FINLAY
EDICIONES

BOLETÍN VACCIENCIA

No. 13 (23 junio - 30 junio/2020)

VaCyT

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IFV INSTITUTO FINLAY DE VACUNAS

...vacunar es prevenir.

Análisis bibliométrico sobre ensayos clínicos en vacunas de subunidades proteicas

Fuente de información utilizada:

WEB OF SCIENCE™

Estrategia de búsqueda:

TOPIC: ("Protein Subunit Vaccines") 95 records

Periodo de estudio 1999-2020

Las variables utilizadas en el análisis fueron:

⇒ Productividad científica por año.

⇒ Autores con mayor productividad científica.

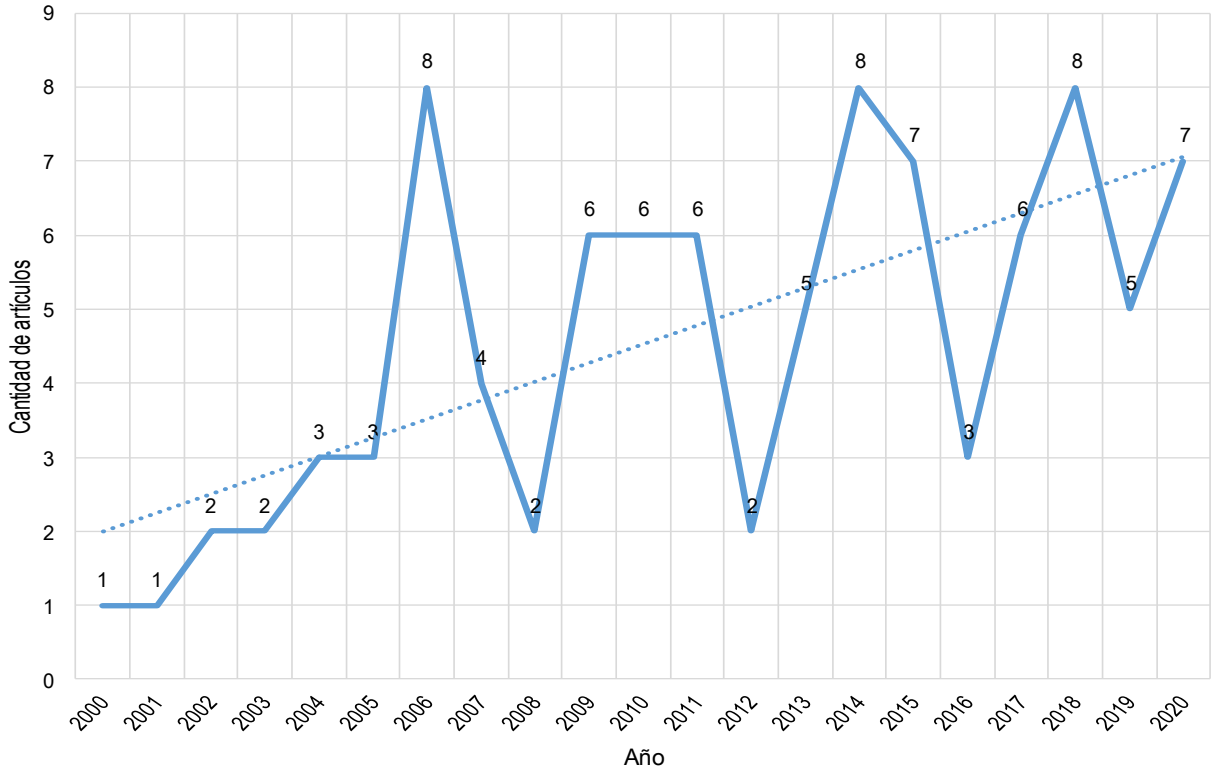
⇒ Revistas con mayor número de publicaciones sobre el tema.

⇒ Instituciones que han trabajado el tema de estudio.

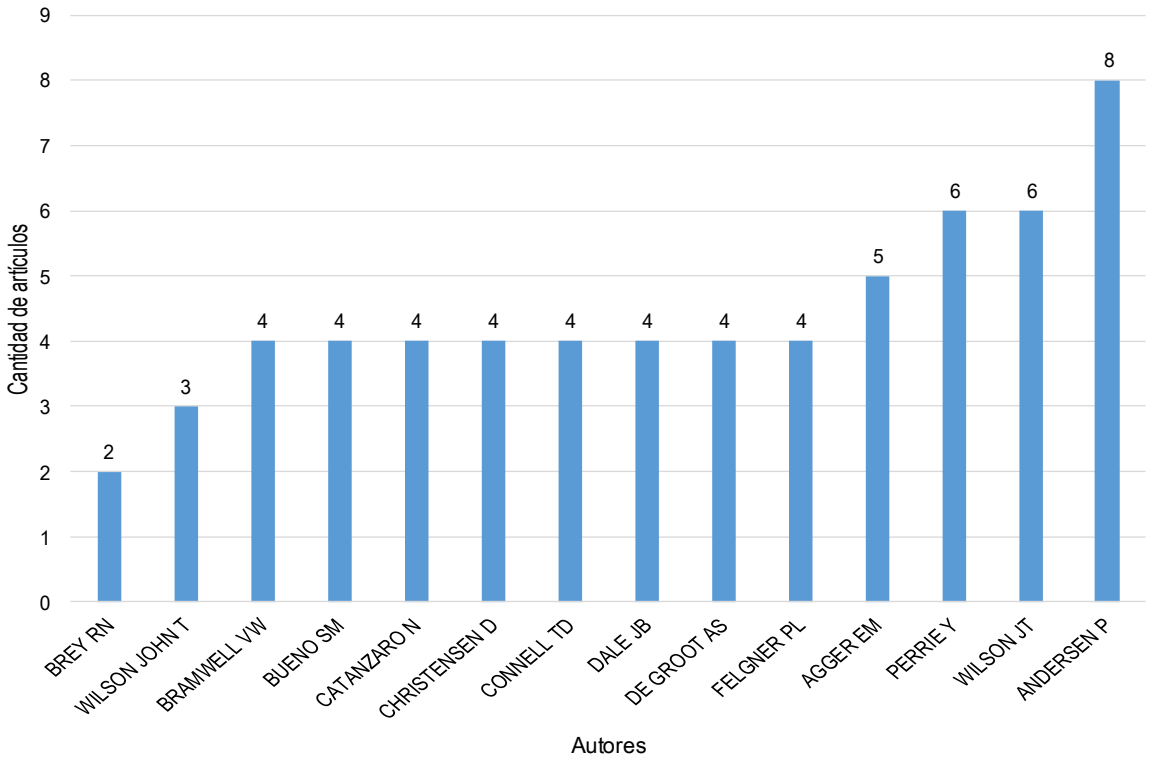
⇒ Países a la vanguardia sobre el tema.

EN ESTE NÚMERO

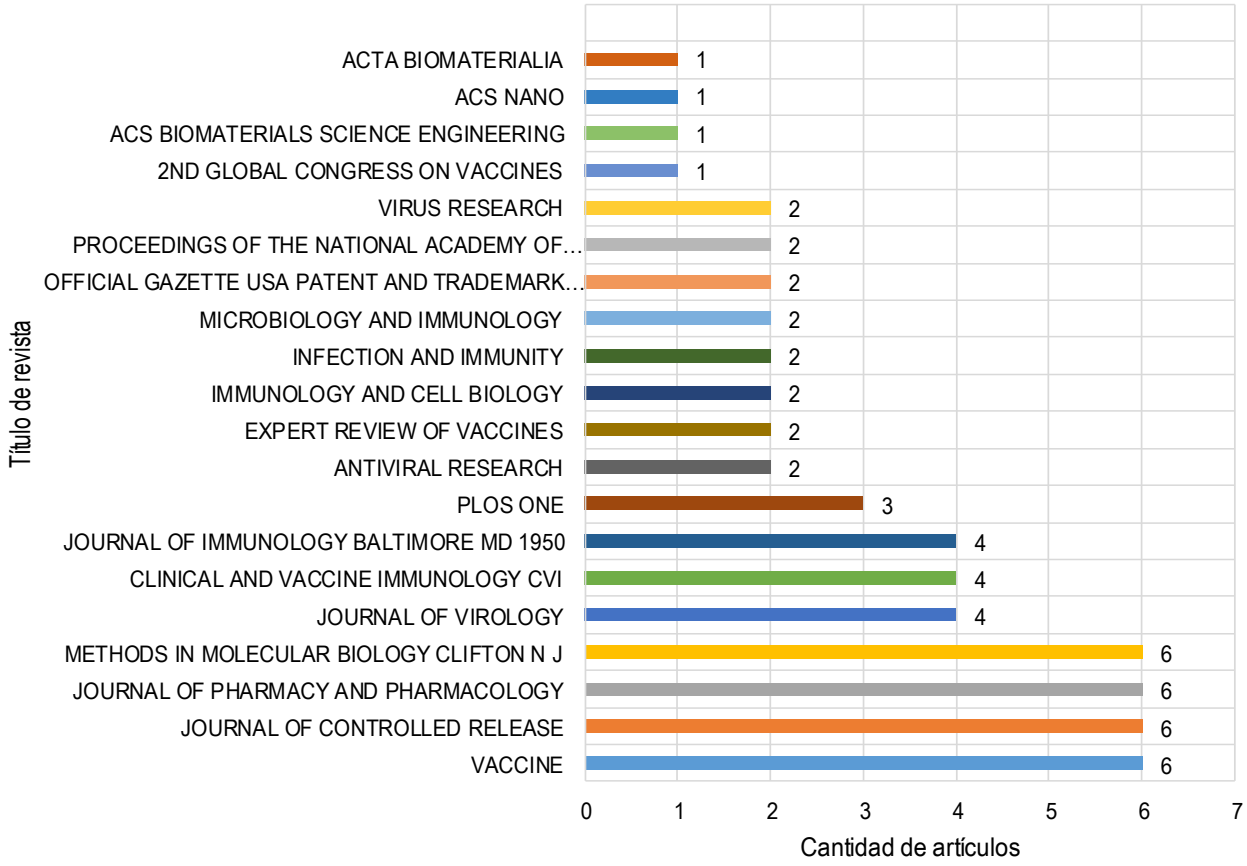
Productividad científica por año



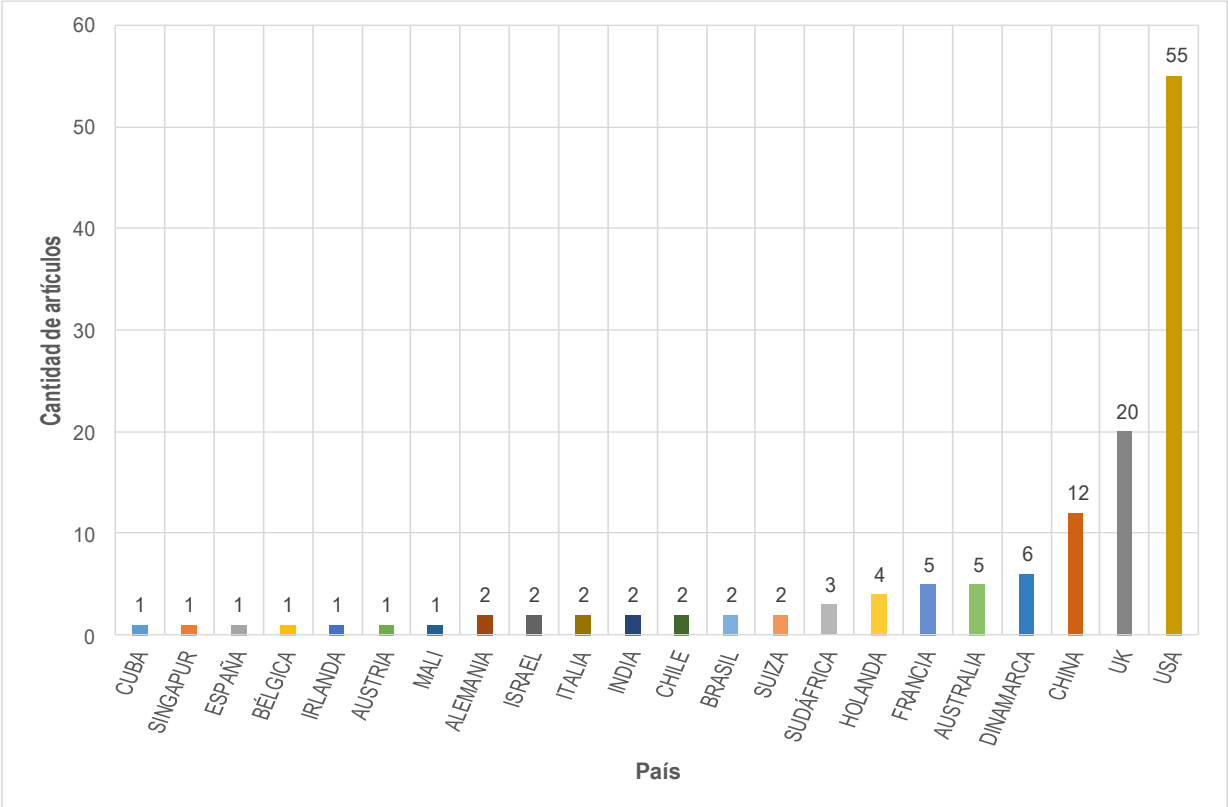
Autores con mayor productividad científica



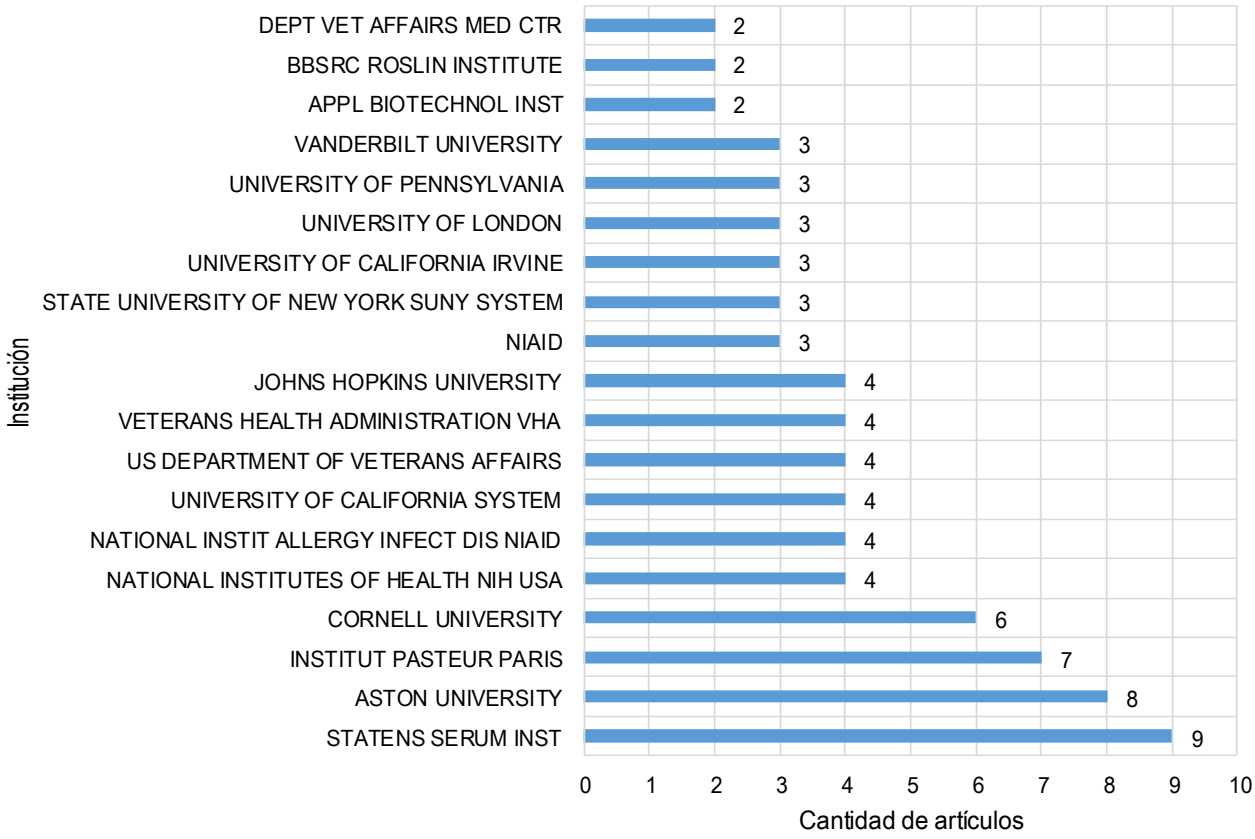
Revistas científicas que han publicado sobre el tema (2019-2020)



Producción científica por países registrada en Web of Science (1999-2020)



Instituciones que han trabajado el tema de estudio



Noticias en la Web

Merck's V114 pneumococcal vaccine candidate succeeds in two phase 3 trials

23 jun. Merck said that V114, its investigational 15-valent pneumococcal conjugate vaccine candidate, has met safety and immunogenicity goals in two initial phase 3 trials in adults.

