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VacCiencia es una publicación dirigida a investigadores y especialistas dedicados a la vacunología y temas afines, con el ojetivo de serle útil.

Usted puede realizar sugerencias sobre los contenidos y de esa forma crear una retroalimentación que nos permita acercarnos más a sus necesidades de información.

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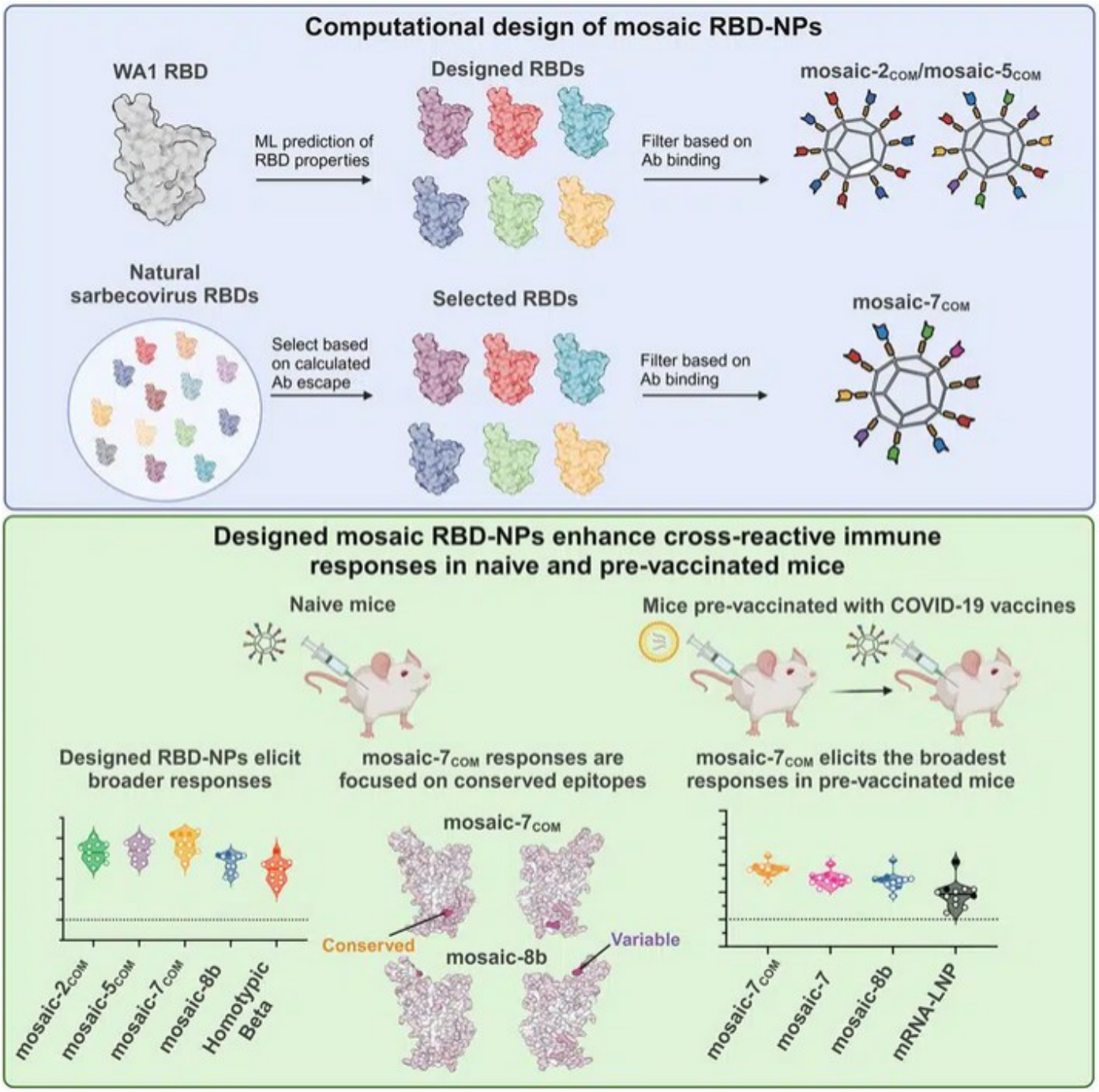
Una nueva vacuna con nanopartículas nos podría proteger de la próxima pandemia

24 ene. Los sarbecovirus son un subgrupo de coronavirus que incluye el SARS-CoV-2 y otros virus relacionados que tienen el potencial de saltar de animales a humanos. Estas amenazas han llevado a los investigadores a diseñar tecnologías que puedan ofrecer protección amplia frente a múltiples variantes. Entre estas innovaciones, los «mosaicos de nanopartículas» representan un avance significativo: una tecnología que combina fragmentos de proteínas virales (RBD) para generar respuestas inmunológicas amplias y difíciles de evadir por las mutaciones.

"El enfoque basado en nanopartículas ofrece protección frente a nuevas variantes del SARS-CoV-2 y otros virus relacionados".



Un equipo de científicos del Instituto Tecnológico de Massachusetts (MIT) y Caltech ha desarrollado un tipo innovador de vacuna basada en nanopartículas que podría revolucionar nuestra capacidad para enfrentar futuras pandemias. Diseñada específicamente para proteger contra variantes emergentes del SARS-CoV-2 y otros virus relacionados conocidos como sarbecovirus, esta vacuna apunta a regiones del virus que son menos propensas a mutar, ofreciendo una defensa más duradera y efectiva.

Cómo funciona la tecnología de mosaicos de nanopartículas

El corazón de esta vacuna radica en la técnica del «mosaico». En lugar de usar una sola versión del RBD (la región del virus que facilita la entrada a las células), los investigadores unieron hasta ocho versiones diferentes de RBD de sarbecovirus en nanopartículas. Estas proteínas están estratégicamente elegidas para incluir tanto regiones variables como conservadas. Las regiones variables son aquellas que mutan con facilidad para evadir el sistema inmune, mientras que las regiones conservadas son estables entre diferentes variantes.

Al presentar múltiples RBDs en una misma nanopartícula, se potencia la activación de linfocitos B que reconocen las regiones conservadas. Esto es crucial, ya que los anticuerpos que atacan esas áreas son más efectivos contra una variedad amplia de variantes. Los experimentos en animales demostraron que esta vacuna, conocida como mosaic-8, genera una respuesta inmune robusta contra diversas cepas del SARS-CoV-2 y otros sarbecovirus.

