by the Secretary, Department of Health and Human ServicInventor/a Peter Collins

Recombinant paramyxoviruses including a viral genome encoding a heterologous gene are provided. In several embodiments, the recombinant paramyxovirus is a recombinant parainfluenza virus, such as a recombinant PIV3 including a viral genome encoding a heterologous respiratory syncytial virus F ectodomain linked to the transmembrane domain and the cytoplasmic tail of the F protein from the PIV3. Nucleic acid

molecules including the genome of a recombinant paramyxoviruses are also provided. The recombinant viruses may advantageously be used in vaccine formulations, such as for vaccines against parainfluenza virus and respiratory syncytial virus.

64.20240307524CORONAVIRUS VACCINES

US - 19.09.2024

Clasificación Internacional A61K 39/215Nº de solicitud 18576969Solicitante Luxembourg Institute of Health (LIH)Inventor/a Xavier Dervillez

The present invention provides multimeric protein complex comprising three polypeptides each comprising N- to C-terminally: (i) a receptor-binding domain (RBD) of an S1 subunit of an S protein of a coronavirus, (ii) optionally a S2 subunit of an S protein of a coronavirus; and (iii) a multimerization domain comprising a collagen-like region (CLR) of ficolin-2, wherein the multimerization domain enables the assembly of the polypeptides into a multimeric protein complex. The present invention further provides polynucleotides encoding the polypeptides of the multimeric protein complex, expression vectors, pharmaceutical compositions and uses of the multimeric protein complexes, such as a vaccine.

65.20240301007METHODS AND COMPOSITIONS FOR QUADRIVALENT INFLUENZA VACCINE

US - 12.09.2024

Clasificación Internacional C07K 14/005Nº de solicitud 18427625Solicitante Arcturus Therapeutics, Inc.Inventor/a Brian SULLIVAN

Provided herein are RNA molecules encoding viral replication proteins and antigenic proteins or fragments thereof. Also provided herein are compositions that include RNA molecules encoding viral replication proteins and antigenic proteins or fragments thereof, and lipids. RNA molecules and compositions including them are useful for inducing immune responses.

66.4427761IMPFSTOFF GEGEN BAUCHSPEICHELDRÜSENKREBS UND MEDIZINISCHE VERWENDUNG DAVON

EP - 11.09.2024

Clasificación Internacional A61K 47/64Nº de solicitud 22888956Solicitante YUANBEN ZHUHAI HENGQIN BIOTECHNOLOGY CO LTDInventor/a CAI JIONG

An anti-tumor fusion protein, wherein the fusion protein can inhibit the growth of MUC1-positive tumor cells, and can inhibit the growth of pancreatic cancer tumor cells. The fusion protein has broad application prospects for the prevention and/or treatment of pancreatic cancer.

67.20240309390MINICELLS FROM HIGHLY GENOME REDUCED ESCHERICHIA COLI: CYTOPLASMIC AND SURFACE EXPRESSION OF RECOMBINANT PROTEINS AND INCORPORATION IN THE MINICELLS

US - 19.09.2024

Clasificación Internacional C12N 15/70Nº de solicitud 18566497Solicitante University of Virginia Patent FoundationInventor/a Steven L. Zeichner

Provided are bacterial minicells derived from genome reduced (GR) having a reduced number of expressed genes and/or is a bacterium having one or more mutated min genes. In some embodiments, the minicell has

a recombinant protein present in and/or on the surface of the minicell. In some embodiments, the recombinant protein is an antigen and in some embodiments, the minicell induces an enhanced immune response against the antigen when administered to a subject. In some embodiments, the bacterium has an autotransporter (AT) expression vector encoding the recombinant protein to express the recombinant protein on the surface of the bacterium and/or the minicell derived therefrom. Also provided are vaccine compositions that include bacterial minicells, methods for producing antibodies, methods for vaccinating subjects, and expression vectors encoding heterologous proteins.

68.20240299518METHOD FOR THE TREATMENT OF PATIENTS WITH CARCINOMAS

US - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18663847Solicitante CENTRO DE INMUNOLOGIA MOLECULARInventor/a BELINDA SÁNCHEZ RAMÍREZ

The present invention relates to the branch of Biotechnology and Medicine, particularly to a method for the selection and treatment of patients with carcinomas of epithelial origin that co-express the HER1 and HER2 receptors without increased expression of these receptors or with the presence of RAS activating mutations. In particular, this method is based on the application of bivalent vaccine compositions which have as active principle the extracellular domains of the HER1 and HER2 receptors or portions thereof and as an adjuvant the very small proteoliposomes derived from the outer membrane proteins of *Neisseria meningitidis* and the GM3 ganglioside. This method is useful for the treatment of patients whose expression levels of HER1 and HER2 do not allow the monoclonal antibodies against HER1 and/or HER2 to have a therapeutic effect.

69.20240299522METHODS AND COMPOSITIONS RELATED TO THE NEXT GENERATION VACCINE

US - 12.09.2024

Clasificación Internacional A61K 39/112Nº de solicitud 18543534Solicitante UNIVERSITY OF KANSASInventor/a Wendy L. PICKING

Disclosed are compositions comprising a Gram negative needle tip protein and a translocator protein and methods of their use.

70.WO/2024/188336PULMONARY TUBERCULOSIS VACCINE, PREPARATION METHOD THEREFOR, AND APPLICATION THEREOF

WO - 19.09.2024

Clasificación Internacional A61K 39/116Nº de solicitud PCT/CN2024/081888Solicitante CANSINO BIOLOGICS INC.Inventor/a XU, Fang

Provided is an immunogenic composition, the immunogenic composition comprising one or more pulmonary tuberculosis antigens. After performing mucosal immunization on the body via inhalation, the invention not only has a high level of specific antibodies targeting mycobacterium tuberculosis simultaneously generated in the lungs and body, but can also stimulate a very high cell immune response.