Both the late-stage trials – PNEU-WAY and PNEU-FLU evaluated the safety, tolerability, and immunogenicity of V114, said Merck. The investigational vaccine is being developed for the prevention of pneumococcal disease in adults and also children.

The PNEU-WAY study was held in 302 adults with Human Immunodeficiency Virus (HIV). The trial showed that the vaccine candidate evoked an immune response to all 15 serotypes contained in it, which included serotypes 22F and 33F.

According to Merck, the PNEU-WAY trial, the participants were randomly grouped in a 1:1 ratio to receive V114 or the presently available 13-valent pneumococcal conjugate vaccine (PCV13) followed by PNEUMOVAX 23 (Pneumococcal Vaccine Polyvalent).

Merck's 15-valent pneumococcal conjugate vaccine candidate met its primary immunogenicity objective as measured by serotype-specific opsonophagocytic activity (OPA) Geometric Mean Titers (GMTs) and Immunoglobulin G (IgG) Geometric Mean Concentrations (GMCs) for all the serotypes contained in it at 30 days post-vaccination.

Furthermore, V114's safety profile was generally comparable with PCV13. On the other hand, data from the PNEU-FLU study held in

healthy adults aged 50 years and above showed that V114 can be concomitantly given with the quadrivalent influenza vaccine. In this trial, participants in the concomitant arm were given V114 and the quadrivalent influenza vaccine (QIV) on Day 1 and received placebo nearly 30 days later at Visit 2.

Participants in the non-concomitant group were given placebo and QIV on Day 1 and received V114 nearly 30 days later at Visit 2. The study met its two primary immunogenicity objectives.

Fuente: PHARMACEUTICAL BUSINESS REVIEW. Disponible en https://cutt.ly/ooN2JSC

Brasil prueba vacuna experimental contra COVID-19

23 jun. Brasil está realizando pruebas con una vacuna experimental contra el COVID-19, pero el ministro interino de Salud, Eduardo Pazuello, reconoció el martes que el gobierno no ha concretado un acuerdo para abastecerse del fármaco en caso de que funcione. En tanto, otros países ya se han asegurado de cientos de millones de dosis de una vacuna creada por la Universidad de Oxford.

La respuesta del país sudamericano a la pandemia del coronavirus ha sido fuertemente criticada desde marzo, cuando el presidente Jair Bolsonaro comenzó a desafiar las recomendaciones de distanciamiento social. Horas antes de que Pazuello se presentara ante el Congreso, un juez ordenó que Bolsonaro debía utilizar mascarilla siempre que salga a la vía pública en la capital, Brasilia.

Pazuello, un general del ejército con un largo historial en temas logísticos, habló de las gestiones de Brasil para adquirir una vacuna contra el COVID -19 o para obtener la tecnología necesaria para su fabricación. El regulador nacional de salud Anvisa aprobó este mes las pruebas clínicas en humanos para una posible vacuna.

El funcionario señaló que el gobierno

podría decidir sobre la adquisición de una posible vacuna hacia el final de la semana, pero que eso dependerá del jefe del gabinete.

Investigadores británicos comenzaron a realizar pruebas sobre la vacuna experimental el mes pasado, con el objetivo de inmunizar a más de 10.000 personas, incluyendo ancianos y niños. La vacuna creada en Oxford es una de cerca de una docena que se encuentran en las etapas iniciales de prueba en seres humanos.

Brasil, donde la epidemia continúa en aumento, y el Reino Unido son los únicos países donde se realizan pruebas de la vacuna. La nación sudamericana tiene más de un millón de casos confirmados de COVID-19 y más de 52.600 decesos.

Las pruebas clínicas comenzaron el lunes en Sao Paulo e iniciarán en Río de Janeiro el miércoles. La embajada británica en Brasil informó que se vacunará a 5.000 profesionales de salud.

"Trabajamos directamente con las tres (vacunas) más prometedoras", dijo Pazuello, refiriéndose a la que se desarrolla en Oxford, a una elaborada por la compañía estadounidense Moderna y otra experimental procedente de China, sin dar más detalles.

Vijay Rangarajan, el embajador británico en el país, dijo a The Associated Press que espera que Brasil "sea uno de los primeros países en recibir la vacuna" si funciona.

"Sin embargo, esto dependerá de cuándo firme el acuerdo el país", manifestó en un email. "Ya existe una capacidad de producción para la vacuna de 2.000 millones de dosis en todo el mundo. Pero gran parte de la producción global ya ha sido adquirida".

Estados Unidos anunció el 21 de mayo un acuerdo para adquirir al menos 300 millones de dosis de la vacuna de Oxford, y se comprometió a invertir hasta 1.200 millones de dólares con ese fin. El 13 de junio, la farmacéutica AstraZeneca accedió a suministrar hasta 400 millones de dosis de una vacuna experimental a países de la Unión Europea. También hay negociaciones con Rusia, Japón y otras naciones, señaló el director general de la compañía.

El embajador británico agregó que quiere "asegurar que los brasileños pueden beneficiarse de cualquier vacuna, rápidamente y sin ánimo de lucro".

Bolsonaro ha sido criticado por restarle importancia a la respuesta de su gobierno a la pandemia, comparando a la enfermedad con una "gripita".

Antes de los ensayos con vacunas, Bolsonaro promocionó repetidamente el uso de la cloroquina para tratar el COVID-19, la enfermedad causada por el coronavirus, pese a que expertos en salud descartaron su eficacia.

Estados Unidos anunció el 31 de mayo que donaría dos millones de dosis de hidroxicloroquina, un fármaco contra la malaria similar pero que está considerado menos tóxico, a la nación sudamericana.

Washington se comprometió además a donar 1.000 ventiladores. Se espera que los 200 primeros lleguen a finales de esta semana, explicó el embajador estadounidense, Todd Chapman, a reporteros en una videollamada el martes.

Brasil probará durante el mes de julio otra vacuna experimental desarrollada por la compañía china Sinovac Biotech, según el gobierno del estado de Sao Paulo. Sinovac tiene un acuerdo de producción con el Instituto Butantan del estado. Se prevé que el estudio cuente con la participación de unos 9.000 brasileños.

Fuente: Chron. Disponible en https://cutt.ly/aoMiy7e

House leader wants to break monopoly for pneumonia vaccines

23 jun. House leader wants to break monopoly for pneumonia vaccines.

The chairperson of the House Committee on Health on Tuesday cautioned against allowing a monopoly in the public procurement of pneumococcal vaccination for children in light of recent studies that the two available vaccines are equally effective.

Quezon Rep. Angelina Tan said breaking the monopoly may enable the Department of Health (DOH) to save on costs, citing a World Health Organization (WHO) position paper stating there is no evidence of a difference in the net impact on overall disease burden between the two pneumococcal

conjugate vaccines (PCVs), PCV10 and PCV13.

The DOH has sought the help of the Health Technology Assessment Council (HTAC) in reviewing the two vaccines in terms of cost-effectiveness and comparability, putting the procurement of pneumococcal vaccination on hold.

"Both vaccines exist. If the health assessment proves that both PCV10 and PCV13 have the same effects, then we need to go through a procurement process that's open and competitive so the government can save on costs," Tan said.

House Resolution 906, filed by Ako Padayon Party-list Rep. Adriano Ebcas, aims to secure and ensure a stable supply of available vaccines through the continued open, fair, and competitive bidding, preventing any "outbreak within an outbreak."

"An open, fair, competitive public procurement of NIP vaccines provide the Filipino people the broadest possible options for affordable, quality, and registered vaccines, allowing for potential significant savings to the government while at the same time promoting strong public governance," Ebcas said in his resolution.

The resolution also calls for the continued safe implementation of the mandated National Immunization Program for children despite the challenges posed by the coronavirus pandemic.

Tan said substantial potential savings can be gained by the DOH year-on-year by allowing the two similarly effective PCVs to compete for the bidding.

She noted that the savings can then be used to improve the country's vaccination program or even provide fiscal space for the government to effectively implement the Universal Health Care Law.

Health Undersecretary, Dr. Maria Rosario Vergeire said the HTAC review to open the tender for both vaccines may be beneficial in the allocation of the budget for other vaccines in the Expanded Program for Immunization (EPI).

"Kaya nga po kami po ay humingi na ng tulong mula sa HTAC (That's why we sought the help of HTAC because) we wanted to know if we were being cost-effective for spending this much for a specific vaccine," Vergeire said.

Fuente: PHILIPPINE NEWS AGENCY. Disponible en https://www.pna.gov.ph/articles/1106755

Sanofi Accelerates Its Timeline for Coronavirus Vaccine Development

23 jun. After lagging behind its competitors in starting clinical trials, the French drugmaker Sanofi has announced plans to speed a vaccine development timeline that could yield approval from regulatory authorities sometime next year, perhaps in the first half of 2021, the company announced on Tuesday.

The company and its partner in the endeavor, GlaxoSmithKline, originally projected that a vaccine would be available, at the earliest, in the latter half of next year.

Like other contenders in the race for a coronavirus vaccine, Sanofi is eager to push forward. Still, "such fast-tracking and intense scale of vaccine production is totally unprecedented," and the future unknown, said Padmini Pillai, an immunologist at M.I.T.

The Sanofi-GSK vaccine contains a laboratory-synthesized version of the coronavirus's "spike" protein, which decorates the surface of the virus and is crucial to its ability to enter host cells. This so-called recombinant vaccine is also formulated with one of GSK's proprietary adjuvants, compounds that can enhance the body's immune response to a foreign onslaught, in theory boosting the staying power of a given vaccine.

A combined Phase I/II clinical trial for the vaccine, originally scheduled for December 2020, will now begin in September. The goal is to have the recombinant vaccine fully licensed by June 2021.

In news briefings on Tuesday, both companies expressed confidence in their collaboration and its potential to deliver a successful vaccine. Sanofi's history with vaccine development runs deep;

its production lines are responsible for hundreds of millions of doses of the flu vaccine each year.

"As all eyes are on prevention of infectious disease through vaccines, this is a pointed moment in time where we are called upon to seek innovative ways to protect public health," Thomas Triomphe, executive vice president of Sanofi Pasteur, the company's vaccines global business unit, said in a statement.

Sanofi is also developing a separate set of vaccine candidates with Translate Bio, an American therapeutics company, on a slightly less expedited timeline. This second batch of recipes is based on mRNA technology, an approach being taken by several of Sanofi's competitors, including Moderna and a partnership between BioNTech, Pfizer and Fosun Pharma.

Such mRNA vaccines are new; to date, none have been cleared for use in humans. Still, they have been touted as a potential improvement on their predecessors, especially for their scalability and versatility, Dr. Pillai said. They are engineered to coax human cells into manufacturing proteins that resemble those made by the coronavirus, thus avoiding the need for the pathogen itself. The aim is to elicit a strong immune response that would protect the body from disease should the actual virus try to settle in.

Saad Omer, a vaccine researcher and director of the Yale Institute for Global Health, said that Sanofi, a company with notable "muscle memory of manufacturing and distributing vaccines at a large scale," was well poised to push forward innovative vaccine formulations, like those containing mRNA. But "that doesn't mean we shouldn't be cautious about projecting timelines," Dr. Omer added.

The Sanofi-Translate Bio mRNA vaccines are currently in preclinical testing. Sanofi expects Phase I trials to begin by the end of 2020, and hopes to seek approval with regulatory bodies like the U.S. Food and Drug Administration or the European Medicines Agency by the close of 2021. As a part of this push, the French company has announced that it will expand its collaboration with Translate Bio, striking a deal in which the American group will receive $425 million in upfront payments.

If a coronavirus vaccine concoction — made by Sanofi and its partners, or by one of their competitors — meets the mark sometime next year, it will be a record. Most vaccines take many years, if not decades, to develop. The mRNA formulation in particular would be the "first of its kind" if approved, said Asher Williams, a chemical engineer at Cornell University.

But there are plenty of hurdles. Researchers are wisely pursuing multiple types of vaccines, Dr. Omer said, since the various recipes, each employing different bits of the coronavirus, are likely to range in their efficacy. A multipronged approach is a good way for the global community to hedge its bets on curbing the spread of disease.

"I think there's reason to be cautiously optimistic," Dr. Omer said. "But we shouldn't get ahead of ourselves."

Fuente: The New York Times. Disponible en https://cutt.ly/woMa47G

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Bloquear una 'señal de interferencia' puede liberar el sistema inmunitario para combatir tumores

24 jun. Los investigadores de la Universidad de Yale, en Estados Unidos, han descubierto una "señal de interferencia" que bloquea un poderoso estimulante del sistema inmunitario llamado interleucina-18 (IL-18) para que no llegue a los tumores, incluso en los cánceres que son resistentes a los tratamientos de inmunoterapia convencionales, según informan en la revista 'Nature'.

El equipo de investigación creó una versión de IL-18 que no se pudo bloquear y redujo significativamente los tumores en ratones que son resistentes a la inmunoterapia actual.