Innovaciones en el diseño de la vacuna

El equipo amplió sus esfuerzos al desarrollar versiones avanzadas como mosaic-7COM. Este diseño incluye siete proteínas RBD seleccionadas mediante técnicas computacionales que identificaron combinaciones ideales basadas en estabilidad, solubilidad y variabilidad. En estudios con ratones, las nuevas versiones no solo generaron anticuerpos efectivos contra SARS-CoV-2 y sus variantes, sino que también neutralizaron otros sarbecovirus, como los que circulan en murciélagos.

Otra mejora clave fue probar estas vacunas en ratones que habían sido previamente vacunados con vacunas mRNA contra COVID-19. Los resultados mostraron que mosaic-7COM ofreció respuestas inmunes más amplias en comparación con otras formulaciones previas. Esto simula la realidad de la población humana, donde muchas personas ya han sido vacunadas o infectadas por SARS-CoV-2.

Implicaciones futuras

El siguiente paso será realizar ensayos clínicos. Actualmente, el laboratorio de Caltech, con apoyo de la Coalición para la Innovación en la Preparación ante Epidemias, está probando la versión original mosaic-8 en humanos. Sin embargo, los investigadores esperan avanzar hacia ensayos con mosaic-7COM, que ha mostrado un mejor desempeño en estudios recientes.

Otra innovación futura será rediseñar estas vacunas para que se entreguen mediante tecnología mRNA, como las vacunas de Pfizer y Moderna. Esto haría más sencillo su desarrollo y distribución a gran escala, mejorando la preparación mundial frente a nuevas pandemias.

Una herramienta clave contra pandemias

Con los sarbecovirus representando una amenaza constante, esta vacuna podría convertirse en un pilar en la lucha contra pandemias. Al atacar las regiones más estables del virus, las nanopartículas en mosaico representan un avance significativo hacia vacunas universales contra el coronavirus, ofreciendo esperanza en un mundo cada vez más consciente de los riesgos globales.

Fuente: Quo elDiario.es. Disponible en https://lc.cx/Piw6fV

Bruselas firma la compra de 146 millones de vacunas de Moderna contra la COVID-19 para España y otros 16 países

24 ene. La Comisión Europea ha informado este viernes de la firma de un contrato de compra de 146 millones de dosis de la vacuna contra el coronavirus del laboratorio Moderna para asegurar el suministro a 17 países, entre ellos 15 miembros de la UE, incluido España, han indicado fuentes comunitarias.

"Es una prueba de los esfuerzos continuos por mejorar la preparación y garantizar el suministro de contramedidas médicas con las que proteger a los más vulnerables frente a la COVID-19", ha celebrado la comisaria de Gestión de Crisis, Hadja Lahbib.

Las vacunas comprometidas se pueden conservar en congeladores estándares, según ha subrayado la comisaria, lo que en la práctica facilita su uso rutinario y el que puedan ser enviadas en jeringuillas previamente rellenadas.

De este modo, dice Lahbib en un comunicado, "mejorará la eficacia de las campañas de vacunación" y se refuerza la seguridad sanitaria como elemento clave de la preparación de la UE frente a futuras crisis.

Los países que participan en este acuerdo de compra conjunta podrán acceder a un número de dosis en función de su contexto nacional y sin exigencias de un volumen mínimo de compra. El contrato, cuyo valor no ha trascendido, tendrá una duración máxima de cuatro años.

Fuente: infobae. Disponible en https://lc.cx/BUBYiW

Un estudio reafirma la necesidad de vacunar a adultos vulnerables de enfermedades neumocócicas invasivas

26 ene. Un estudio multicéntrico liderado por investigadores del Hospital de Bellvitge de L'Hospitalet de Llobregat (Barcelona), el Institut d'Investigació Biomèdica de Bellvitge (Idibell) y el Ciberes ha reafirmado la "necesidad de la vacunación en adultos" para protegerlos de las enfermedades neumocócicas invasivas, especialmente en mayores de 65 años y personas con comorbilidades.

"El estudio realizado por investigadores del Hospital de Bellvitge y el Idibell destaca la necesidad de vacunar a adultos, especialmente en los grupos de riesgo, de estas enfermedades".

El estudio, publicado en *Journal of Infection and Public Health*, constata la necesidad de continuar desarrollando y mejorando las vacunaciones contra neumococos para ampliar su cobertura, atendiendo a su gran capacidad de adaptación, ha informado este jueves el Idibell en un comunicado.

Este estudio pone de manifiesto la resiliencia de algunas variantes genéticas incluidas en la vacuna PCV13, que se ha utilizado en la prevención de estas enfermedades en niños

El *streptococus pneumoniae* es una bacteria que forma parte de la flora bacteriana natural de las vías respiratorias y también es responsable de una gran variedad de cuadros clínicos, que cuando son grave caen dentro del paraguas de las enfermedades neumocócicas invasivas.

El estudio pone de manifiesto la resiliencia de algunas variantes genéticas incluidas en la vacuna PCV13, que se ha utilizado en la prevención de estas enfermedades en niños, y resalta la necesidad de vacunar a la

población adulta para prevenir las enfermedades neumocócicas invasivas, especialmente en mayores de 65 años, así como la vigilancia de los serotipos emergentes de la bacteria.

Ha recogido más de 650 casos de enfermedades neumocócicas invasivas, siendo la neumonía el principal foco de la infección

El estudio, llevado a cabo entre 2019 y 2021, forma parte de una investigación colaborativa de Ciber y ha contado con la financiación del Instituto de Salud Carlos III. Ha recogido más de 650 casos de enfermedades neumocócicas invasivas, siendo la neumonía el principal foco de la infección, y ha estudiado la resistencia antibiótica y la caracterización genética de las cepas responsables de la enfermedad mediante secuenciación completa del genoma.

Capacidad de adaptación

Los resultados obtenidos subrayan la capacidad del neumococo para evolucionar y adaptarse, lo que pone de manifiesto para los investigadores la necesidad de mantener una vigilancia constante y una actualización de las estrategias de vacunación.

Actualmente, se han descrito más de 100 variantes genéticas del streptococus pneumoniae, conocidos como serotipos, que presentan diferencias en cuanto a la capacidad de invasión y mortalidad asociada y se ha visto como la vacunación ha provocado cambios en la epidemiología y sus serotipos. Este estudio ha identificado nuevos cambios, destacando la persistencia de algunos serotipos incluidos en la vacuna PCV13, como el serotipo 3, la aparición de nuevos linajes, como el caso del serotipo 4, y el aumento de otros no incluidos en la vacuna, como el serotipo 8.