71.20240299511AN IMMUNOGEN

US - 12.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18273087Solicitante UNIVERSITY OF PRETORIAInventor/a Robert Peter MILLAR

This invention relates to an immunogen comprising a gonadotropin releasing hormone (GnRH) peptide sequence, a kisspeptin peptide sequence and a stimulant of raising an immune response, such an immunogen for use in a method to regulate the release of hormones in a vertebrate including modulation of reproductive hormones, to reduce fertility in a vertebrate and to treat hormone-dependent diseases including hormone-dependent tumours including prostate tumours, breast, ovary and endometrial tumours, benign hyperplasia including benign prostatic hyperplasia and uterine fibroids, endometriosis, polycystic ovarian disease, infertility, sexual dysfunction and any disorder that would benefit from an increased or decreased GnRH-dependent activity and a vaccine formulation comprising the immunogen. The invention also relates to the use of the immunogen in the preparation of a medicament for use in a method to regulate the release of hormones in a vertebrate.

72.WO/2024/186803NUCLEOCAPSID ANTIGEN IMMUNOTHERAPY FOR COVID-19 FUSION PROTEINS AND METHODS OF USE

WO - 12.09.2024

Clasificación Internacional Nº de solicitud PCT/US2024/018494Solicitante AKSTON BIOSCIENCES CORPORATIONInventor/a ZION, Todd C.

The present disclosure provides recombinantly manufactured fusion proteins comprising a SARS-CoV-2 nucleocapsid protein (N-protein) fragment or an analog thereof linked to a human Fc fragment for use in relation to the 2019 Novel Coronavirus (COVID-19). Embodiments include the administration of the fusion proteins to patients that have recovered from COVID- 19 as a booster vaccination, to antibody naive patients to produce antibodies to the SARS-CoV-2 virus to enable the patients to become convalescent plasma donors, to patients who have been infected by the SARS-CoV-2 virus and have contracted COVID-19 in order to limit the scope of the infection and ameliorate the disease, and as a prophylactic COVID-19 vaccine. Exemplary' Fc fusion proteins and pharmaceutical formulations of exemplary' Fc fusion proteins are provided, in addition to methods of use and preparation.

73.20240307518SUBUNIT VACCINE DELIVERY PLATFORM FOR ROBUST HUMORAL AND CELLULAR IMMUNE RESPONSES

US - 19.09.2024

Clasificación Internacional A61K 39/015Nº de solicitud 18365815Solicitante CORNELL UNIVERSITYInventor/a David A. PUTNAM

The present invention relates to a probiotic cell transformed with a construct suitable to overexpress and display on the surface of the probiotic cell a fusion protein comprising at least a portion of a transport protein coupled to at least a portion of one or more antigenic proteins or peptides. Probiotic-derived vesicles displaying this fusion protein as well as methods of inducing an immune response using the probiotic cells or vesicles are also disclosed.

74.WO/2024/183321MIXED NANO-LIPID DELIVERY SYSTEM FOR MRNA, AND PREPARATION METHOD THEREFOR AND USE THEREOF

WO - 12.09.2024

Clasificación Internacional A61K 9/51Nº de solicitud PCT/CN2023/130614Solicitante BEIJING DAMA FANGCHENG BIOTECHNOLOGY CO., LTDInventor/a YANG, Zhenjun

Disclosed are a mixed nano-lipid delivery system for mRNA, and a preparation method therefor and a use thereof. The delivery system is composed of a anionic and cationic mixed lipid, PEG2000-DSPE, a buffer system and mRNA; the anionic and cationic mixed lipid is composed of anionic nucleoside phospholipid TPS or CPS and cationic peptide lipid CLD or CLDA; and the buffer system is a PBS or Opti-MEM™ buffer system containing Ca^{2+} having a concentration 0.1 mM. The delivery system can efficiently deliver mRNA into cells and mice, and can realize long-time stable expression of proteins in vivo. In addition, an HPV E7 mRNA vaccine provided by the present invention can successfully activate humoral and cellular immunity in mice, reduce the mortality rate of HPV-related cervical cancer mice, and have good safety. In summary, the system has the advantages of good stability, high delivery efficiency, strong cell entry capacity, high biological activity and low toxicity, and will have a wide application prospect in the field of tumor immunotherapy.

75.20240307517DEVELOPMENT OF A HIGHLY EFFICIENT SECOND GENERATION FENTANYL-CONJUGATE VACCINE TO TREAT FENTANYL ADDICTION

US - 19.09.2024

Clasificación Internacional A61K 39/00Nº de solicitud 18560241Solicitante Cornell UniversityInventor/a Ronald G. Crystal

The invention is directed to fentanyl analogues and a conjugate comprising same, as well as a method of inducing an immune response against fentanyl.

76.20240307555RETARGETED RETROVIRAL VECTORS RESISTANT TO VACCINE-INDUCED NEUTRALIZATION AND COMPOSITIONS OR METHODS OF USE THEREOF

US - 19.09.2024

Clasificación Internacional A61K 48/00Nº de solicitud 18667761Solicitante The Broad Institute, Inc.Inventor/a Kepler MEARS

The invention features pseudotyped viral particles (e.g., lentiviral or gammaretroviral particles) and compositions and methods of use thereof, where the viral particles comprise a VHH domain.

perjuicio en que incurran como resultado del uso de estas, tales como la toma de decisiones científicas, comerciales, financieras o de otro tipo.

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