La interleucina-18 es parte de un vasto arsenal del sistema inmune llamado citoquinas y tiene el papel específico de movilizar las células T y las células "asesinas naturales" para combatir las infecciones. Debido a esta actividad, las compañías farmacéuticas habían tratado previamente de usar IL-18 como tratamiento contra el cáncer. Sin embargo, el enfoque no mostró ningún beneficio en los ensayos clínicos.

"Esta fue una gran paradoja para nosotros porque IL-18 envía un mensaje inflamatorio increíblemente poderoso a las células inmunes 'correctas' que atacan los tumores --explica Aaron Ring, profesor asistente de inmunobiología y farmacología de Yale y autor principal de la investigación--. El hecho de que no hubo respuesta a la IL-18 natural en ensayos clínicos anteriores nos hizo pensar que los tumores estaban empleando contramedidas inmunológicas".

El equipo de Yale se propuso averiguar cómo los tumores apagaron el IL-18. Descubrieron que dentro de muchas formas de cáncer, hay altos niveles de una proteína llamada proteína de unión a la interleuquina-18 (IL-18BP), que actúa como "receptor señuelo", bloqueando la capacidad del IL-18 para unirse a su receptor en las células del sistema inmunológico y activar una respuesta inmunológica.

"Pensabamos que IL-18 era la vía correcta para participar, pero que IL-18BP estaba actuando como una barrera para su actividad --recuerda Ring--. Entonces nos preguntamos si podríamos hacer una versión sintética de IL-18 que pudiera superar este problema".

Utilizando un proceso llamado evolución dirigida, el equipo de Ring buscó en aproximadamente 300 millones de formas mutantes diferentes de IL-18 para encontrar variantes raras que solo unían el verdadero receptor de IL-18 y no el señuelo. "Acabamos de cambiar la frecuencia de IL-18 para eliminar la señal de interferencia", explica Ring.

Trabajando con el laboratorio del coautor Marcus Bosenberg, director interino del Centro de Inmuno-oncología de Yale y profesor de dermatología, patología e inmunobiología, el equipo administró la IL-18 modificada a ratones con una variedad de tipos de tumores, incluidos aquellos resistente a la inmunoterapia convencional.

Descubrieron que la IL-18 sintética redujo en gran medida el crecimiento de los tumores y fue capaz de erradicar por completo el cáncer en muchos de los ratones. Cuando observaron dentro de los tumores, el equipo descubrió que el medicamento IL-18 funcionaba para aumentar el número de una población importante de células T "parecidas al tallo" que mantienen respuestas antitumorales efectivas.

Las inmunoterapias contra el cáncer existentes han demostrado ser muy exitosas en atacar los llamados "tumores calientes" o aquellos caracterizados por la presencia de inflamación. Sin embargo, los tumores "fríos" o los que carecen de actividad del sistema inmune, han sido resistentes a las formas de inmunoterapia actualmente en uso.

"Debido a que la IL-18 puede actuar sobre las células del sistema inmunitario 'innato', como las células asesinas naturales, tiene el potencial de ser eficaz contra los 'tumores fríos' que se han vuelto resistentes a las inmunoterapias convencionales", dijo Bosenberg. "Esta es una necesidad mayor no satisfecha y una que la vía IL-18 está lista para abordar". Ring ha formado una compañía llamada Simcha Therapeutics y espera comenzar los ensayos clínicos del medicamento en pacientes con cáncer el próximo año.

Fuente: COPE. Disponible en https://cutt.ly/hoMkiAA

Luz UV-C mata el virus SARS-CoV-2 a los pocos segundos de exposición en un estudio de laboratorio

24 jun. Una tecnología de iluminación UV-C desarrollada por Signify (Eindhoven, Países Bajos) ha demostrado ser efectiva para inactivar el virus SARS-CoV-2 en estudios de investigación.

En las pruebas realizadas por Signify, junto con los Laboratorios Nacionales de Enfermedades Infecciosas Emergentes (NEIDL) de la Universidad de Boston (Boston, MA, EUA), el virus SARS-CoV-2 ya no se pudo detectar después de segundos de exposición a fuentes de luz UV-C. Durante su investigación, los científicos trataron el material inoculado con diferentes dosis de radiación UV-C proveniente de una fuente de luz Signify y evaluaron la capacidad de inactivación en diversas condiciones. El equipo aplicó una dosis de 5 mJ/cm2, con lo que se obtuvo una reducción del virus SARS-CoV-2 del 99% en seis segundos. Con base en los datos, se determinó que una dosis de 22mJ/cm2 resultará en una reducción del 99,9999% en 25 segundos.

"Estoy muy contento con la fructífera cooperación con la Universidad de Boston en la lucha contra el coronavirus. La Universidad de Boston ha validado la efectividad de nuestras fuentes de luz como medida preventiva para las empresas e instituciones, ya que buscan formas de proporcionar entornos libres de virus", dijo Eric Rondolat, director ejecutivo de Signify. "Dado el potencial de la tecnología para ayudar en la lucha contra el coronavirus, Signify no mantendrá la tecnología para su uso exclusivo, sino que la pondrá a disposición de otras compañías de iluminación. Para satisfacer la creciente necesidad de desinfección, aumentaremos nuestra capacidad de producción en los próximos meses".

"Los resultados de nuestras pruebas muestran que por encima de una dosis específica de radiación UV-C, los virus se inactivaron por completo: en cuestión de segundos ya no pudimos detectar ningún virus", dijo el Dr. Anthony Griffiths, profesor asociado de microbiología en la Facultad de Medicina de la Universidad de Boston. "Estamos muy entusiasmados con estos hallazgos y esperamos que esto acelere el desarrollo de productos que puedan ayudar a limitar la propagación de la COVID-19".

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

Trials for COVID-19 Vaccine Candidate Begin in South Africa

25 jun. Africa's first COVID-19 vaccine trial began on June 24 in South Africa. The trial started in Johannesburg, the commercial capital, and Pretoria, the national capital, in Gauteng province, and will gradually spread to other parts of the country. In Johannesburg, some participants are residents of Soweto township. The vaccine, developed by Oxford University's (UK) Jenner Institute, will inoculate two thousand South Africans.

It is appropriate that South Africa host the vaccine trials. It has by far the most developed medical infrastructure in Africa and a tradition of medical innovation. The Groote Schuur Hospital in Cape Town was the site of the world's first heart transplant, now a generation ago. It is winter in the southern hemisphere, the season in which influenza of various types are most prevalent.

Trials of the Jenner Institute's vaccine are taking place in Brazil, South Africa, and the United Kingdom; the other trials also appear to have begun on June 24. According to the WHO, there are 220 vaccine candidates in development. Thirteen are in clinical trials: five in China, three in the United States, two in the United Kingdom, including that developed by the Jenner Institute, and one each in Australia, Germany, and Russia. The Jenner vaccine is currently manufactured in the United States; production is expected to shift to the Untied Kingdom in the autumn.

South Africa is the African country that has been hardest hit by the virus, up to now. As of June 24, there were 111,796 cumulative cases—one-third of the continent's reported disease burden—and 2,205 people have died from the virus. About 57,000 have recovered, so there are about 53,000 active cases. South Africa has by far the most extensive testing regime of a major country in Africa, with 1.4 million tests conducted so far out of a population of 58 million. The WHO recently announced that all African states have the laboratory capacity to test for the virus, though others still lag far behind South Africa's testing ability. Nigeria, for comparison, has conducted just 122,155 tests out of a population of about 200 million, with 22,020 confirmed cases as of June 24. In the United States, 30 million tests have been conducted out of a population of 328 million, with about 2.9 million positive tests reported.

The government of President Cyril Ramaphosa has aggressively imposed various protocols to control the spread of the disease. Enforcement, however, has resulted in instances of police brutality which undercut popular support. In response, some of the restrictions have been lifted. South Africa's official statistics are credible. However, those of other African countries are less so and many observers estimate that cases are under counted. Hence, it is hard to know the true proportion of Africa's COVID-19 cases made up by South Africa. What is clear is that of the continent's largest states—Nigeria, Ethiopia, and the Democratic Republic of Congo—South Africa's efforts to control the virus have been the most extensive.

Fuente: COUNCIL on FOREING RELATIONS. Disponible en https://cutt.ly/mprsEZG

¿Ha perdido agresividad el SARS-CoV-2? Cuidado con las ilusiones víricas engañosas

26 jun. Uno de los pocos aspectos gratificantes de esta crisis está siendo encontrar interés y lenguaje científico en toda clase de ambientes, algunos inesperados. Cuando escuché hace un par de días a una camarera hablarle de su PCR a un cliente mientras le servía un café con porras, pensé que algo había cambiado en nuestra sociedad, quizá para siempre. Ojalá el conocimiento que estamos

difundiendo y adquiriendo a marchas forzadas en esta pandemia sedimente y se haga transferible a situaciones de normalidad. Esperemos que no resulte desechable, como esos millones de mascarillas que ahora hacen crecer los vertederos.

Las distintas etapas por las que está pasando esta crisis siguen despertando nuevas preguntas para los expertos, cuyas respuestas, después, la población comenta o discute con visible interés. Superamos hace semanas el momento de comprender la tasa reproductiva, la seroprevalencia o la diferencia entre una PCR que detecta la infección y un test inmunológico que detecta si hemos superado la COVID-19. La gran preocupación del momento actual es si el virus se ha vuelto menos virulento.

Los resultados rigurosos tardan en llegar

Lamentablemente, la ciencia tarda mucho más en responder que el horóscopo. Necesita tiempo porque lo hace con una necesidad de rigor a la que no estamos acostumbrados en estos tiempos en que la opinión intenta quitarle el sitio al conocimiento.

Los científicos aún no pueden dar una respuesta contundente sobre si el virus ha perdido virulencia o no, porque necesitan aplicar un elaborado método y tener certeza antes de hacer afirmaciones rotundas. Ese el motivo por el que los resultados rigurosos se hacen esperar. Y nadie debería enfadarse porque gracias a eso, por ejemplo, pueden ponernos anestesia cuando vamos al dentista.

Sin embargo, algo que sí pueden hacer desde ya los científicos es explicar cómo han sido las dinámicas de otros virus en situaciones equiparables.

Los datos del pasado nos enseñan que es cierto que los virus, después de llegar a un nuevo hospedador con furor, se van volviendo menos agresivos con el paso del tiempo. Por eso es esperable que vuelva a ocurrir en esta pandemia. Pero igualmente puede tardar en suceder, e incluso no ocurrir nunca.

Un detalle importante a tener en cuenta al hablar de virulencia es que, aunque solemos hablar de virus en singular, en realidad lo que nos infecta son cientos o miles de partículas virales (o viriones) de forma simultánea. Al infectarnos repiten incansablemente el mismo proceso: una o varias de ellas entran en una célula y producen cientos o miles de nuevas partículas virales. En otras palabras, una característica de los virus es su abundancia simultánea de copias. Son pequeños, pero muchos.

Así que, si el actual coronavirus se dispone a perder virulencia, es necesario que la pierdan los miles de millones de viriones que infectan a los millones de individuos de nuestra especie. Y claro, eso no ocurre de la noche a la mañana. El proceso no es sencillo: no se trata de que una determinada partícula viral decida moderar su actitud, como si fuese una persona que sienta la cabeza y se propone dejar de salir de juerga entre semana para casarse y tener hijos.

Errores aletatorios

Para que un virus pierda agresividad se tienen que ir acumulando mutaciones en el material genético (ARN) de los nuevos viriones que vayan surgiendo. Esas mutaciones son modificaciones moleculares que ocurren al azar en ese manual de instrucciones de cada partícula viral que es su ARN. Estos cambios pueden producir nuevos viriones que lleven un ARN que los haga menos agresivos. Aunque al ser aleatorias, las mutaciones pueden generar con la misma facilidad viriones más virulentos o no tener efecto.

Cada partícula viral de SARS-CoV-2 que ingresa en una de nuestras células da lugar a muchas nuevas copias. En ellas habrá una gran mayoría que serán exactas, y solo unas pocas mutantes. Es lo normal cuando se hacen muchas copias de material genético: la maquinaria suele ejecutar bien su trabajo, pero en ocasiones se aturulla y comete errores. Le sucedería a cualquiera si copiase manualmente un texto miles de veces.

Los menos virulentos tienen más opciones de sobrevivir

Es clave comprender que esas mutaciones azarosas no van haciendo a los nuevos viriones necesariamente menos agresivos, sino sencillamente distintos. Sin embargo, al cabo de cierto tiempo

es probable observar que van siendo más abundantes las partículas virales menos agresivas, que desplazan a las más virulentas. De la misma manera que los productos más atractivos van desplazando a los pasados de moda en los escaparates.

¿Por qué este reemplazo? ¿Cuál es el criterio que "pone de moda" los viriones menos agresivos y deja obsoletos a los más radicales? No hay escaparatista tomando decisiones, simplemente es un fenómeno evolutivo bien conocido, la selección natural. La versión que consiga propagarse mejor irá dejando más copias de sí misma.

Si unos novedosos viriones menos agresivos ingresan en un individuo y le dejan hacer vida normal con mayor comodidad que si le hubiesen invadido otros más virulentos, serán más fácilmente transmitidos por este portador. Porque un infectado por estos mutantes más "soportables" hará una vida más contagiosa que si estuviese postrado febril en cama o aislado en un pabellón de un hospital. El virus más moderado va imponiéndose en la población con una estrategia infalible: dejar a su portador ir a fiestas o congresos.

Así, poco a poco, se van volviendo más frecuentes las partículas virales menos agresivas, que se adaptan a la convivencia con su hábitat, esto es, nosotros. Cuando un virus llega por primera vez a una especie puede mostrar distintos grados de virulencia hacia su hospedador, pero si consigue perpetuarse es porque acaba mostrando una tendencia a alcanzar un equilibrio de convivencia. Si el virus se adapta a nuestra vida y nos dejar ir en metro tranquilamente y salir con nuestros amigos, será un mejor superviviente que si nos elimina.

El proceso es un ejemplo de selección natural en un pequeño mundo en el que las partículas virales son los individuos y nuestros cuerpos el ambiente al que se van adaptando.

Ilusiones víricas engañosas

¿Podemos decir entonces que el SARS-CoV-2 es ya menos agresivo? Responder una pregunta tan compleja de forma rigurosa no es posible sin antes analizar numerosos datos. Es cierto que vemos menos casos cada vez, que los pacientes que reciben los hospitales son más leves, que cada día que pasa las cifras son más alentadoras… Pero probablemente no haya perdido agresividad.

A veces, sentados en un tren a punto de partir, observamos el vagón de otro convoy en la vía adjunta. Al cabo de un rato, vemos cómo el vagón vecino se mueve y tardamos en poder discernir si es el otro tren o el nuestro el que ha arrancado. Se trata de una ilusión óptica. Probablemente, la menor severidad y número de casos de COVID-19 que observamos actualmente sea consecuencia del confinamiento pasado, del distanciamiento social actual y de la experiencia y capacidad de nuestro sistema de salud de atender casos más leves, entre otros esfuerzos.