Los investigadores sostienen que estos nuevos linajes emergentes están contribuyendo al aumento de este tipo de enfermedades, alcanzando niveles que se acerquen a los de la época prepandémica y enfatizando así la importancia de realizar una caracterización genética para conocer las características de los linajes con más capacidad de diseminación. El estudio ha constatado que el serotipo 3 continúa siendo uno de los principales causantes de enfermedad grave en adultos, por lo que sería necesario aumentar las tasas de vacunación en mayores de 65 años, inmunodeprimidos y personas con comorbilidades.

Fuente: iSanidad. Disponible en https://lc.cx/9oQHxc

New HPV vaccine shows promise in treating high-grade cervical lesions

Jan 27. A new vaccine targeting human papillomavirus type 16 (HPV16) has shown promise in reducing advanced precancerous cervical lesions, according to results from a phase II clinical trial published in Clinical Cancer Research.

Image Credit:
© Moschiorini - stock.adobe.com

"Nearly all premalignant cervical lesions and cervical cancers are caused by HPV infection, with HPV16 implicated in the majority of cases," said Refika Yigit, MD, lead researcher and gynecologist at University Medical Centre Groningen in the Netherlands.

The trial focused on grade 3 cervical intraepithelial neoplasia (CIN3), a condition where cells show significant precancerous changes. If untreated, about one-third of these cases progress to cervical cancer within 10 years, and nearly half within 30 years, Yigit explained.

"The main goal of our trial was to see if our vaccine—Vvax001—could provide an alternative to the standard surgical treatment, which often has complications," Yigit added.

The Vvax001 vaccine is a modified version of a virus that cannot replicate. It produces proteins specific to HPV16-infected cells. Previous research showed that the vaccine triggers strong immune responses against HPV16 proteins.

In the trial, 18 newly diagnosed HPV16-related CIN3 patients received 3 vaccine doses over 3 weeks. Each dose contained $5x10^7$ infectious particles. They were monitored for up to 19 weeks, with a final examination and biopsy conducted after treatment. Surgery was performed only if CIN2/3 lesions remained.

The results showed that nine of the 18 patients had improvements—6 had less severe changes in their cervical cells, and 3 had no signs of disease. Most patients saw a reduction in lesion size within a month of finishing treatment, with reductions evident as early as 3 weeks after the last immunization. Among the 9 patients whose disease did not improve, surgery was performed, but no remaining disease was found in four cases, suggesting the vaccine may have worked over time.

Histopathological analysis revealed a complete response (regression to CIN1 or no dysplasia) in 50% of the patients. Additionally, HPV16 clearance was observed in 10 of the 16 patients tested (63%). However, the vaccine did not clear other HPV types.

"To our knowledge, this makes Vvax001 one of the most effective vaccines for treating HPV16-related CIN3 reported so far," Yigit said. "If confirmed in larger studies, our findings suggest that many patients with CIN3 might be able to avoid surgery and its potential complications."

Clearing HPV from the body is linked to a lower chance of the disease coming back. In this study, 10 of the 16 patients tested no longer had HPV16, including all nine whose condition improved. Two patients whose disease did not improve also cleared HPV16, but their lesions were linked to other HPV types. After a median follow-up of 20 months, no patients had a recurrence. The longest disease-free survival time observed was 30 months.

While the results are encouraging, the study limitations included a small sample size, limited follow-up time, and the lack of a comparison group for natural recovery due to ethical reasons. No serious adverse events related to the treatment were observed.

The authors concluded that these results represent an important step forward in the fight against HPV-related cervical cancer. Further research is needed to confirm the vaccine's effectiveness and safety in larger, more diverse groups.

Fuente: Contemporary OB/GYN. Disponible en https://lc.cx/Xg-WCJ

Cervical cancer elimination: progress evident, but tragically slow

Jan 27. The WHO European Region is getting closer to a future in which women do not die of cervical cancer. With greater efforts to increase vaccination against human papillomavirus (HPV) and cervical cancer screening and treatment, that future could arrive much sooner, saving the lives of many more young women in the coming years.

World Health Organization

The WHO European Region is getting closer to a future in which women do not die of cervical cancer. With greater efforts to increase vaccination against human papillomavirus (HPV) and cervical cancer screening and

treatment, that future could arrive much sooner, saving the lives of many more young women in the coming years.

“Eliminating cervical cancer is no longer a distant dream – it is a tangible goal within reach for the WHO European Region. January is cervical cancer awareness month and an opportunity to recognize the relentless efforts and significant advancements in HPV vaccination, thanks to which the path to elimination is clearer than ever.

As the father of two daughters, this progress is deeply meaningful to me, knowing that future generations of women will be better protected from this preventable disease. But we must move faster. By vaccinating more adolescents and screening more women, we can save many lives in years ahead,” explains Dr Hans Henri P. Kluge, WHO Regional Director for Europe.

Milestones and momentum

* Every year more countries in the Region include HPV vaccination in their routine immunization programmes. With the addition of Kazakhstan in 2024, 47 of 53 countries now offer HPV vaccination to adolescent girls. Kosovo* also introduced the vaccine in 2024.
* Including boys in HPV vaccination programmes increases impact, both on cervical cancer among women, thanks to herd immunity, and on other types of cancer and genital warts among both men and women. Currently, 39 countries in the Region now offer HPV vaccination to boys and girls.
* Some countries have achieved and maintained high vaccination coverage, including Portugal, where vaccination was introduced in 2008, and coverage with at least one dose among girls has remained consistently above 90%.

This progress has impact. Studies in several countries in the European Region with high vaccination uptake have identified:

* up to 90% reduction in infections with high-risk HPV types (16 and 18) in age groups targeted by national immunization programmes;
* up to 70% reduction in pre-cancer risk in young women compared to the pre-vaccine era;
* dramatic declines in the incidence of invasive cervical cancer in young women compared to the period before vaccination – for example, studies conducted in Finland and the United Kingdom (Scotland) found no cases of cervical cancer among young women who were vaccinated against HPV at 12–13 years of age.

Unfortunately, vaccination uptake in many countries remains well below the 90% target. In 2023, HPV vaccination rates for boys in the Region rose significantly, climbing from just 1% in 2018 to 16%; however, coverage for girls increased only slightly, from 27% to 30% over the same period.

“HPV vaccination is incredibly safe and effective. We must provide timely protection to ensure that no more women lose their lives, their health or their fertility to a preventable cancer,” adds Dr Kluge.

Prevention, detection and treatment

The impact of HPV vaccination is visible in stages. In the first years following widespread uptake of HPV vaccination, countries see a decrease in the rate of HPV infections among teenagers and young adults. This is followed by a decrease in the rate of pre-cancerous lesions among young women caused by persistent HPV infection.

It typically takes several years or even decades for pre-cancerous lesions to develop into cervical cancer, so it can take one or more decades before the impact of vaccination on cervical cancer incidence becomes visible. Vaccination cannot prevent 100% of cases, so cervical cancer screening remains vital for early detection of any cases that may still develop.

Screening can detect precancerous lesions before they progress to cancer, enabling timely treatment and preventing cancer development. According to 2023 data, 37 out of 53 Member States in the WHO European Region have implemented organized population-based screening programmes. However, only 15 of these reach a coverage of 70% or higher. Ensuring that high-quality cervical cancer screening programmes are part of patient care pathways, including diagnosis and treatment, is essential.

Persistent HPV infection can lead to cervical cancer, which poses a serious public health problem. According to WHO estimates for 2022, each year in the European Region about 60 000 women are newly diagnosed with cervical cancer and more than 32 000 die from this preventable disease. WHO supports a comprehensive approach to preventing, detecting and treating cervical cancer.

Vaccines for preventing high-risk HPV types and offering cross-protection against HPV types not included in the vaccines, have been available since 2006. Since then, over 500 million doses of HPV vaccines have been distributed, and studies on HPV vaccine safety involving several million people have assessed a wide range of health outcomes. None of these studies have identified any safety concerns.

Looking ahead

The “Roadmap to accelerate the elimination of cervical cancer as a public health problem in the WHO European Region 2022–2030” outlines priority actions to guide Member States in reaching the 2030 targets – the “90-70-90 targets” – set by the Cervical Cancer Elimination Initiative:

* 90% of girls fully vaccinated with the HPV vaccine by age 15;
* 70% of women screened using a high-performance test by age 35, and again by age 45;
* 90% of women identified with cervical disease receive treatment (90% of women with precancer treated, and 90% of women with invasive cancer managed).

Increased efforts are needed in every country to identify and remove barriers to HPV vaccination, cervical cancer screening and quality treatment. As outlined in the roadmap, for vaccination these include initiating steps for evidence-informed decision-making on the introduction of HPV vaccine (in countries without an HPV vaccination programme); developing catch-up vaccination strategies; ensuring vaccination services are tailored to meet the needs of the target population, including hard-to-reach groups; and building capacity of health-care workers on how to communicate with young people and parents about the HPV vaccine.

Fuente: WORLD HEALTH ORGANIZATION. Disponible en https://lc.cx/tEwsNV

A cinco años de la COVID-19: la pandemia no ha terminado

28 ene. Ha pasado un lustro desde que un virus hasta entonces desconocido llegó para alterar la vida cotidiana en todo el mundo. El germen no tenía nombre ni la enfermedad que causaría, pero terminó desencadenando una pandemia que expuso deficiencias y desigualdades en los sistemas de salud de todo el mundo, transformando la opinión pública sobre cómo controlar los virus emergentes mortales.

A principios de diciembre de 2019, se detectó una neumonía de origen desconocido en la ciudad de Wuhan,

China. Semanas después, la Organización Mundial de la Salud (OMS) tuvo conocimiento por primera vez del brote de neumonía viral.

Hasta mediados de enero de 2025, de acuerdo con el micrositio de la OMS que sigue actualizando cifras en torno a la pandemia, los países del mundo han reportado alrededor de 7.1 millones de defunciones por COVID-19, aunque el mismo organismo reconoce que, con base en el exceso de muertes observado durante los últimos años, la cifra real ronda los 21 millones de decesos.

En ese contexto, en diciembre de 2024 se realizó en Awaji, Japón, un encuentro internacional de epidemiólogos bajo el nombre de “Cómo prepararnos para la siguiente pandemia”, donde las conclusiones del evento de cuatro días comenzaron a sonar en el marco de la inauguración: la pandemia no ha terminado.

Y es que la propia OMS sigue reportando entre 800 y 1,000 muertes por COVID-19 cada semana, solamente contando a los 34 países que siguen compartiendo estos datos.

En el foro realizado en Japón, al que asistieron 140 investigadores y funcionarios de salud de 17 países, Maria Van Kerkhove, epidemióloga de la OMS, dijo que “nadie quiere hablar de COVID-19", y que “todo el mundo actúa como si esta pandemia no hubiera ocurrido”.

Así mismo, precisó que cinco años después de que el coronavirus bautizado como SARS-CoV-2 apareciera, los científicos siguen intentando intensamente comprenderlo y la enfermedad que causa.

En efecto, la pandemia no ha terminado, pese a que el mundo siente una enorme atracción por volver al status quo anterior, que en cierta forma ya se hizo, tal vez prematuramente.

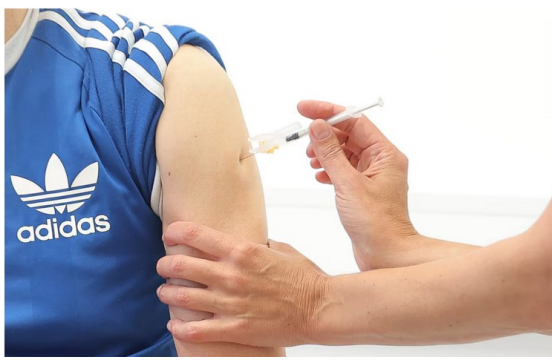
Lo que más preocupó a algunos de los asistentes a la conferencia, según reportó la revista *Science*, una de las publicaciones académicas más importantes del mundo, es que muchos países se han vuelto hostiles a la investigación para la prevención de las pandemias.

Algunos de los temas que se abordaron durante el encuentro de cuatro días fueron el origen de la pandemia, los patrones mutacionales del SARS-CoV-2, nuevos tratamientos y estrategias de vacunación para proteger al mundo de futuras amenazas.

Cabe señalar que incluso entre los asistentes hubo personas que sospechan que el SARS-CoV-2 se filtró del Instituto de Virología de Wuhan, que al día de hoy se desconoce el origen exacto de este coronavirus y que si bien la OMS declaró el final de la emergencia de salud pública de importancia internacional el 5 de mayo de 2023, no ha declarado que la pandemia de COVID-19 terminó.

Como contexto, la pandemia de VIH/SIDA fue declarada en 1981, ha cobrado la vida de más de 42.3 millones de personas y no se ha declarado su final.