Seguramente no es que el virus sea ahora menos agresivo, sino que estamos más atentos. Es nuestro tren el que se ha empezado a mover y no el de al lado. Pero tenemos que ser cautos y pacientes para evitar caer en ilusiones víricas.

Fuente: THE CONVERSATION. Disponible en https://cutt.ly/Aprx0Ck

What Factors Affect Antibody Production?

26 jun. In an effort to reduce the spread and severity of COVID-19, many researchers around the world have investigated what antibodies this disease produces, whether the antibodies have long-term protective effects and how this information can be used to promote the rapid development of a vaccine.

Unfortunately, immune responses differ between every single human being; therefore, it is crucial to understand what factors determine how antibodies are produced to fully evaluate the potential of future COVID-19 treatments.

Natural antibody production

Natural antibodies are considered to be the first line of defense that a newborn organism has against

potential pathogens. As compared to adaptive antibodies, which are specific to certain antigens, natural antibodies arise in germ-free conditions.

While natural antibodies exist in most vertebrates, the common natural antibodies produced in humans include immunoglobulin M (IgM), IgA, including its isotypes IgA1 and IgA2, as well as IgG and its isotypes including IgG1, IgG2, IgG3, and IgG4.

Natural antibodies are most commonly produced by the B1 lymphocytes and marginal zone B cells while humans are still in the fetal and post-fetal period. Some of the most notable properties of natural antibodies include polyreactivity, high avidity levels, autoreactivity, and moderate antimicrobial affinity.

Although natural antibodies constitute about 1% of the immunoglobulins present in the blood, with their numbers decreasing as humans age, they serve important roles in the prevention of various illnesses including autoimmune diseases, atherosclerotic plaque formation, inflammation, and even certain cancers.

Adaptive antibody production

If an antigen is presented to the innate immune system and the natural antibodies are unable to control the infection, the adaptive immune response is activated. There are two types of adaptive immune responses, which include the cell-mediated immune response and the humoral immune response.

Whereas the cell-mediated immune response is achieved by the action of T cells, the humoral immune response instead dependents upon the activity of both B cells and adaptive antibodies.

As compared to natural antibodies that are produced before exposure to foreign pathogens, adaptive antibodies are only produced after an antigen binds to the B-cell receptor (BCR) of B2 lymphocytes. The binding of the antigen to a B cell initiates the secretion of specific cytokines that cause rapid proliferation of the B cells.

As the B cells continue to reproduce, antibodies with the same antigen recognition pattern originally found on the BCR will be secreted. Note that the antigens that initiate the adaptive immune response can be produced following direct exposure to pathogens or following vaccine administration.

Factors influencing antibody production

To determine the efficiency of any novel vaccine, several different parameters are assessed, all of which are provided in Table 1. Each of these biomarker levels can be influenced by perinatal, intrinsic, extrinsic, environmental, behavioral, and nutritional factors, as well as by the properties of the vaccine itself.

Vaccine response markers

- Geometric mean antibody titers (GMTs)
- Seroconversion rates (SCRs)
- Seroprotection rates (SPRs)
- Functional antibodies
- Antibody avidity
- B cell activation
- T cell activation
- Lymphoproliferaiton
- Cytokine response
- Perinatal factors

The gestational age of an infant, particularly those who are born preterm, can play a significant role in determining the child's immune system to respond to vaccination. More specifically, the dendritic cells, macrophages, and T cells of infants are often underdeveloped, thereby reducing their ability to recognize pathogens.

As a result, preterm infants are often at a higher risk of infections, which can include vaccine-preventable infections. Some of the most notable differences in the antibody production capabilities that exist between preterm infants and term infants have been recorded following immunization for poliovirus type 3, 7-valent conjugated pneumococcal (PCV7), Hepatitis B and diphtheria vaccines.

Some other perinatal factors that can determine adequate antibody production include birth weight, whether the infant is breastfed or formula-fed, the presence of pre-existing maternal antibodies, whether the child's mother experienced any infections during her pregnancy and even maternal education status.

Intrinsic factors

Several intrinsic host factors can determine how antibodies are produced by the body after a vaccine is administrated. These factors include the patient's age, sex, genetics, and comorbidities. Infants, for example, not only have

lower antibody production levels but can also passively acquire maternal antibo-dies that can interfere with ideal vaccine responses.

For example, the vaccine for measles is the most widely studied regarding how the patient's age can affect their immune response. In terms of antibody production, research has found that infants who receive the measles vaccine before the age of 9 months have significantly lower levels of antibodies, as well as much lower antibody avidity as compared to patients who received the vaccine between the ages of 9 and 12 months.

The effect that a patient's sex can have on their vaccine response has also been widely studied. Females, for example, have been found to have higher antibody responses to dengue, Hepatitis A and B, inactivated polio vaccine (IPV), rabies and smallpox vaccines, whereas males appear to produce higher concentrations of antibodies after receiving vaccines against tetanus, diphtheria, pneumococcal polysaccharide vaccine (PPV23), PCV7 and meningococcal conjugate vaccine (MCV-C).

Environmental factors

The environment that a child is born and raised in has been shown to have significant effects on their antibody responses to several different types of vaccines. Children living in rural areas, for example, have been found to have higher antibody responses to the tetanus vaccines; however, this high response rate in rural children is reversed following both Hepatitis B and Mycobacterium Bovis bacillus Calmette-Guérin (BCG) vaccines.

In addition to the type of location where a child is living, the geographic location has also been shown to play a determining role in the antibody responses of children following immunization.

Children in developing countries, for example, have been shown to produce higher antibody levels following immunization for diphtheria, PCV7, and pertussis, whereas this same population often has lower antibody production levels following immunization to measles, Salmonella Typhi, oral cholera vaccine (OCV) and oral polio vaccine (OPV).

Behavioral factors

Smoking has been shown to reduce antibody production following the administration of the Hepatitis B vaccine. Comparatively, although antibody production levels are not affected by smoking after immunization for the human papillomavirus (HPV), antibody avidity can be affected.

Other behavioral factors that have been investigated for their ability to alter antibody production following vaccine administration include exercise, alcohol consumption both chronic and acute psychological stress, sleep duration nutritional status, as well as consumption of micronutrients like vitamins A, D, and E.

Vaccine factors

There are several different ways in which the vaccine itself can determine how the patient's immune system will respond following its administration.

Some examples of these factors include the vaccine schedule, site of administration, route, needle size, time of day, whether any other vaccines are administered concurrently, as well as whether the patient is also taking other drugs at the time of the immunization.

Fuente: NEWS MEDICAL. Disponible en https://cutt.ly/YprTtzY

Siniestra la forma en que COVID-19 infecta al cuerpo humano; con tentáculos

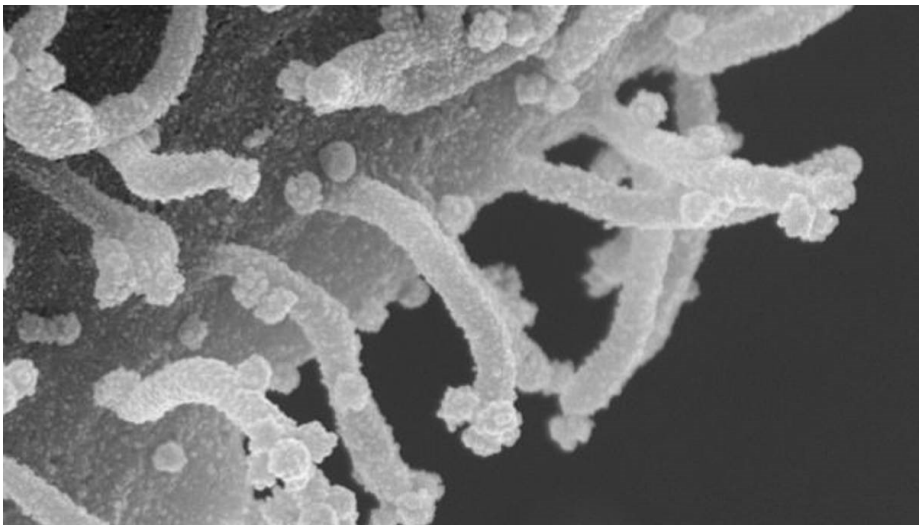
27 jun. El estudio estuvo a cargo de la Universidad de California y consistió en que los investigadores tomaron imágenes microscópicas del virus.

Científicos descubrieron cómo luce el COVID-19 a detalle y los resultados son sorprendentes, pues parece que del virus brotaran tentáculos para así infectar a todas las células del cuerpo humano.

El estudio estuvo a cargo de la Universidad de California y consistió en que los investigadores tomaron imágenes microscópicas del virus. Los resultados fueron descritos como "siniestros".

En las imágenes podemos ver cómo las células infectadas con la COVID-19 desarrollan espigas, en forma de tentáculos; conocidas como filopodia, que infectan a las células sanas.

Con los resultados obtenidos, los investigadores creen que la



COVID-19 se vale de los tentáculos para "navegar" hacia células sanas en donde inyecta su veneno.

Este resultado es insólito, pues hasta ahora se creía que el virus infectaba como la mayoría de los otros virus; es decir que se adhiere a las células sanas y así las infecta.

El hallazgo fue descrito como sorprendente pues así se podrá conocer a detalle al virus de la COVID-19 y hallar nuevas maneras de combatirlo.

Nevan Krogan, profesor de farmacología celular y molecular en la Universidad de California e investigador principal describió como siniestra la forma en que ataca la COVID-19, y es que es inusual que un virus forme tentáculos tan rápidamente para atacar a las células sanas.

Fuente: Grupo Fórmula. Disponible en https://cutt.ly/5prOrJ8

Brasil cierra acuerdo para producir vacuna contra covid-19 creada en Oxford

27 jun. Brasil anunció el sábado que llegó a un acuerdo para producir hasta 100 millones de dosis de la vacuna contra el coronavirus desarrollada por la universidad británica de Oxford, que el país sudamericano está ayudando a probar.

La vacuna, en la que Oxford trabaja junto al grupo farmacéutico AstraZeneca, figura entre las más prometedoras de las decenas que están experimentando investigadores de todo el mundo.

Bajo el acuerdo por 127 millones de dólares, el instituto de salud pública del gobierno brasileño, la Fundación Oswaldo Cruz (Fiocruz), adquirirá la tecnología y los suministros para producir la vacuna, que se está testeando en Gran Bretaña y Sudáfrica, así como en el propio Brasil.

El secretario ejecutivo del Ministerio de Salud, Elcio Franco, dijo que el acuerdo le daría a Brasil una ventaja si la vacuna resulta efectiva y segura.

"La transferencia de esta tecnología nos dará autonomía de producción", señaló en conferencia de prensa.

"Brasil está tratando de evitar situaciones como las que ocurrieron al comienzo de la pandemia, cuando la alta demanda nos impidió acceder a suministros y medicamentos. Y estamos eludiendo los márgenes de ganancia exorbitantes que se aplican durante la pandemia", agregó.

El acuerdo le da a Brasil el derecho a producir una cantidad inicial de 30,4 millones de dosis en diciembre y enero, mientras la vacuna aún está a prueba.

Los 127 millones de dólares estipulados en el acuerdo comprenden 30 millones por los derechos de la tecnología de la vacuna y el proceso de producción, dijeron las autoridades.

Si la vacuna pasa las pruebas clínicas, Brasil tendrá derecho a producir 70 millones de dosis adicionales, a un costo estimado de 2,30 dólares cada una.

"Incluso si las pruebas clínicas no tienen éxito, nuestra tecnología (de producción de vacunas) avanzará", dijo el funcionario del ministerio de salud Arnaldo Correia de Medeiros.

Esta semana los investigadores brasileños comenzaron a administrar la vacuna, conocida como ChAdOx1 nCoV-19, a voluntarios.

Brasil fue seleccionado porque es uno de los países donde el virus se está propagando más rápido.

El gigante sudamericano tiene el segundo mayor número de casos y muertes en todo el mundo después de Estados Unidos, con más de 1,2 millones de personas infectadas y 55.000 fallecidas, de acuerdo a los últimos datos oficiales.

Los expertos dicen que la realización de un número relativamente bajo de pruebas de detección supone que los números reales en este país de 212 millones de habitantes sean probablemente mucho más elevados.

Fuente: France24. Disponible en https://cutt.ly/CprDvLE

Vacuna contra el coronavirus y sus efectos secundarios: fiebre alta, mareos y desmayos

27 de jun. La vacuna de la estadounidense Moderna Therapeutics ya está en los cuerpos de los humanos después de los ensayos que se efectuaron con cientos de voluntarios con el fin de combatir el coronavirus, por lo que dieron a conocer los primeros resultados de esas personas, que tuvieron como efecto secundarios los desmayos y la fiebre alta, entre los más destacados.

La empresa que tiene su sede en Cambridge (Massachusetts) ha desarrollado este proyecto dentro de los proyectos lanzados por el Centro de Investigación de Vacunas de Estados Unidos.

Fiebre y desmayos

El diario médico STAT se basa

en los datos recogidos de lo expresado por uno de los voluntarios. Ian Haydon aseguró que tras la vacuna tuvo fiebre llegando a los 39º5 grados doce horas después de la segunda dosis. Esta persona, que tiene 29 años, tuvo que ir a urgencias y al llegar a su casa se desplomó desmayado.

Exposición mediática

"Entiendo que compartir mi historia va a ser aterrador para algunas personas. Espero que no genere ningún tipo de antagonismo hacia las vacunas en general o incluso hacia esta vacuna", comentó en

CNN y que esta exposición tenía como fin "contrarrestar la desesperación que algunas personas sienten por lanzar una vacuna al mercado, independientemente de las consecuencias".

Pedido

"Hay que encontrar una dosis que haga que el cuerpo produzca anticuerpos, pero que no provoque demasiados efectos secundarios", terminó expliacando este ciudadano de Seattle.

Vacuna en Rusia

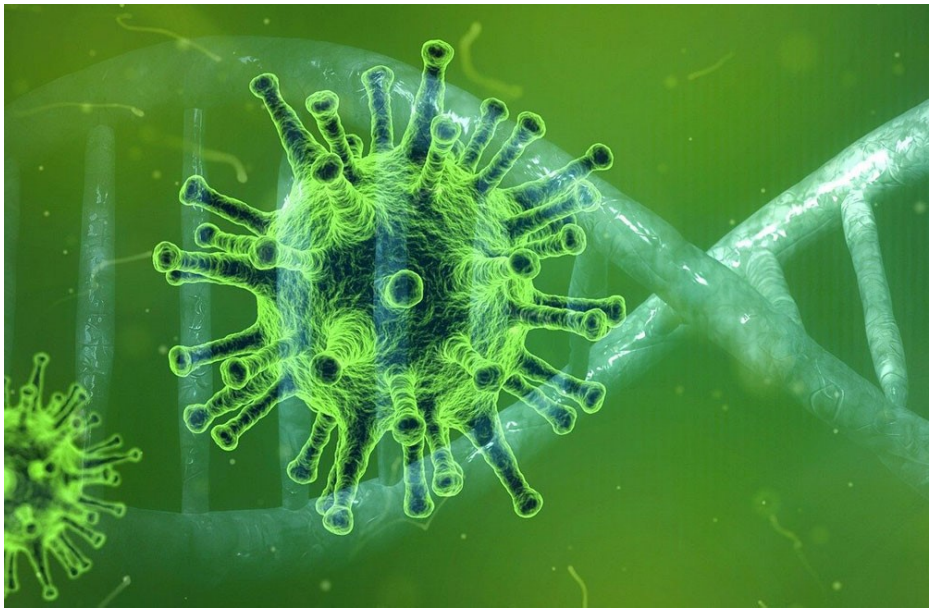
Mientras, en Europa fue Rusia la que ya lanzó tambiñen una prueba con una vacuna experimental. La Universidad de Séchenov (Moscú) publicó el pasado 23 de junio su informe de las pruebas que están practicando para dar una solución a los contagiados por el coronavirus.