Otro artículo publicado este vez por la revista *Newsweek* ofrece un panorama similar a las conclusiones de Awaji y a lo publicado por *Science*: la pandemia no ha terminado, y se anticipa que este año se desarrollará de forma similar al 2024 en materia de COVID-19: brotes asociados con nuevas variantes y una disminución de la inmunidad de la población.



Sobre la vacunación, el infectólogo del Centro Médico ABC, Francisco Moreno Sánchez, enfatizó a Metro que “estoy convencido de que se tienen que seguir aplicando y se tienen que seguir actualizando, ya que

se trata de un virus que sigue mutando. Pero la gente se tiene que seguir vacunando, de eso no hay duda, para evitar cuadros graves y la muerte".

LAS CLAVES

A principios de diciembre de 2019, se detectó una neumonía de origen desconocido en la ciudad de Wuhan, China. Semanas después, la Organización Mundial de la Salud (OMS) tuvo conocimiento por primera vez de un brote de neumonía viral.

* El 1 de enero de 2020, la Organización Mundial de la Salud (OMS) solicitó nueva información a las autoridades sanitarias de China para evaluar adecuadamente el riesgo real de la epidemia.
* El 30 de enero de 2020, la OMS declaró una emergencia de salud pública de importancia internacional, condición que mantuvo hasta el 5 de mayo de 2023, cuando decretó el fin de la emergencia sanitaria – aunque no el fin de la pandemia.
* El 11 de marzo de 2020, ante la rápida y progresiva expansión de la epidemia a nivel internacional, la OMS decretó el estado de pandemia, pidiendo a los países activar e incrementar mecanismos de respuesta a la emergencia.

Fuente: Publimetro. Disponible en https://lc.cx/roNx1j

French health authority issues pneumococcal vaccine recommendation for over 65s

Jan 29. France's health advisory authority is recommending that pneumococcal vaccine coverage be extended to cover all people aged 65 and over and not just those with comorbidities.

It comes amidst a rise in cases of pneumococcal pneumonia in France, which has a fatality rate of 10% in hospitals. Older patients are particularly affected.

"Four seasonal vaccines are now recommended for this age group".

A vaccine has been recommended for people aged 65 and over with comorbidities since July 2023, but now the Haute autorité de sante (HAS) wants this widened to include everyone in the age group.

The seasonal vaccine is administered in a single dose, and can be given concurrently alongside other vaccines such as against COVID-19 and flu.

It is up to the French Health Ministry to decide if they wish to follow the recommendation (historically it usually does). The HAS issued its report independently of the ministry.

It means for people ages 65 and over four vaccines – against COVID-19, influenza, shingles, and now pneumococcus – and one booster (DTP, diphtheria, tetanus and polio) are recommended.

Flu vaccine coverage has been exceptionally extended to the end of February this winter period after a spike in flu cases this January.

Half of hospitalisations involve patients without comorbidities

The Streptococcus pneumoniae bacterium – which is responsible for pneumococcal infections – is the leading cause of invasive infections (meningitis, bacteremia) in adults in France. It is also a leading cause of flu in France.

Around 60% of these infections occur in patients aged 65 and over, and the severity of illnesses triples in people of this age group.

The HAS states in its report that age alone is considered a risk factor for infection from the bacteria.

Around half of all people aged 65 and over who are hospitalised with pneumonia, and a quarter of all patients hospitalised for an invasive pneumococcal infection such as meningitis of that age group have no comorbidities.

Fuente: The Connexion. Disponible en https://lc.cx/EcxFok

Shionogi Announces Positive Results from Phase 2 Trial of Respiratory Syncytial Virus Oral Antiviral Candidate S-337395

Jan 30. Shionogi & Co., Ltd. (Head Office: Osaka, Japan; Chief Executive Officer: Isao Teshirogi, Ph.D.; hereafter "Shionogi") is pleased to announce that its novel investigational respiratory syncytial virus (RSV) oral antiviral candidate S-337395, which is being jointly developed with UBE Corporation (Head office: Minato-ku, Tokyo; President and Representative Director: Masato Izumihara; hereafter "UBE"),has achieved its primary endpoint in a Phase 2 clinical trial.

This trial was a randomized, placebo-controlled, double-blind human challenge study conducted in healthy adults who were actively inoculated with RSV. The antiviral efficacy and safety of S-337395 were evaluated when administered orally once daily for five days. The S-337395 treatment group showed a statistically significant reduction in viral load compared to the placebo group, achieving the primary endpoint. In the highest dose group of S-337395, there was an 88.94% reduction in viral load ($P<0.0001$), and also a statistically significant improvement in clinical symptom scores. Additionally, S-337395 was generally safe and well tolerated, there were no serious or severe adverse events, and no dose-dependent increase in incidence or severity of adverse events. No participants discontinued due to adverse events.

S-337395 is an investigational oral antiviral candidate for RSV infection that inhibits the activity of the L protein, which is essential for virus replication.1,2 Furthermore, this drug has received Fast Track designation from the U.S. Food and Drug Administration (FDA).3

RSV is a common respiratory virus that infects the nose, throat, and lungs, and can also cause severe illness such as bronchiolitis and pneumonia in children younger than 1 year of age.4 In recent years, there has been a growing awareness that RSV also causes high rates of hospitalization and mortality amongst individuals aged 60 and older. It is estimated that there are over 3 million patients with RSV infection annually in the U.S. 5,6 Effective antiviral treatment options for RSV remain limited, and there continues to be a significant unmet medical need in this area.7 We are accelerating the development of S-337395 to provide it to patients suffering from RSV infections as soon as possible.

Shionogi is committed to the principle "Protecting people worldwide from the threat of infectious diseases" as our key focus, and is working on the realization of total care for infectious diseases. In response to acute respiratory infections driving epidemics (such as influenza and COVID-19, RSV), we are working to build a new business model with an expanded portfolio of treatments achieving stable revenue.

SHIONOGI

About S-337395

S-337395 is a novel investigational oral treatment for RSV infection discovered through joint research with UBE. It is a low-molecular-weight compound with a novel mechanism that inhibits the RNA-dependent RNA polymerase activity of the L protein possessed by the RSV , thereby inhibiting the transcription and replication of the viral genome. Unlike F protein inhibitors, which exert their effect by preventing new viral infection of cells extracellularly, S-337395 works by preventing viral proliferation within infected cells, thus potentially offering higher efficacy and a more rapid reduction in viral load. Currently, under the joint development agreement2 with UBE, Shionogi is advancing the global clinical development, while UBE is responsible for the development and manufacturing of the active pharmaceutical ingredient. By leveraging each company's strengths, we are advancing the joint development of this drug.