Dolores de cabeza y fiebre

Las dosis de la vacuna de prueba fueron introducidas en los cuerpos de 20 voluntarios y parte de los voluntarios tuvieron pequeños dolores de cabeza y fiebre alta, aunque esos síntomas dejaron de tener efectos tras las 24 horas posteriores.

Fuente: MARCA. Disponible en https://cutt.ly/rpp5XWA

Uno de los talones de Aquiles del SARS-CoV-2



28 jun. En los meses de febrero y abril, en España, justo en pleno ascenso de la curva de contagiados y fallecidos por COVID-19, los doctores Alejandro J. Bermejo Valdés (Médico Especialista en Bioquímica, de origen cubano) y José M. Cervera Grau (Médico Especialista en Oncología, español) comenzamos una investigación a distancia, en confinamiento, con reuniones online y sin descanso. España estaba viviendo uno de los momentos más difíciles de su historia.

Ambos, buscábamos la existencia de algún “talón de Aquiles” en el SARS-CoV-2, el virus que ocasiona la enfermedad COVID-19. Era necesario frenar de manera inmediata la enorme cantidad de afectados por esta pandemia. No era el momento de sentarse a esperar por una vacuna.

Proteína S

Hasta ese entonces, se sabía que el SARS-CoV-2 utilizaba su proteína S como “llave” para entrar a la célula humana, y usaba de “cerrojo” el receptor ACE2 de estas células; aunque también se había descrito una posibilidad de entrada del virus mediada por el receptor CD 147, “otro posible cerrojo para la llave S”.

El SARS-CoV-2 era totalmente nuevo y desconocido, pero tenía un hermano cercano que había ocasionado años atrás incidentes similares, el SARS-CoV, un virus de referencia que les permitió hacer la mayor aproximación posible para dilucidar la estructura y funcionamiento moleculares del SARS-CoV-2.

Sin un laboratorio, comenzamos a estudiar al hermano con las únicas herramientas disponibles en el confinamiento: el razonamiento lógico, el método científico y un ordenador. La Bioquímica Computacional fue una buena herramienta en tiempos de confinamiento.

Un nuevo mecanismo de infección

Así, nos percatamos de la posibilidad de existencia de un nuevo mecanismo de infección del nuevo coronavirus con un “talón de Aquiles”. El hermano del nuevo coronavirus puede utilizar otra llave para infectar a la célula, la proteína N, que abre la puerta utilizando el cerrojo CD 147 pero,

esta vez, necesitaba de un ayudante: la proteína ciclofilina-A.

El parecido genético de ambos coronavirus hacía pensar que esto también podría ocurrir en el SARS-CoV-2, sin embargo, no era suficiente un parecido genético para plantear la hipótesis.

Entonces, comparamos las secuencias de aminoácidos de las porciones de proteínas N de ambos coronavirus implicadas en este tipo de infección, lo que reveló un parecido sorprendente, mayor al 95%. Pero, tampoco creímos que esto era suficiente porque la estructura tridimensional de la proteína (que determina su función) podrían ser diferentes, por lo que comparamos las estructuras tridimensionales de ambas proteínas N.

Solapamiento

El solapamiento fue igualmente sorprendente, ambas proteínas eran equivalentes en su aspecto espacial. Por tanto, si la proteína N del SARS-CoV podía infectar usando el receptor CD 147-ciclofilina-A, y esta proteína en secuencia y aspecto químico-espacial es equivalente a la proteína N del SARS-CoV-2, entonces este nuevo coronavirus puede infectar utilizando el receptor CD 147-ciclofilina-A (Se debe recordar que el CD 147 ha sido descrito como posible receptor para el SARS-CoV-2 pero utilizando como "llave" la proteína S.). La importancia del nuevo mecanismo propuesto radica en la inhibición de la ciclofilina-A unida a la proteína N del SARS-CoV-2. Así, la proteína N no podría facilitar la infección y además es posible que sus funciones intracelulares vinculadas a la evasión de la respuesta inmune del humano se vean comprometidas.

Con este nuevo mecanismo se tenía directamente un "talón de Aquiles" en el SARS-CoV-2, porque en el mercado farmacológico se dispone de un inhibidor de ciclofilina-A, hablamos de la ciclosporina-A. Este medicamento puede usarse inmediatamente en ensayos en humanos pues ha pasado todas las fases preclínicas necesarias y se comercializa internacionalmente.

La publicación inicialmente fue rechazada en The Lancet, lo que produjo un atraso en dar a conocer estos resultados en abril. Actualmente está publicada en la revista Annals of Case Reports y trabajamos junto a otros expertos en un proyecto para determinar de manera específica los sitios de interacción de la ciclofilina-A con la proteína N del SARS-CoV-2 y otros aspectos moleculares de interés científico.

Fuente: DIARIO SANITARIO. Disponible en https://cutt.ly/8paim0r

Covid-19: China aprueba 'uso interno' de una vacuna en su Ejército

29 jun. China aprobó hoy el uso interno en el Ejército de la nueva vacuna de coronavirus desarrollada por el Instituto Científico Militar y la compañía biofarmacéutica china CanSino Biologics, anunció hoy la empresa.

La compañía, con sede en la ciudad nororiental de Tianjin, indicó que su nueva vacuna recombinante de coronavirus (vector de adenovirus Ad5-nCoV) fue aprobada por el Ejército el pasado 25 de junio para "uso por los militares" en el marco de las "medicinas para necesidades especiales", según los medios locales.

La empresa informó de que los ensayos clínicos de Fase I y Fase de II de la vacuna se llevaron a cabo en China y que la fase II se completó el pasado 11 de junio.

Además, señaló que las pruebas confirmaron la "buena seguridad de la vacuna" así como su "alta inmunidad" y un adecuado nivel de respuesta inmune celular.

"Los resultados continuos de las pruebas muestran que la vacuna Ad5-nCoV tiene el potencial de prevenir enfermedades causadas por el SARS-CoV-2", aseguró CanSino Biologics, citada por el portal de noticias Finance Sina.

El uso de la vacuna ha sido aprobado únicamente para su "uso interno en el Ejército" y su alcance "no puede ampliarse" sin la aprobación del departamento de Apoyo Logístico de la Comisión Militar Central.

Hace cinco días la Academia de Ciencias Militares dijo que los científicos chinos habían "logrado un gran avance en el estudio de los nuevos anticuerpos contra el coronavirus".

Un equipo dirigido por Chen Wei, investigador de la Academia, descubrió el primer anticuerpo monoclonal neutralizante altamente eficiente y los resultados de ese estudio fueron publicados por la revista "Science" el pasado 22 de junio.

La vacuna recombinante de vector de adenovirus desarrollada por el equipo de Chen había sido la primera del mundo en entrar en la fase II de ensayos clínicos, según el portal de noticias privado Caixin.

Sin embargo, todavía no se han publicado los resultados completos de los ensayos de la fase II.

CanSino Biologics desarrolló junto a la Academia Militar de Ciencias china una vacuna contra el virus del Ébola que obtuvo una licencia provisional en 2017.

Sin embargo, al prácticamente concluir la epidemia del ébola, la vacuna no alcanzó la fase III de ensayos clínicos y permaneció como reserva nacional de emergencia.

La compañía fue creada en 2009 en Tianjin y se centra principalmente en el desarrollo y producción de vacunas.

En marzo del pasado año se convirtió en la primera compañía de vacunas de la China continental en cotizar en la bolsa de Hong Kong.

El 24 de junio la farmacéutica estatal china Sinopharm anunció que comenzaba la fase III de las pruebas clínicas en Emiratos Árabes Unidos de una posible vacuna, desarrollada conjuntamente con el Instituto de Productos Biológicos y Virología de Wuhan y la Academia China de Ciencias.

"...Los resultados continuos de las pruebas muestran que la vacuna Ad5-nCoV tiene el potencial de prevenir enfermedades causadas por el SARS-CoV-2."

Habitualmente, el período para que una vacuna pueda estar disponible para su uso a nivel masivo es de al menos entre 12 y 18 meses, según la Organización Mundial de la Salud (OMS), aunque China ha acelerado los procesos debido a la emergencia sanitaria mundial y ha permitido que se lleven a cabo al mismo tiempo algunos estudios en la primera y segunda fase.

Fuente: REDACCIÓN EL TIEMPO. Disponible en https://cutt.ly/HpaE8BB

UAQ presenta avances de vacuna contra la Covid-19

29 jun. La rectora de la Universidad Autónoma de Querétaro (UAQ), Teresa García Gasca, presentó los avances del desarrollo de una vacuna en contra del Covid-19 de péptidos quiméricos, que se realiza de manera multidisciplinaria en esta Institución, y misma que requiere de 49 millones de dólares para impulsarla en su totalidad.

Lo anterior durante la presentación virtual de desarrollos mexicanos de vacunas participantes en la convocatoria de la Coalición para las Innovaciones de Preparación para Epidemias (CEPI).

En dicha plática, la Rectora estableció la necesidad de conseguir 49 millones de dólares para llevar a cabo esta iniciativa universitaria en su totalidad conocida como "QUIVAX17.4: una quimera recombinante multiepitópica como una vacuna contra el Covid 2019". Aseguró que actualmente se encuentran en la etapa de preproducción de la proteína recombinante para iniciar la etapa preclínica en las próximas semanas.

En este sentido, resaltó la colaboración de otras instituciones como la Universidad Nacional Autónoma de México, el Instituto Politécnico Nacional, el Instituto Nacional de Ciencias Médicas y Nutrición "Salvador Zubirán" y la empresa Alvartis Pharma.

"Estos proyectos nos dan esperanza sobre todo porque sabemos que podemos vincularnos y que podemos trabajar en conjunto; tenemos que apostarle a la cuádruple hélice, a este trabajo colaborativo y a las alianzas que podemos formar", señaló.

En su presentación, agregó que identificaron y diseñaron seis péptidos del RBD-S, se generaron los péptidos sintéticos para hacer pruebas de reconocimiento, se unieron las secuencias nucleotídicas para formar un

gen quimérico y con lo que se produce la proteína quimérica recombinante.

Por otro lado, reconoció la labor que por años ha hecho Juan Joel Mosqueda Gualito, de la Facultad de Ciencias Naturales de la Universidad, quien ha trabajado en este campo y en cuya plataforma se desarrolla la vacuna de forma multidisciplinaria para combatir la pandemia que azota a todo el mundo. Asimismo, destacó la colaboración de más de 100 voluntarios y los donativos de la iniciativa privada para trabajar en este proceso.

Por su parte, el canciller Marcelo Ebrard Casaubón, expresó que esta sesión resultó fundamental puesto que las prioridades son equipar, por un lado, al país en materia sanitaria frente a la pandemia y promover que México participe adecuadamente en la búsqueda de una posible vacuna. Asimismo, dijo que independientemente de si resultan beneficiadas con recursos del CEPI, el gobierno federal apoyará cada uno de estos proyectos.

“Estamos involucrados en una red para que en el exterior presentemos los cuatro protocolos que México, hoy, tiene más avanzados para poder alcanzar el desarrollo de una vacuna en nuestro país; consideramos que eso es estratégico y fundamental, el otro camino es esperar que alguien más lo haga y que por el peso relativo de México tratemos de conseguir los desarrollos de otros países”, apuntó el secretario.

Son cuatro las iniciativas que México presentó al CEPI, incluido el de la Máxima Casa de Estudios de Querétaro, y en donde se involucran: la empresa Avimex; la Universidad Nacional Autónoma de México; y uno en que colaboran la Universidad Autónoma de Baja California y el Instituto Tecnológico de Estudios Superiores de Monterrey.

Fuente: Diario de Querétaro. Disponible en https://cutt.ly/7psapcl

Cómo la regulación de un solo gen por el virus de la COVID-19 puede resultar en una tormenta de citoquinas

30 jun. El virus del SARS-CoV-2 tiene inicialmente una capacidad limitada para invadir, atacando sólo un objetivo genético intracelular, los receptores de hidrocarburos arilos (AhR). Sin embargo, provoca síntomas clínicos muy diversos, lo que sugiere la existencia de múltiples mecanismos patógenos. En un artículo publicado en 'Restorative Neurology and Neuroscience', investigadores describen cómo la activación excesiva de los AhR a través de la vía de señalización IDO1-kynurenine-AhR, utilizada por muchos patógenos para establecer la infección, da lugar al "síndrome de activación sistémica de los AhR" (SAAS), también conocido como tormenta de citoquinas.

Los autores también plantean la hipótesis de que las terapias dirigidas a la regulación a la baja de los AhR y los genes IDO1 deberían disminuir la gravedad de la infección.

El SAAS es la causa de la inflamación, la tromboembolia y la fibrosis que puede conducir a una enfermedad grave y a la muerte por COVID-19. Cuando la infección por el virus persiste, activa el IDO1 mediante la liberación masiva de citoquinas. Esto a su vez perpetúa la ya extensa activación viral de los AhR, y los mecanismos de control autolimitados de la respuesta inmunológica del huésped pueden descarrilar, desencadenando la tormenta de citoquinas que subyace a los síntomas más graves de COVID-19.

"El virus del SARS-CoV-2 es un ejemplo vivo de la simplicidad viral complicada por la extrema complejidad del objetivo. La activación directa de los AhR por los CoV puede dar lugar a diversos conjuntos de cuadros de enfermedades fenotípicas, según el tiempo transcurrido después de la infección, el estado general de salud, el equilibrio hormonal, la edad, el sexo, las comorbilidades, pero también la dieta y los factores ambientales que modulan los AhR", explica el autor principal,

Waldemar A. Turski, del Departamento de Farmacología Experimental y Clínica de la Universidad Médica de Lublin (Polonia).

Los autores demuestran que los coronavirus son virus perfectos que no dejan nada al azar y muestran lo difícil que es detenerlos después de una invasión celular. Describen cuántas de las características y síntomas de COVID-19 pueden depender de la activación de los AhR, incluyendo tromboembolismo, fibrosis, lesiones en múltiples órganos y daño cerebral. También exploran cómo los factores ambientales, como el polvo urbano y los humos de diesel, pueden activar los AhR y hacer a los humanos más propensos a los patógenos, incluyendo el CoV. Sin embargo, el ejercicio físico juega un papel positivo en la función de IDO1 y reduce la regulación de los AhRs.