Fuente: Shionogi. Disponible en https://lc.cx/uZT3RF

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Estrategia de búqueda: (Vaccine) AND DP:([24.01.2025 TO 31.01.2025]) *as the publication date 26 records.*

1.WO/2025/020119PREPARATION AND USAGE METHOD OF INACTIVATED VACCINE COMPOSITION FOR PROGRESSIVE ATROPHIC RHINITIS

WO - 30.01.2025

Clasificación Internacional A61K 39/102Nº de solicitud PCT/CN2023/109276Solicitante ANHUI SCIENCE AND TECHNOLOGY UNIVERSITY.Inventor/a JIN, Mengmeng

The present invention belongs to the technical field of veterinary biological products, and specifically relates to a preparation and usage method of an inactivated vaccine composition for progressive atrophic rhinitis. The inactivated vaccine composition for progressive atrophic rhinitis comprises swine toxigenic Pasteurella multocida (ZXT+Pm), swine Bordetella bronchiseptica (AHBb), N-terminal and C-terminal proteins of toxigenic Pasteurella multocida toxin (PMT) (rPMT-N and rPMT-C) and a carbomer water adjuvant.

2.RE050281MAMMALIAN MILK OSTEOPONTIN FOR ENHANCING IMMUNE RESPONSIVENESS

US - 28.01.2025

Clasificación Internacional A61K 39/39Nº de solicitud 17573707Solicitante ARLA FOODS AMBAInventor/a Anne Staudt Kvistgaard

The disclosed invention provides mammalian milk osteopontin and/or an active truncation or active peptide thereof for improving immune responsiveness to an infectious disease in a mammal, for example a human subject, as well as enhancing the efficacy of vaccination for the prophylactic or therapeutic treatment of an infectious disease in mammals, such as humans. The invention further provides a vaccine system, for use in the prophylactic or therapeutic treatment of an infectious disease in a mammal, comprising a vaccine and a mammalian milk osteopontin and/or an active truncation or active peptide thereof for oral administration to a mammal, as well as methods of enhancing immune resistance to an infectious disease in a mammal by administration of a vaccine and a mammalian milk osteopontin and/or an active truncation thereof.

3.WO/2025/019966HEXAVALENT NOROVIRUS VLP VACCINE AND PREPARATION METHOD THEREOF

WO - 30.01.2025

Clasificación Internacional C07K 14/08Nº de solicitud PCT/CN2023/108522Solicitante CHENGDU KANGHUA BIOLOGICAL PRODUCTS CO., LTD.Inventor/a LIU, Hui

Disclosed are a hexavalent norovirus VLP vaccine formulation and a preparation method thereof. The formulation comprises six proteins having amino acid sequences shown in SEQ ID No. 2, SEQ ID No. 4, SEQ ID No. 6, SEQ ID No. 8, SEQ ID No. 10, and SEQ ID No. 12. A Pichia pastoris expression system was used to develop the hexavalent norovirus vaccine. Sequencing, digestion, and exogenous gene expression detection were conducted to identify recombinant vectors and select high-expression strains. VLPs were purified by sucrose density gradient centrifugation and identified by electron microscopy.

4.4496578MRNA-IMPFSTOFFZUSAMMENSETZUNGEN UND DEREN VERWENDUNG

EP - 29.01.2025

Clasificación Internacional A61K 31/7105Nº de solicitud 23712909Solicitante OSIVAXInventor/a LE VERT ALEXANDRE

The invention relates to immunogenic or vaccine compositions and their use in particular in the prevention or treatment of infectious or cancer disorders. More specifically, the immunogenic or vaccine compositions of the present invention comprises a ribonucleic acid (RNA) molecule comprising an open-reading frame encoding a fusion protein, wherein said fusion protein comprises or essentially consists of: (i) a first polypeptide domain comprising either a. an antigen or a fragment thereof comprising at least one epitope of said antigen, b. a peptide moiety comprising a single epitope of an antigen, or c. a plurality of peptide moieties, wherein each peptide moiety comprises an epitope of an antigen and wherein said peptide moieties are fused together, optionally via peptide linker, said first polypeptide domain being fused to (ii) a second polypeptide domain comprising a C4bp-derived oligomerization domain and a positively charged tail.

5.WO/2025/022153VACUNA RECOMBINANTE CONTRA DIARREA EPIDÉMICA PORCINA EN VECTOR VIRAL

WO - 30.01.2025

Clasificación Internacional A61K 39/215Nº de solicitud PCT/IB2023/057483Solicitante LABORATORIO AVI-MEX, S.A. DE C.V.Inventor/a LOZANO-DUBERNARD, Bernardo

Se describe una vacuna recombinante contra diarrea epidémica porcina (PED) que comprende un vector viral que tiene insertada una secuencia de nucleótidos exógena que codifica para sitios antigénicos del virus 2 de PED, y un vehículo, adyuvante y/o excipiente farmacéuticamente aceptable, en donde dicha vacuna está adaptada para generar una respuesta inmune en cerdos sin ser combinada con otras vacunas o versiones del virus 2 de PED.

6.WO/2025/022020VACCINE COMPOSITION FOR THE TREATMENT OR PREVENTION OF *HEPATITIS A INFECTION*

WO - 30.01.2025

Clasificación Internacional A61K 39/12Nº de solicitud PCT/EP2024/071490Solicitante UNIVERSITAT DE BARCELONAInventor/a PINTÓ SOLÉ, Rosa María

The present disclosure relates to Extracellular Vesicles, such as exosomes, comprising *hepatovirus* viral capsids or *hepatovirus* antigenic polypeptides useful as vaccine compositions to treat and/or prevent hepatitis A virus infection. The present disclosure also relates to methods of producing such EVs, e.g, exosomes, and uses thereof.

7.WO/2025/023291METHOD FOR PRODUCING INACTIVATED INFLUENZA VACCINE BY EGG CULTURE METHOD

WO - 30.01.2025

Clasificación Internacional A61K 39/145Nº de solicitud PCT/JP2024/026583Solicitante KM BIOLOGICS CO., LTD.Inventor/a OHYAMA, Yusuke

A method for producing an inactivated influenza vaccine by an egg culture method according to the present disclosure includes a pathogen inactivation step for inactivating pathogens mixed in eggs, wherein the pathogens are other than influenza viruses.

8.20250032600ATTENUATED BORDETELLA STRAINS

US - 30.01.2025

Clasificación Internacional A61K 39/02Nº de solicitud 18807921Solicitante Institut Pasteur de LilleInventor/a Camille Locht

A mutated *Bordetella* strain comprising at least a mutated ptx gene, a deleted or mutated dnt gene and a heterologous ampG gene is provided. The attenuated mutated *Bordetella* strain can be used in an immunogenic composition or a vaccine for the treatment or prevention of a *Bordetella* infection. Use of the attenuated *Bordetella* strain for the manufacture of a vaccine or immunogenic composition, as well as methods for protecting mammals against infection by *Bordetella* are also provided.

9.WO/2025/022178IN-SITU MRNA VACCINE PRODUCTION METHOD AND DEVICE

WO - 30.01.2025

Clasificación Internacional Nº de solicitud PCT/IB2024/000418Solicitante APTE, Zachary, SchulzInventor/a APTE, Zachary, Schulz

The present invention relates to an in-situ device for producing nucleic acid-based vaccines and therapeutics, particularly RNA vaccines. The device integrates multiple steps of vaccine production, including DNA transcription into RNA, RNA purification, and RNA encapsulation in a lipid carrier, into a single automated unit. This approach reduces contamination risk and allows rapid, scalable production of vaccines, facilitating immediate responses to emerging infectious diseases and simplifying logistics by producing vaccines close to the point of care.

10.4496585DREIFACHIMPFSTOFF ZUM SCHUTZ VOR BAKTERIELLEN UND PILZPATHOGENEN DURCH TRAINIERTE IMMUNITÄT

EP - 29.01.2025

Clasificación Internacional A61K 39/39Nº de solicitud 23775424Solicitante UNIV SOUTHERN CALIFORNIAInventor/a SPELLBERG BRAD

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

11.WO/2025/021112ENGINEERED CELL FOR DEVELOPING NEOANTIGEN OF MHC

WO - 30.01.2025

Clasificación Internacional C12N 1/19Nº de solicitud PCT/CN2024/107278Solicitante JWE (BEIJING) SCIENCE TECHNOLOGY, INC.Inventor/a JIANG, Wei

Disclosed is an engineered cell for developing a neoantigen of MHC, an engineered cell capable of displaying a trimer of a major histocompatibility complex and an antigen peptide, a nucleic acid encoding the trimer, and

the use of the engineered cell and a preparation method therefor. The engineered cell can be used for accurate and efficient high-throughput screening of MHC-II target peptides and for the development of the neoantigen and a relevant vaccine and immunotherapy thereof. Also disclosed are an engineered cell capable of displaying a major histocompatibility complex, a nucleic acid encoding the MHC, and the use of the engineered cell and a preparation method therefor. The engineered cell can be used for accurate and efficient screening of MHC-II target peptides, and are applied to the development of a vaccine and T cell immunotherapy.

12.3471760HIDTIL UKENDTE IMMUNOGENE FORMULERINGER, DER OMFATTER LINEÆRE ELLER FORGRENEDE POLYACRYLSYREPOLYMERADJUVANSER

DK - 27.01.2025

Clasificación Internacional A61K 39/00Nº de solicitud 17736804Solicitante Boehringer Ingelheim Vetmedica GmbHInventor/a PARISOT, Alexis, Guy, André, Lucien

The present invention provides for novel immunological and vaccine formulations comprising a newly applied non-crosslinked polyacrylic acid polymer adjuvant. The adjuvants may be combined with a wide variety of immunogens to produce vaccines that are safe and effective when administered to a wide range of target animals. The immunogens may include, but are not limited to: inactivated pathogens, attenuated pathogens, subunits, recombinant expression vectors, plasmids or combinations thereof. The animals may include, but are not limited to: humans, murine, canines, felines, equines, porcines, ovines, caprines and bovines.

13.20250032603EXPRESSION OF THE SPIKE S GLYCOPROTEIN OF SARS-COV-2 FROM AVIAN PARAMYXOVIRUS TYPE 3 (APMV3)

US - 30.01.2025

Clasificación Internacional A61K 39/215Nº de solicitud 18710343Solicitante The U.S.A., as represented by the Secretary, Department of Health and Human ServicesInventor/a Ursula Buchholz

Coronavirus spike protein, for example, SARS-CoV-2 spike (S) protein, expressed by an avian paramyxovirus type 3 (APMV3) as a vaccine vector for prevention and treatment against infection, such as SARS-CoV-2.

14.4496584NIEDRIGDOSIERTE NEOANTIGEN-IMPFSTOFFTHERAPIE

EP - 29.01.2025

Clasificación Internacional A61K 39/00Nº de solicitud 23775861Solicitante GRITSTONE BIO INCInventor/a JOOSS KARIN

Disclosed herein are compositions that include antigen-encoding nucleic acid sequences and/or antigen peptides. Also disclosed are nucleotides, cells, and methods associated with the compositions including their use as vaccines, including vectors and methods for a heterologous prime/boost vaccincation strategy.

15.WO/2025/021704VACCINE

WO - 30.01.2025

Clasificación Internacional A61K 47/64Nº de solicitud PCT/EP2024/070606Solicitante GLAXOSMITHKLINE BIOLOGICALS SAInventor/a RENUKUNTLA, Santosh

The present invention relates to conjugates comprising polysaccharides comprising 3- deoxy-D-manno-actulosonic acid (KDO) moieties, particularly conjugates produced using random conjugation methods, methods for preparing such conjugates, immunogenic compositions and vaccines comprising the conjugates, and methods of treatment or medical uses using the compositions and vaccines.

16.WO/2025/019900CHIMERIC PROTEIN VACCINE

WO - 30.01.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/AU2024/050794Solicitante DENTERIC PTY LTDInventor/a REYNOLDS, Eric

The present invention provides a chimeric or fusion protein for inducing an immune response to P. gulae, the protein comprising a first polypeptide and a second polypeptide, wherein: A) the first polypeptide comprises or consists of an amino acid sequence of the active site of an Arg- or Lys-gingipain of *P. gulae*, or a sequence that is at least 80% identical thereto; and B) the second polypeptide comprises or consists of: the amino acid sequence of a DUF2436 domain of a *P. gulae* Arg- or Lys-gingipain; and the amino acid sequence of an adhesin domain of an Arg- or Lys-gingipain of *P. gulae.*

17.20250032607LIPID NANOPARTICLE-BASED ANTI-FENTANYL VACCINE

US - 30.01.2025

Clasificación Internacional A61K 39/385Nº de solicitud 18767360Solicitante Universiteit GentInventor/a Bruno De Geest

The present invention provides a lipid nanoparticle comprising a fentanyl hapten, and a T helper peptide and/or an adjuvant, wherein the fentanyl hapten is conjugated to the outer surface of the lipid nanoparticle, and wherein the T helper peptide and/or the adjuvant is/are encapsulated within the lipid nanoparticle. The invention further provides a pharmaceutical composition comprising the lipid nanoparticle and uses thereof for inducing an immune response against fentanyl and the prevention or treatment of a fentanyl abuse disorder or a fentanyl addiction or a fentanyl overdose in a subject. Further provided herein is a method for preparing the lipid nanoparticle of the invention.