Los investigadores tienen la hipótesis de que cuando los AhRs permanecen activados y los síntomas clínicos son leves, la eliminación de los factores que se sabe que aumentan la activación de AhR o la implementación de factores que se sabe que suprimen la activación de AhR debería disminuir la gravedad de la infección. Cuando la enfermedad está completamente establecida y los síntomas son severos, se cree que el IDO1 está continuamente activado además de la activación por el CdV de los AhRs.

Fuente: Infosalus. Disponible en https://cutt.ly/GpsfjZO

Laboratorio de EE.UU. reporta buen resultado de vacuna contra COVID-19

30 jun. Las pruebas, en fase uno, desencadenaron una respuesta del sistema inmune en el 94% de las personas a las que se les suministró el medicamento.

La firma estadounidense de biotecnología Inovio informó este martes de resultados preliminares alentadores de las pruebas de una vacuna experimental contra el coronavirus.

Administrada a 40 voluntarios, desencadenó una respuesta del sistema inmune en el 94% de los que completaron el ensayo clínico de fase uno, lo cual significa que recibieron dos inyecciones, con cuatro semanas de diferencia.

La vacuna de Inovio, llamada INO -4800, está diseñada para inyectar ADN con el objetivo de activar una respuesta específica del sistema inmunológico contra el virus SARS-CoV-2.

El medicamento se inyecta en forma subcutánea, luego se activa con un dispositivo que se parece a un cepillo de dientes, con el cual se administra un impulso eléctrico durante una fracción de segundo, permitiendo que el ADN penetre en las células del cuerpo y cumpla con el objetivo.

Inovio, que está financiada por el Departamento de Defensa de EE.UU. y la ONG CEPI, también

aseguró que fue incluida en el plan del presidente Donald Trump para producir cientos de millones de dosis de la vacuna en enero como parte de la "Operación Warp Speed".

Estados Unidos registra más de 125.000 muertos y casi 2,6 millones de casos de coronavirus, el mayor número de casos en el mundo.

Un total de 23 proyectos de vacunas contra la Covid-19 han lanzado ensayos clínicos en humanos, según el London School of Hygiene & Tropical Medicine, y varios han pasado a la fase dos o tres, lo que significa que se están inyectando en miles o incluso decenas de miles de voluntarios.

Una vacuna creada por la firma estadounidense de biotecnología Moderna y otra de la Universidad de Oxford en colaboración con la firma británico-sueca AstraZeneca están entre las que transitan las etapas más avanzadas de desarrollo, al igual que algunos proyectos chinos. Estos incluyen uno de la compañía CanSinoBIO, que recibió permiso para administrar la vacuna a los soldados chinos.

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

Piden en China coordinaciones con OMS para pesquisa sobre SARS-CoV-2

30 jun. El equipo de la OMS que realizará otra pesquisa en China sobre el origen del SARS-CoV-2, debe comunicarse con científicos locales y escuchar su opinión al respecto, dijo hoy un alto funcionario.

A juicio de Zeng Guang, epidemiólogo jefe del Centro nacional de Prevención y Control de Enfermedades, es necesario informar sobre los preparativos y cómo se desarrollará la indagatoria para garantizar la investigación científica de la fuente del virus.

'No es un trabajo fácil, y debe prepararse bien, discutir los métodos técnicos para investigar e identificar la fuente, debe hacerse sobre la base de las negociaciones e involucrar a múltiples países', precisó.

En ese contexto, Zeng llamó a la OMS a recolectar toda la evidencia global sobre el patógeno, luego ordenarla según evolucionó el microorganismo y posteriormente desplegar equipos en todas las naciones implicadas para ahondar los estudios.

'No importa por cuál país comience el trabajo, mientras incluya a todos los involucrados y se realice de manera justa', concluyó en declaraciones al diario Global Times.

El director general de la OMS, Tedros Adhanom Ghebreyesus, anunció ayer el envío de expertos a China la semana próxima en el marco de la investigación sobre el origen del coronavirus, causante de la Covid-19. 'Conocer el origen del virus es muy muy importante, para preparar lo que esperamos que nos lleve a entender cómo empezó el virus', dijo en una conferencia de prensa virtual.

Según amplió, se puede combatir mejor al SARS-CoV-2 si se conoce todo acerca de él, pues 'estamos lejos de que termine' la pandemia, responsable de más de 500 mil muertes y 10 millones de contagios en todo el planeta.

En febrero pasado una misión de la OMS estuvo en China y recorrió centros asistenciales de Beijing, Wuhan y de las provincias de Guangdong, Sichuan para supervisar acciones de enfrentamiento a la epidemia.

El propósito de la misión internacional fue ofrecer sugerencias para nuevas etapas en la prevención y control del brote aquí y en otras naciones del planeta.

También enfocó el trabajo en identificar al animal exacto que desarrolló el virus, pues consideran que esa información ayudaría a evitar en un futuro más pandemias como la actual y también a entender su propagación masiva en Wuhan, por donde primero se reportó el SARS-CoV-2 a finales de 2019.

Fuente: Prensa Latina. Disponible en https://cutt.ly/npDsOb6

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Estrategia de búqueda: *Vaccine in the title or abstract AND 20200616:20200622 as the publication date*

48 records

1.201811048866NANOVACCINE AGAINST SALMONELLA TYPHI
IN - 26.06.2020
Clasificación Internacional A61K 9/51 Nº de solicitud 201811048866 Solicitante G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANTNAGAR Inventor/a YASPAL SINGH
The present invention deals with the development of novel vaccine against Salmonella Typhiwhich causes Typhoid fever in human being and results into millions of deaths. The presentvaccine is comprised of total outer membrane proteins adjuvanted with Calcium phosphatenanoparticles. Size of Calcium phosphate nanoparticles-Omp complex was determined byTransmission electron microscopy and DLS. The size of these particles ranged from 20-50 nlmand by analysis of Zeta potential these particles were found to be stable. Vaccine was tested inSwiss albino mice for its immune-potential. Vaccine produced a strong humoral and cellmediated immune response. Vaccine also provided protective immunity as bacterial count intarget organ was significantly reduced. Vaccine was tested for toxicity by studying biochemicaland hematological parameter and it did not caused any toxicity to vital organs like liver orkidney.

2.3669891IMPFSTOFFADJUVANS MIT LIPOPEPTIDINSERIERTEM LIPOSOM ALS WIRKSTOFF UND VERWENDUNG DAVON
EP - 24.06.2020
Clasificación Internacional A61K 39/39 Nº de solicitud 18846714 Solicitante CHA VACCINE RES INSTITUTE CO LTD Inventor/a YUM JUNG SUN
The present invention relates to a recombinant herpes zoster vaccine comprising liposome and lipopeptide and a method for preparing the same. More particularly, a vaccine composition according to the present invention, prepared using Lipo-Pam, which is a composite adjuvant comprising a liposome and various kinds of lipopeptides, and a varicella-zoster virus gE antigen, a Japanese encephalitis virus gE antigen, or a seasonal inactivated influenza virus antigen, highly induces a cell-mediated immune response as well as a humoral immune response so that the composition of the present invention can be commercially useful.

3.20200197501RABBIT COCCIDIOSIS VACCINE AND APPLICATION THEREOF
US - 25.06.2020
Clasificación Internacional A61K 39/012 Nº de solicitud 16488034 Solicitante Foshan Standard Bio-Tech Co., Ltd. Inventor/a Zhijan TAN
The present invention discloses a rabbit coccidiosis vaccine and application thereof, the vaccine comprises 100 to 800 *Eimeria media*/dose, 200 to 1600 *Eimeria magna*/dose, and 100 to 800 *Eimeria intestinalis*/dose. The composition of the vaccine possesses the characteristics as scientific reasonable, low cost, no drug residue or drug resistance or environmental pollution would occur, good immunogenicity and safe to use. After oral immunization in rabbits, it may effectively resist the infections of 1×10^5 *Eimeria media*, 5×10^4 *Eimeria magna* and 3×10^3 *Eimeria intestinalis*. It also may be used to prepare a pharmaceutical preparation against rabbit coccidiosis.

4.WO/2020/130672PURIFICATION METHOD FOR VACCINE VIRUS USING AFFINITY CHROMATOGRAPHY
WO - 25.06.2020
Clasificación Internacional C12N 7/00 Nº de solicitud PCT/KR2019/018101 Solicitante CJ HEALTHCARE CORPORATION Inventor/a YU, Jaelim
The present disclosure relates to separation and purification methods for a vaccine virus using affinity chromatography, and more particularly, to a purification method for a virus capable of obtaining a vaccine virus with a high purity and a high yield using affinity chromatography containing a vaccine virus-affinity resin.

5.WO/2020/130224VACCINE COMPOSITION FOR PREVENTING MYCOPLASMA PNEUMONIA AND PLEUROPNEUMONIA
WO - 25.06.2020
Clasificación Internacional A61K 39/02 Nº de solicitud PCT/KR2019/001161 Solicitante INNOVAC Inventor/a HAN, Tae Wook

The present invention relates to a multivalent vaccine composition capable of preventing the occurrence of pneumonia caused by porcine mycoplasma bacteria and pleural pneumococcus. The multivalent vaccine composition according to the present invention can simultaneously prevent pneumonia caused by porcine mycoplasma bacteria and pleural pneumococcus, and may exhibit a superior protective effect compared to commonly used vaccines, by mixing Mycoplasma hyopneumoniae (Mhp) and Mycoplasma hyopneumoniae adhesin protein P97, Actinobacillus pneumoniae (App) serotype 1, serotype 2, and serotype 5, and toxins 1, 2, and 3 secreted from each pleural pneumococcus (Apx I, II, and III). Furthermore, the multivalent vaccine composition has excellent initial defensive ability, has no side effects after vaccination, and contains a recently prevalent serotype, and thus effectively reduces piglet mortality and simultaneously prevents weight gain reduction in pigs due to chronic respiratory symptoms, and thus can be effectively used in the pig farming industry.

6.202011024660NOVEL CORONAVIRUS IN HUMAN VACCINE FORMULATION AND PROCESS TO PREPARE THEREOF
IN - 26.06.2020
Clasificación Internacional C07K 14/005 Nº de solicitud 202011024660 Solicitante Divyesh Yadav Inventor/a Divyesh Yadav
Since 1960s human Coronaviruses is found in the noses of people with the common cold. This invention wherein focuses on the necessity of providing vaccination to the novel coronavirus pandemic found in humans by not only breaking its lipid bilayer hence inactivating the proteins present in the virus but also breaking its RNA sequence , which was a major reason in not able to create human coronavirus vaccine. Due to the wide spread of novel coronavirus there is a rising demand for human coronavirus vaccine. This invention also focuses on making it cost efficient yet feasible for industrial application yet for mass production.

7.0002724706VACCINE STRAIN OF INFLUENZA VIRUS A/17/SLOVENIA/2015/1121 (H1N1)PDM09 FOR PRODUCTION OF LIVE INFLUENZA INTRANASAL VACCINE FOR ADULTS AND CHILDREN
RU - 25.06.2020
Clasificación Internacional A61K 39/145 Nº de solicitud 2019127740 Solicitante Inventor/a Исакова-Сивак Ирина Николаевна (RU)
FIELD: medical virology. SUBSTANCE: vaccine strain A/17/Slovenia/2015/1121 (H1N1)pdm09 is a reassortant produced by crossing epidemic virus A/Slovenia/2903/2015 (H1N1)pdm09 with a cold-adapted temperature-sensitive virus A/Leningrad/134/17/57 (H2N2) – an attenuation donor, which is harmless for humans. Strain A/17/Slovenia/2015/1121 (H1N1)pdm09 actively propagates in developing chick embryos at optimal temperature of 32 °C, characterized by temperature sensitivity, cold tolerance and harmlessness for laboratory animals. Reassortant has inherited genes coding surface antigens of haemagglutinin virus (HA) and neuraminidase (NA), from an epidemic parental virus and other six genes coding internal and non-structural proteins, from an attenuation donor. EFFECT: strain can be used in practical health care for preventing the incidence of influenza in adults and children. 1 cl, 5 tbl

8.WO/2020/127941SERUM FREE INTRACELLULAR PATHOGEN VACCINE
WO - 25.06.2020

Clasificación Internacional A61K 39/02 Nº de solicitud PCT/EP2019/086630 Solicitante INTERVET INTERNATIONAL B.V. Inventor/a KOUMANS, Joseph
A vaccine composition comprising a virus antigen wherein the composition comprises less than 5% serum, wherein the virus antigen is a whole virus or derived from a whole virus. the vaccine composition reduces, prevents or avoids cross-stitch spinal deformity in the treated animal.

9.WO/2020/128031RNA FOR MALARIA VACCINES
WO - 25.06.2020
Clasificación Internacional A61K 39/015 Nº de solicitud PCT/EP2019/086777 Solicitante CUREVAC AG Inventor/a SCHWENDT, Kim Ellen
The present invention is directed to a coding RNA for a Malaria vaccine. The coding RNA comprises at least one heterologous untranslated region (UTR), preferably a 3'-UTR and/or a 5'-UTR, and a coding region encoding at least one antigenic peptide or protein derived from a Malaria parasite, in particular at least one antigenic protein derived from circumsporozoite protein (CSP) of a Malaria parasite (e.g. Plasmodium falciparum). The present invention is also directed to compositions and vaccines comprising said coding RNA in association with a polymeric carrier, a polycationic protein or peptide, or a lipid nanoparticle (LNP). Further, the invention concerns a kit, particularly a kit of parts comprising the coding RNA, or the composition, or the vaccine. The invention is also directed to a method of treating or preventing Malaria, and the first and second medical uses of the coding RNA, the composition, the vaccine, and the kit.

10.WO/2020/127996MIXTURES OF CYCLIN B1 IMMUNOGENIC CD8+ T EPITOPES
WO - 25.06.2020
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2019/086723 Solicitante COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES Inventor/a GUEUGNON, Fabien
The present invention relates to an immunogenic or vaccine composition comprising a CD8 T epitope or a combination of CD8 T epitopes of cyclin B1, said epitope or said combination being able to be presented by at least two different predominant HLA I molecules, preferably included in one or more peptides of human cyclin B1, multi-epitope polypeptides or chimeric proteins, and/or polynucleotides, and said composition being capable of inducing a specific human CD8+ T lymphocyte response in individuals expressing at least one of said molecules. The invention also relates to the use of said composition as an anti-cancer vaccine and as a reagent for the diagnosis of cancer or the immunoblotting of the cellular response against cyclin B1 during cancer or during an anti-cancer treatment

11.20200197514STEROLS AS NOVEL IMMUNOMODULATORY AGENTS AND THEIR USE AS VACCINE ADJUVANTS
US - 25.06.2020
Clasificación Internacional A61K 39/39 Nº de solicitud 16641417 Solicitante Ohio State Innovation Foundation Inventor/a Abhay R. SATOSKAR

Disclosed herein are methods of using immunomodulatory sterols as vaccine adjuvants. Accordingly, certain embodiments relates to pharmaceutical compositions containing at least one antigen and at least one

immunomodulatory sterol; and, methods of inducing an immunomodulatory response in a patient by administering an immunomodulatory-effective amount of at least one immunomodulatory sterol.

12.202011018851CORONAVIRUS (COVID-19) DIAGNOSTIC REAGENTS KITS.
IN - 26.06.2020
Clasificación Internacional C07K / Nº de solicitud 202011018851 Solicitante RAMU DUBEY (ASSISTANT PROFESSOR) Inventor/a RAMU DUBEY (ASSISTANT PROFESSOR)
The invention "CORONAVIRUS (Covid-19) DIAGNOSTIC REAGENTS KITS" is an outbreak of a virulent respiratory virus, now known as Severe Acute Respiratory Syndrome (COVID19), was identified in Hong Kong, China, India (1920-2020) and a growing number of countries around the world in 2019-2020. The invention relates to nucleic acids and proteins from the COVID19 coronavirus. These nucleic acids and proteins can be used in the preparation and manufacture of vaccine formulations, diagnostic reagents, kits, etc. The invention also provides methods for treating COVID19 by administering small molecule antiviral compounds, as well as methods of identifying potent small molecules for the treatment of COVID19. The invention also relates to diagnostic reagents, kits (comprising such reagents) and methods which can be used to diagnose or identify the presence or absence of a COVID19 virus in a biological sample. The invention further includes non-coding COVID19 viral polynucleotide sequences, COVID19 viral sequences encoding for non-immunogenic proteins, conserved and variant COVID19 viral polynucleotide sequences for use in such diagnostic compositions and methods. The invention further relates to vaccine formulations comprising one or more COVID19 virus antigens and one or more other respiratory virus antigens. Additional respiratory virus antigens suitable for use in the invention include antigens from influenza virus, human rhinovirus (HRN), parainfluenza virus (PIN), respiratory syncytial virus (RSN), adenovirus, metapneumovirus, and rhinovirus. The additional respiratory virus antigen could also be from a coronavirus other than the COVID19 coronavirus. Preferably, the additional respiratory virus antigen is an influenza viral antigen.

13.WO/2020/132510NOROVIRUS VACCINE FORMULATIONS AND METHODS
WO - 25.06.2020
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/US2019/067961 Solicitante TAKEDA VACCINES, INC. Inventor/a MASUDA, Taisei
The invention is in the field of vaccines, particularly vaccines for Noroviruses. In addition, the invention relates to methods of preparing vaccine compositions and methods of inducing and evaluating protective immune responses against Norovirus in humans, in particular, pediatric patients.

14.0002724549COMPOSITION FOR PREVENTING AND TREATING MYCOPLASMA HYORHINIS INFECTION AND METHOD OF PRODUCING SAID COMPOSITION
RU - 23.06.2020
Clasificación Internacional A61K 39/02 Nº de solicitud 2019106158 Solicitante Inventor/a ЛИНЬ Цзюнн-Хорнг (CN)
FIELD: biotechnology. SUBSTANCE: invention relates to biotechnology, specifically to production of subunit vaccines against Mycoplasma hyorhinis, and can be used in medicine for preventing Mycoplasma hyorhinis

infection. Disclosed is a vaccine composition based on XylF protein with SEQ ID NO: 1 in combination with an adjuvant. For recombinant production of the active principle of the vaccine, an expression vector is proposed to produce XylF in a prokaryotic expression system containing an expression element which contains a promoter and a ribosome binding site; a nucleotide sequence encoding said XylF; and a sequence coding a fusion partner selected from a group consisting of DsbC from E. coli, MsyB from E. coli, FklB of E. coli or a combination thereof. EFFECT: invention provides achieving a strong immune response against Mycoplasma hyorhinis. 11 cl, 7 tbl, 3 ex, 2 dwg

15.3668541FORMULIERUNGEN FÜR PNEUMOKOKKENKONJUGATIMPFSTOFF
EP - 24.06.2020
Clasificación Internacional A61K 39/02 Nº de solicitud 18846028 Solicitante MERCK SHARP & DOHME Inventor/a CHINTALA RAMESH V
The present invention provides polysaccharide-protein conjugate vaccine formulations comprising a buffer, surfactant, sugar, alkali or alkaline salt, aluminum adjuvant, optionally a bulking agent, and optionally a polymer.

16.WO/2020/127730PRIME-BOOST VACCINATION REGIMEN
WO - 25.06.2020
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/EP2019/086305 Solicitante INTERVET INTERNATIONAL B.V. Inventor/a STRAIT, Erin
The present invention relates to a method of vaccination. Specifically the invention regards to a prime- boost vaccination regimen for protecting a target animal against infection or disease caused by a virus, wherein the vaccination regimen comprises the administration to said target animal of a vaccine comprising a live attenuated form of said virus, followed by the administration to said target animal of a vaccine comprising an RP encoding one or more antigens from said virus.

17.3668595AM KÖRPER TRAGBARE MINIATURLASERBEHANDLUNGSVORRICHTUNG
EP - 24.06.2020
Clasificación Internacional A61N 5/067 Nº de solicitud 18845532 Solicitante VERALASE LLC Inventor/a BEAN DAVID
A portable, miniature laser device that is capable of accurate bodily placement and registration of treatment area for extended timeframes which is useful in long-duration treatments and multi-step treatments of tissue where accurate tissue registration is required, such as treatments requiring vaccine shots or other medications provided to tissue after laser irradiation. Example applications include: improving vaccine efficacy, reducing warts, skin rashes, skin cancer, fungal diseases and promoting wound healing.

18.202011024811CORONAVIRUS DIAGNOSTIC REAGENTS TREATMENT KITS AND SHARE THE PATIENT REAL TIME LOCATION, CONDITION USING DEEP LEARNING PROGRAMMING.
IN - 26.06.2020
Clasificación Internacional A61K 39/215 Nº de solicitud 202011024811 Solicitante Dr. K. RAMKUMAR Inventor/a Dr. K. RAMKUMAR

The invention "CORONAVIRUS DIAGNOSTIC REAGENTS TREATMENT KITS AND SHARE THE PATIENT REAL TIME LOCATION, CONDITION USING DEEP LEARNING PROGRAMMING" is a system for making the process of registering at and receiving treatment in a healthcare and other required facility. The invented system utilizes computer communications network-based systems, hardware software, application S/W various input and output stations, and a patient identification card (e.g., Loyally Card) that work together to allow (a) providers to direct, track, and optimize the efficiency of patient activity and (b) patients to have ready access to their status and, in some cases, control of the healthcare process. The outbreak of a virulent respiratory virus, now known as Severe Acute Respiratory Syndrome (SARS), was identified in Hong Kong, China, USA, India (1920-2020) and a growing number of countries around the world in 2019-2020. The invention relates to nucleic acids and proteins from the SARS coronavirus. These nucleic acids and proteins can be used in the preparation and manufacture of vaccine formulations, diagnostic reagents, kits, etc. The invention also provides methods for treating SARS by administering small molecule antiviral compounds, as well as methods of identifying potent small molecules for the treatment of SARS. The invention also relates to diagnostic reagents, kits (comprising such reagents) and methods which can be used to diagnose or identify the presence or absence of a SARS virus in a biological sample. The invention further includes non-coding SARS viral polynucleotide sequences, SARS viral sequences encoding for non-immunogenic proteins, conserved and variant SARS viral polynucleotide sequences for use in such diagnostic compositions and methods. The invention further relates to vaccine formulations comprising one or more SARS virus antigens and one or more other respiratory virus antigens. Additional respiratory virus antigens suitable for use in the invention include antigens from influenza virus, human rhinovirus (HRN), parainfluenza virus (PIN), respiratory syncytial virus (RSN), adenovirus, metapneumovirus, and rhinovirus. The additional respiratory virus antigen could also be from a coronavirus other than the SARS coronavirus. Preferably, the additional respiratory virus antigen is an influenza viral antigen.

19.0002724896POLYANTIGENIC VACCINE FOR PREVENTING AND ADJUNCTIVE TREATMENT OF TUBERCULOSIS
RU - 26.06.2020
Clasificación Internacional A61P 31/06 Nº de solicitud 2019136607 Solicitante Inventor/a Ткачук Артем Петрович (RU)
FIELD: medicine; pharmaceuticals. SUBSTANCE: invention relates to medicine and pharmaceutics and represents a recombinant tuberculosis vaccine comprising an effective amount of recombinant protein ESAT6-CFP10-Ag85a-Rv2660c, which is fused mycobacterial proteins ESAT-6, CFP10, Ag85a, Rv2660c with histidine tag with length of 8 residues, and an adjuvant represented by a CPG oligonucleotide and a muramyl dipeptide, wherein the recombinant protein and the adjuvant are immobilized on carrier particles from a lactic and glycolic acid copolymer PLGA. EFFECT: increased immunogenic action of recombinant protein-antigen ESAT6-CFP10-Ag85a-Rv2660c in combination with adjuvant presented by CpG-ODN of class A and N-acetylmuramyl-L-alanyl-D-isoglutamine. 5 cl, 13 dwg, 10 tbl, 7 ex

20.3669890FILAMENTÖSE NANOPARTIKEL MIT IMPFSTOFFADJUVANSWIRKUNG
EP - 24.06.2020

Clasificación Internacional A61K 39/39 Nº de solicitud 18213540 Solicitante CRODA INT PLC Inventor/a HU KEFEI
The present invention relates to filamentous, i.e. thread-like nanoparticles comprising sterol and a component derived fromQuillaja saponariaMolina selected from quillaja acid and quillaja saponin. More particularly, the invention relates to the use of said thread-like nanoparticles in vaccines and drug delivery or adsorption systems systems, methods for their production and uses thereof, such as for use as a vaccine adjuvant and in cancer therapy.

21.WO/2020/127115FILAMENTOUS NANOPARTICLES HAVING VACCINE ADJUVANT EFFECT
WO - 25.06.2020
Clasificación Internacional A61K 39/39 Nº de solicitud PCT/EP2019/085444 Solicitante CRODA INTERNATIONAL PLC Inventor/a HU, Kefei
The present invention relates to filamentous, i.e. thread-like nanoparticles comprising sterol and a component derived from Quillaja saponaria Molina selected from quillaja acid and quillaja saponin. More particularly, the invention relates to the use of said thread-like nanoparticles in vaccines and drug delivery or adsorption systems systems, methods for their production and uses thereof, such as for use as a vaccine adjuvant and in cancer therapy.

22.3668540VAKZINE GEGEN LEISHMANIA-INFEKTION
EP - 24.06.2020
Clasificación Internacional A61K 39/002 Nº de solicitud 18846732 Solicitante GEORGIA TECH RES INST Inventor/a FINN M G
A vaccine composition for treating and preventing infection by protozoans is disclosed. The vaccine composition comprises carbohydrates and/or peptides present on the surface of the protozoan, optionally bound to an immunogenic protein nanoparticle.

23.202037016167HUMAN CYTOMEGALOVIRUS IMMUNOGENIC COMPOSITION
IN - 26.06.2020
Clasificación Internacional A61K 39/245 Nº de solicitud 202037016167 Solicitante SANOFI PASTEUR Inventor/a CHAUX, Pascal
The invention relates to an immunogenic composition comprising an HCMV gB antigen, an HCMV gH/gL/UL128/UL130/UL131 pentameric complex antigen and a Th1 -inducing adjuvant. If further relates to the immunogenic composition for use as an HCMV vaccine.

24.202011018349NANO COATING MASK TO PREVENT COVID-19 INFECTION UTILIZING BIODEGRADABLE POLYMER, NANO-MATERIALS AND INDIAN HERBAL MICROCAPSULES.
IN - 26.06.2020
Clasificación Internacional A61K / Nº de solicitud 202011018349 Solicitante DR VRINCE VIMAL (ASSOCIATE PROFESSOR) Inventor/a DR VRINCE VIMAL (ASSOCIATE PROFESSOR)

Viruses, bacteria and fungi became the major problems nowadays and there is a lot of research being done in the development of the personal protecting gears such as drapes, gowns, and the masks. These PPEs are really needed for the protection in the era of the Pandemic. These specific PPEs are required to protect the health workers and the police who are working 24 hours for the safety of the civilians. Currently, a huge outbreak of the COVID19 pandemic is going on in the entire world, and till now there is no vaccination is available. However, globally, scientists are working very hard for the development of the vaccine for this COVID19 Pandemic. But until they found the solution for this problem, we need to follow the health guidelines issued by the health ministry for our safety. Because of that, we are working specifically towards the making of the new mask which is biodegradable and has antiviral and antibacterial properties. In this invention, we elaborate the development of the novel biodegradable Covidl9 mask, which is by reinforcing the nano material and adding an Indian herb Tylophora Indica, having antibacterial and antiviral properties.

25.201821023023METHOD FOR SYNTHESIS OF PROTEIN AMPHIPHILES
IN - 26.06.2020
Clasificación Internacional A61K / Nº de solicitud 201821023023 Solicitante INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH Inventor/a BRITTO, Sandanaraj Selvaraj
The present invention discloses a novel cost effective method for synthesis of protein/peptide amphiphiles irrespective of functional and structural classification of proteins useful in designing a vaccine candidate from antigenic protein. The protein modification of the present invention is universal and hence any protein/peptide can be converted into amphiphilic proteins/peptides.

26.2020203845TUMOR LYSATE LOADED PARTICLES
AU - 25.06.2020
Clasificación Internacional A61K 39/00 Nº de solicitud 2020203845 Solicitante Orbis Health Solutions, LLC Inventor/a
Dendritic cells containing tumor lysate loaded particles are prepared. The dendritic cells present tumor antigens to elicit the Major Histocompatibility Complex class I pathway and can be used as a vaccine to treat cancer, including ocular melanoma.

27.274409VACCINE T CELL ENHANCER
IL - 30.06.2020
Clasificación Internacional A61K 39/00 Nº de solicitud 274409 Solicitante Alfredo NICOSIA Inventor/a Alfredo NICOSIA

28.3668542HPV-IMPFSTOFF
EP - 24.06.2020
Clasificación Internacional A61K 39/12 Nº de solicitud 18759700 Solicitante UNIV OXFORD INNOVATION LTD Inventor/a DORRELL LUCY
The invention relates to a nucleic acid encoding a polypeptide comprising a plurality of conserved peptide sequences, or variants thereof, wherein the conserved sequences are conserved across one or more HPV

genotypes 16, 18, 31, 52, 53, and 58; and wherein the polypeptide comprises a conserved peptide sequence of each of the HPV proteins E1, E2, E4, E5, E6, and E7; and associated vaccines, viral vectors, treatment and prophylaxis.