18.20250034214INFLUENZA VIRUS REPLICATION FOR VACCINE DEVELOPMENT

US - 30.01.2025

Clasificación Internacional C07K 14/005Nº de solicitud 18908520Solicitante Wisconsin Alumni Research Foundation (WARF)Inventor/a Yoshihiro Kawaoka

An isolated recombinant influenza virus is provided having PA, PB1, PB2, NP, NS, M, NA and HA viral segments, wherein the PB1 viral segment encodes a PB1 with a residue other than isoleucine at position 711 or the M viral segment encodes a M1 with a residue other than methionine at position 128, wherein the recombinant influenza virus has enhanced replication relative to a corresponding influenza virus having a PB1 viral segment that encodes a PB1 with an isoleucine at position 711 or having a M viral segment that encodes a M1 with methionine at position 128, as well as methods of making and using the virus.

19.20250037791ARTIFICIAL INTELLIGENCE (AI) IN SELF - NON SELF (SNS) MODELING IN TRIPLE NEGATIVE BREAST CANCER TO DEVELOP THIRD GENERATION IMMUNE CHECK POINT INHIBITOR

US - 30.01.2025

Clasificación Internacional G16B 15/30Nº de solicitud 18751664Solicitante Kumarpal A. SHAHInventor/a Kumarpal A. SHAH

Solutions for prophylaxis, immune therapy and vaccine strategies for triple negative breast cancer. The immune pathogenesis of cancer and its tumor micro environment (TME) is defined in terms of SNS concept that contributes to cancer drug resistance and metastasis. In one embodiment a method for identifying candidate drug compounds for treating cancer is provided by training an artificial intelligence engine for simulating Self-Non Self (SNS) modeling of normal subjects. An analysis module of an artificial intelligence engine is generated which directs the simulated SNS modeling to specific cancer to redefine cancer immune pathogenesis. SNS mimicking compounds are identified with the analysis module to target immune pathogenesis of cancer. The analysis module is applied to screen candidate cancer drugs that can be combined strategically with SNS mimicking compound for cancer therapy.

20.WO/2025/023311COMPOSITION FOR USE IN VACCINE

WO - 30.01.2025

Clasificación Internacional A61K 47/18Nº de solicitud PCT/JP2024/026712Solicitante OSAKA UNIVERSITYInventor/a YOSHIOKA, Yasuo

The present invention relates to a composition for use in vaccines, the composition containing a cationic lipid represented by formula (1).

21.WO/2025/021106PYRIDIN[3,2-D]PYRIMIDIN-2-AMINE DERIVATIVE, PREPARATION METHOD THEREFOR, AND USE THEREOF

WO - 30.01.2025

Clasificación Internacional C07D 487/04Nº de solicitud PCT/CN2024/107228Solicitante BEIJING SYNTHETIC VACCINE BIOSCIENCES CO., LTD.Inventor/a LIAO, Xuebin

A pyridin[3,2-d]pyrimidin-2-amine derivative, a preparation method therefor, and a use thereof. The pyridin[3,2-d]pyrimidin-2-amine derivative can be used as a TLR7/8 dual agonist, and is used for treating diseases related to TLR activity, such as diseases caused by virus (such as HBV and HIV) infection, tumors, and inflammatory diseases. In particular, the provided pyridin[3,2-d]pyrimidin-2-amine derivative has better physicochemical properties, druggability, cardiac safety and oral bioavailability, and has very good research and application value in the field of medicine.

22.WO/2025/019901RNA VACCINES

WO - 30.01.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/AU2024/050795Solicitante DENTERIC PTY LTDInventor/a SMITH, Christopher

The present invention relates to RNA-containing vaccine compositions for inducing an immune response to *Porphyromonas gingivalis* in a subject, and uses thereof.

23.WO/2025/019903RNA VACCINES FOR USE IN ANIMAL HEALTH

WO - 30.01.2025

Clasificación Internacional A61K 39/02Nº de solicitud PCT/AU2024/050797Solicitante DENTERIC PTY LTDInventor/a SMITH, Christopher

The present invention relates to RNA-containing vaccine compositions for inducing an immune response to *Porphyromonas gulae* in a subject, and uses thereof.

24.20250032601METHODS OF MAKING AND USING UNIVERSAL CENTRALIZED INFLUENZA VACCINE GENES

US - 30.01.2025

Clasificación Internacional A61K 39/145Nº de solicitud 18800951Solicitante NUtech VenturesInventor/a Eric Anthony Weaver

This document describes a number of different polypeptide sequences, and the nucleic acid sequences encoding such polypeptide sequences, that can be used alone or in combination as universal vaccines against viruses including influenza A or influenza B in humans or influenza in swine.

25.WO/2025/021997NEW MAP4K1 INHIBITORS

WO - 30.01.2025

Clasificación Internacional C07D 487/20Nº de solicitud PCT/EP2024/071341Solicitante DEUTSCHES KREBSFORSCHUNGSZENTRUM STIFTUNG DES ÖFFENTLICHEN RECHTSInventor/a MIYATAKE ONDOZABAL, Hideki

The present invention covers MAP4K1 inhibitor compounds of formula (I) as described and defined herein, methods of preparing said compounds, intermediate compounds useful for preparing said compounds, pharmaceutical compositions and combinations comprising said compounds, and the use of said compounds for manufacturing pharmaceutical compositions for the treatment or prophylaxis of diseases, in particular for treatment, amelioration or prevention of neoplastic or abnormal cell proliferative disorders, such as cancer, conditions with dysregulated immune response, other disorders associated with aberrant Map4K1 signaling, or amelioration of vaccine therapies or cell therapies, as a sole agent or in combination with other active ingredients.

26.2994561VEGFR-2 TARGETING DNA VACCINE FOR COMBINATION THERAPY

ES - 27.01.2025

Clasificación Internacional A61K 39/00Nº de solicitud 19205420Solicitante Vaximm AGInventor/a Lubenau, Heinz

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