29.202001975O3COMPOSITIONS COMPRISING STREPTOCOCCUS PNEUMONIAE POLYSACCHARIDE-PROTEIN CONJUGATES AND METHODS OF USE THEREOF
US - 25.06.2020
Clasificación Internacional A61K 39/09 Nº de solicitud 16717509 Solicitante Merck Sharp & Dohme Corp. Inventor/a Chitrananda Abeygunawardana

The invention is related to multivalent immunogenic compositions comprising more than one *S. pneumoniae* polysaccharide protein conjugates, wherein each of the conjugates comprises a polysaccharide from an *S. pneumoniae* serotype conjugated to a carrier protein, wherein the serotypes of *S. pneumoniae* are as defined herein. In some embodiments, at least one of the polysaccharide protein conjugates is formed by a conjugation reaction comprising an aprotic solvent. In further embodiments, each of the polysaccharide protein conjugates is formed by a conjugation reaction comprising an aprotic solvent. Also provided are methods for inducing a protective immune response in a human patient comprising administering the multivalent immunogenic compositions of the invention to the patient. The multivalent immunogenic compositions are useful for providing protection against *S. pneumoniae* infection and/or pneumococcal diseases caused by *S. pneumoniae*. The compositions of the invention are also useful as part of treatment regimes that provide complementary protection for patients that have been vaccinated with a multivalent vaccine indicated for the prevention of pneumococcal disease.

30.202001991940PEPTIDES AND COMBINATION THEREOF FOR USE IN THE IMMUNOTHERAPY AGAINST CANCERS
US - 25.06.2020
Clasificación Internacional C07K 14/74 Nº de solicitud 16794035 Solicitante immatics biotechnologies GmbH Inventor/a Juliane Sarah WALZ

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

31.202001991930PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LEUKEMIAS AND OTHER CANCERS

US - 25.06.2020
Clasificación Internacional C07K 14/74 Nº de solicitud 16793721 Solicitante Immatics Biotechnologies GmbH Inventor/a Juliane Sarah WALZ

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

32.WO/2020/127546IMMUNOTHERAPY WITH B*08 RESTRICTED PEPTIDES AND COMBINATION OF PEPTIDES AGAINST CANCERS AND RELATED METHODS
WO - 25.06.2020
Clasificación Internacional A61K 39/00 Nº de solicitud PCT/EP2019/086037 Solicitante IMMATICS BIOTECHNOLOGIES GMBH Inventor/a SCHIMMACK, Gisela
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor- associated T-cell peptide epitopes, alone or in combination with other tumor-associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

33.20200199195NOVEL PEPTIDES, COMBINATION OF PEPTIDES AS TARGETS AND FOR USE IN IMMUNOTHERAPY AGAINST GALLBLADDER CANCER AND CHOLANGIOCARCINOMA AND OTHER CANCERS
US - 25.06.2020
Clasificación Internacional C07K 14/74 Nº de solicitud 16814532 Solicitante Immatics Biotechnologies GmbH Inventor/a Andrea MAHR

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

34.202017007718MALARIA VACCINE
IN - 26.06.2020
Clasificación Internacional C07K 14/445 Nº de solicitud 202017007718 Solicitante OXFORD UNIVERSITY INNOVATION LIMITED Inventor/a HILL, Adrian V.S.
The invention relates to a composition comprising a polypeptide comprising, or consisting of, the amino acid sequence of SEQ ID NO: 1, or a sequence having at least 80%, 85%, 90%, 95%, 98%, or 99% sequence identity to SEQ ID NO: 1 (R21), wherein said polypeptide is in the form of a virus-like particle (VLP), wherein said particle comprises less than 10% free hepatitis B surface antigen protein, for use in the immunisation of a human subject susceptible to Plasmodium falciparum infection, characterised in that said composition is administered in a dosage regimen of at least one dose of 1 µg to 20 µg R21 per administration for a subject at least 18 years old, or at least one dose of 0.5 µg to 10 µg R21 per administration for a subject less than 18 years old. The invention also relates to kits, methods and uses.

35.2020203850NOVEL PEPTIDES AND COMBINATION OF PEPTIDES AND SCAFFOLDS FOR USE IN IMMUNOTHERAPY AGAINST RENAL CELL CARCINOMA (RCC) AND OTHER CANCERS
AU - 25.06.2020
Clasificación Internacional C07K 14/47 Nº de solicitud 2020203850 Solicitante Immatics Biotechnologies GmbH Inventor/a
The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present invention furthermore relates to tumor associated T-cell peptide epitopes, alone or in combination with other tumor associated peptides that can for example serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses, or to stimulate T cells ex vivo and transfer into patients. Peptides bound to molecules of the major histocompatibility complex (MHC), or peptides as such, can also be targets of antibodies, soluble T-cell receptors, and other binding molecules.

36.WO/2020/128496PESTE DES PETITS RUMINANT VIRUS (PPRV) WITH CHIMERIC N PROTEIN AND CORRESPONDING VACCINE
WO - 25.06.2020
Clasificación Internacional A61K 39/12 Nº de solicitud PCT/GB2019/053641 Solicitante THE PIRBRIGHT INSTITUTE Inventor/a PARIDA, Satya
The present invention provides a peste des petits ruminants virus (PPRV) comprising a chimeric N protein wherein the chimeric N protein comprises a variable C-terminus domain which comprises at least 50 amino acids from the variable C-terminus domain of a N protein from a second morbillivirus which is not PPRV.

37.20200197308Surface display of antigens on Gram-negative outer membrane vesicles
US - 25.06.2020

Clasificación Internacional A61K 9/127 Nº de solicitud 16702660 Solicitante De Staat der Nederlanden, vert. door de minister van VWS, Ministerie van Volksgezondheid, Welzijn en Inventor/a Merijn Louis Marten Salverda

The present invention relates to vaccine compositions based on Gram-negative outer membrane vesicles displaying antigens of pathogens expressed as part of a fusion protein comprising N-terminal parts of surface expressed lipoproteins of Gram-negative bacteria, and use of such compositions in vaccination. The invention further relates to the fusion lipoproteins comprising N-terminal parts of surface expressed lipoproteins of Gram-negative bacteria and antigens of pathogens fused thereto, DNA constructs and bacterial host cells for expressing these fusion lipoproteins and to methods for producing outer membrane vesicles displaying the fusion lipoproteins.

38.2020203853Human immunodeficiency virus (HIV)-neutralizing antibodies
AU - 25.06.2020
Clasificación Internacional C07K 16/00 Nº de solicitud 2020203853 Solicitante International AIDS Vaccine Initiative Inventor/a
The invention provides a method for obtaining a broadly neutralizing antibody (bNab), including screening memory B cell cultures from a donor PBMC sample for neutralization activity against a plurality of HIV-1 species, cloning a memory B cell that exhibits broad neutralization activity

39.20200197441PEPTIDES AND COMBINATION OF PEPTIDES OF NON-CANONICAL ORIGIN FOR USE IN IMMUNOTHERAPY AGAINST DIFFERENT TYPES OF CANCERS
US - 25.06.2020
Clasificación Internacional A61K 35/17 Nº de solicitud 16791591 Solicitante Immatics Biotechnologies GmbH Inventor/a Heiko SCHUSTER

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

40.3668538HANK-CETUXIMAB-KOMBINATIONEN UND VERFAHREN
EP - 24.06.2020
Clasificación Internacional A61K 39/00 Nº de solicitud 18846765 Solicitante NANTCELL INC Inventor/a SOON-SHIONG PATRICK

Contemplated cancer therapies comprise co-administration of aldoxorubicin with an immune therapeutic composition that preferably comprises a vaccine component and a cytotoxic cell component.

41.274130NOVEL SCAFFOLDED HIV-1 VACCINE IMMUNOGENS
IL - 30.06.2020
Clasificación Internacional A61K 09/51 Nº de solicitud 274130 Solicitante THE SCRIPPS RESEARCH INSTITUTE Inventor/a

42.WO/2020/131763COMPOSITIONS COMPRISING STREPTOCOCCUS PNEUMONIAE POLYSACCHARIDE-PROTEIN CONJUGATES AND METHODS OF USE THEREOF
WO - 25.06.2020
Clasificación Internacional A61K 39/09 Nº de solicitud PCT/US2019/066682 Solicitante MERCK SHARP & DOHME CORP. Inventor/a ABEYGUNAWARDANA, Chitrananda
The invention is related to multivalent immunogenic compositions comprising more than one S. pneumoniae polysaccharide protein conjugates, wherein each of the conjugates comprises a polysaccharide from an S. pneumoniae serotype conjugated to a carrier protein, wherein the serotypes of S. pneumoniae are as defined herein. In some embodiments, at least one of the polysaccharide protein conjugates is formed by a conjugation reaction comprising an aprotic solvent. In further embodiments, each of the polysaccharide protein conjugates is formed by a conjugation reaction comprising an aprotic solvent. Also provided are methods for inducing a protective immune response in a human patient comprising administering the multivalent immunogenic compositions of the invention to the patient. The multivalent immunogenic compositions are useful for providing protection against S. pneumoniae infection and/or pneumococcal diseases caused by S. pneumoniae. The compositions of the invention are also useful as part of treatment regimes that provide complementary protection for patients that have been vaccinated with a multivalent vaccine indicated for the prevention of pneumococcal disease.

43.WO/2020/131885IN SITU THERAPEUTIC CANCER VACCINE CREATION SYSTEM AND METHOD
WO - 25.06.2020
Clasificación Internacional A61B 18/02 Nº de solicitud PCT/US2019/066876 Solicitante HOBBS, Eamonn Inventor/a HOBBS, Eamonn
A system for destruction the cellular membranes of unwanted or cancerous tissue without denaturing the intra-cellular contents of the cells comprising the tissue, comprising a treatment probe configured to apply radio-frequency energy to a target tissue followed an injection of immunologic adjuvant drugs into the treatment area and an electric pulse generator, and, optionally, a cryomachine operatively coupled to said treatment probe. The treatment optionally comprises a cryogenic treatment pre-cycle to pre-stress the target tissue, thereby reducing the amount of radio-frequency energy needed to achieve tumor membrane destruction, but without damaging the lymphatic or vascular antigen or tumor drainage systems through which the subsequent anti-tumor effects are enhanced.

44.20200197505LIVE ATTENUATED ZIKA VIRUS WITH 3'UTR DELETION, VACCINE CONTAINING AND USE THEREOF
US - 25.06.2020
Clasificación Internacional A61K 39/12 Nº de solicitud 16485818 Solicitante THE BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS SYSTEM Inventor/a Pei-Yong SHI

The present invention discloses a live attenuated strain of Zika virus (ZIKV) having a deletion in the 3' untranslated region (3'UTR) of the viral genome, which may affect viral RNA synthesis and sensitivity to type I interferon inhibition, but may not affect viral RNA translation. The present invention also discloses the use of these live attenuated ZIKV strains in the preparation of ZIKV vaccines and for providing immunoprotection against ZIKV infection and congenital ZIKV syndrome, particularly in pregnant females.

45.2020203908Consensus prostate antigens nucleic acid molecule encoding the same and vaccine and uses comprising the same
AU - 25.06.2020
Clasificación Internacional C07K 14/00 Nº de solicitud 2020203908 Solicitante Inovio Pharmaceuticals, Inc. Inventor/a
Provided herein are consensus amino acid sequences of prostate antigens that are capable of breaking tolerance in a targeted species, including PSA, PSMA, STEAP and PSCA antigens. Also provided are nucleic acid sequences that encode one or more consensus amino acid sequences of prostate antigens PSA, PSMA, STEAP and PSCA, as well as genetic constructs/vectors and vaccines expressing the sequences. Also provided herein are methods for generating an autoimmune response against prostate cancer cells by administering one or more of the vaccines, proteins, and/or nucleic acid sequences that are provided.

46.WO/2020/132586METHOD AND SYSTEMS FOR PREDICTION OF HLA CLASS II-SPECIFIC EPITOPES AND CHARACTERIZATION OF CD4+ T CELLS
WO - 25.06.2020
Clasificación Internacional G16B 20/00 Nº de solicitud PCT/US2019/068084 Solicitante NEON THERAPEUTICS, INC. Inventor/a ROONEY, Michael Steven
The present disclosure provides method for preparing a personalized cancer vaccine. The present disclosure also provides a method to train a machine-learning HLA-peptide presentation prediction model.

47.20200199175METHOD FOR SYNTHESIS OF PROTEIN AMPHIPHILES
US - 25.06.2020
Clasificación Internacional C07K 1/18 Nº de solicitud 16723280 Solicitante INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH Inventor/a Sandanaraj Selvaraj BRITTO

The present invention discloses a novel cost effective method for synthesis of protein/peptide amphiphiles irrespective of functional and structural classification of proteins useful in designing a vaccine candidate from

antigenic protein. The protein modification of the present invention is universal and hence any protein/peptide can be converted into amphiphilic proteins/peptides.

48.WO/2020/124846NEUTRALIZING ANTIBODY AGAINST RESPIRATORY SYNCYTIAL VIRUS AND USE THEREOF
WO - 25.06.2020
Clasificación Internacional C07K 16/10 Nº de solicitud PCT/CN2019/080162 Solicitante ZHUHAI TRINOMAB BIOTECHNOLOGY CO., LTD. Inventor/a LIAO, Huaxin
Disclosed are a neutralizing antibody against a respiratory syncytial virus and the use thereof. The neutralizing antibody contains a heavy chain variable region comprising VH CDR1, VH CDR2 and VH CDR3 and a light chain variable region (or named as a variable light chain domain) containing VL CDR1, VL CDR2 and VL CDR3, wherein the amino acid sequences of the VH CDR1, VH CDR2 and VH CDR3 in the heavy chain variable region are shown in SEQ ID NO.1, 2 and 3; and the amino acid sequences of the VL CDR1, VL CDR2 and VL CDR3 in the light chain variable region are shown in SEQ ID NO.4, 5 and 6. Also provided in the present invention are a nucleic acid molecule encoding the neutralizing antibody and the uses of the neutralizing antibody in the preparation of a pre-fusion protein product specifically binding to the respiratory syncytial virus, and in the preparation of a respiratory syncytial virus vaccine, etc.

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

Results of Search in US Patent Collection db for: (ABST/vaccine AND ISD/20200623->20200630),

17 resultados.

	PAT. NO.	Title
1	10,696,710	Pharmaceutical targeting of a mammalian cyclic di-nucleotide signaling pathway
2	10,695,416	Vaccine composition against Chlamydiaceae infections
3	10,695,415	Live attenuated oral vaccine against shigellosis and typhoid fever
4	10,695,411	Method of treating with a peptide
5	10,695,408	Xenogenic normal tissue-derived vaccines for breaking the immune tolerance to tumor-associated, antigens
6	10,695,385	Oral cancer vaccine
7	10,695,377	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers

8	10,695,376	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers
9	10,695,375	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers
10	10,695,374	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers
11	10,695,373	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers
12	10,690,669	Bovine herpesvirus detection and treatment
13	10,688,174	Method of conferring a protective immune response to norovirus
14	10,688,173	HPV epitopes targeted by T cells infiltrating cervical malignancies for use in vaccines
15	10,688,170	Multivalent conjugate vaccines with bivalent or multivalent conjugate polysaccharides that provide improved immunogenicity and avidity
16	10,688,131	Peptides and scaffolds for use in immunotherapy against head and neck squamous cell carcinoma and other cancers
17	10,688,120	Allergy vaccine composition

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