



EN ESTE NÚMERO

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

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

Resumen de la información publicada por la OMS sobre los candidatos vacunales contra la COVID-19 en desarrollo a nivel mundial

Última actualización por la OMS: 19 de abril de 2022.

Fuente de información utilizada:



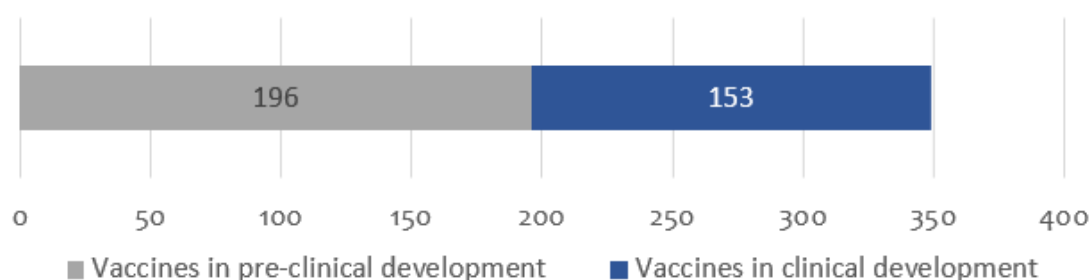
World Health Organization



R&DBlueprint

Powering research to prevent epidemics

153 candidatos vacunales en evaluación clínica y 196 en evaluación preclínica



Candidatos vacunales en evaluación clínica por plataforma

Platform	Candidate vaccines (no. and %)	
PS	Protein subunit	51 34%
VVnr	Viral Vector (non-replicating)	21 14%
DNA	DNA	16 11%
IV	Inactivated Virus	21 14%
RNA	RNA	28 18%
VVr	Viral Vector (replicating)	4 3%
VLP	Virus Like Particle	6 4%
VVr + APC	VVr + Antigen Presenting Cell	2 1%
LAV	Live Attenuated Virus	2 1%
VVnr + APC	VVnr + Antigen Presenting Cell	1 1%
BacAg-SpV	Bacterial antigen-spore expression vector	1 1%

153

Candidatos vacunales mucosales en evaluación clínica

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

Candidatos vacunales más avanzados a nivel global

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Fase
Sinovac/China	Virus Inactivado	4
Sinopharm/Wuhan Institute of Biological Products/China	Virus Inactivado	4
Sinopharm/Beijing Institute of Biological Products/China	Virus Inactivado	4
University of Oxford/AstraZeneca/Reino Unido	Vector viral no replicativo	4
CanSino Biological Inc./Beijing Institute Biotechnology/China	Vector viral no replicativo	4
CanSino Biological Inc./Beijing Institute Biotechnology/China	Vector viral no replicativo (IH)	4
Gamaleya Research Institute/Rusia	Vector viral no replicativo	3
Janssen Pharmaceutical Companies/Estados Unidos	Vector viral no replicativo	4
Novavax/Estados Unidos	Subunidad proteica	3
Moderna/NIAID/Estados Unidos	ARN	4
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN	4
Anhui Zhifei Longcom Biopharm./Inst. Microbiol, Chin Acad Sci/China	Subunidad proteica	3
CureVac AG/Alemania	ARN	3
Institute of Medical Biology/Chinese Academy of Medical Sciences	Virus inactivado	3
Research Institute for Biological Safety Problems, Kazakhstan	Virus inactivado	3
Inovio Pharmac. + Intern. Vacc Inst. + Advaccine Biopharm Co., Ltd	ADN	3
Zydus Cadila Healthcare Ltd./India	ADN	3
Bharat Biotech International Limited/India	Virus Inactivado	3
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica	3
Shenzhen Kangtai Biological Products Co., Ltd./China	Virus Inactivado	3
Clover Biopharmaceuticals Inc./GSK/Dynavax/China/Reino Unido/EE.UU	Subunidad proteica	3
Vaxine Pty Ltd. + CinnaGen Co./Australia, Irán	Subunidad proteica	3
Medigen Vaccine Biol./Dynavax/NIAID/Taiwán/EE.UU	Subunidad proteica	4
Instituto Finlay de Vacunas/Cuba	Subunidad proteica	3
Federal Budget Res Inst State Res Cent Virol Biotechnol "Vector"/Rusia	Subunidad proteica	3
West China Hospital + Sichuan University/China	Subunidad proteica	3
Vaxxinity	Subunidad proteica	3
Univ. Hong Kong, Xiamen Univ. & Beijing Wantai Biological Pharm./China	Vector viral replicativo	3
Acad Milit Sci (AMS) Walvax Biotechnol, Suzhou Abogen Biosci/China	ARN	3
Medicago Inc./Canadá	Partícula similar a virus	3
Codagenix/Serum Institute of India	Virus vivo atenuado	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	3
Valneva, National Institute for Health Research, Reino Unido	Virus inactivado	3
Biological E. Limited/India	Subunidad proteica	3
Nanogen Pharmaceutical Biotechnology/Vietnam	Subunidad proteica	3
Shionogi/Japón	Subunidad proteica	3
Erciyes University/Turquía	Virus inactivado	3
SK Bioscience Co., Ltd./CEPI/Corea del Sur/Noruega	Subunidad proteica	3
Razi Vaccine and Serum Research Institute/Irán, India	Subunidad proteica	3
Bharat Biotech International Limited/India	Vector viral no replicativo (IN)	3
Arcturus Therapeutics, Inc./Estados Unidos	ARN	3
Livzon Pharmaceutical/China	Subunidad proteica	3
Bagheiat-allah University of Medical Sciences/AmitisGen/Irán	Subunidad proteica	3
Laboratorios Hipra, S.A.	Subunidad proteica	3
Sinocelltech Ltd.	Subunidad proteica	3

Noticias en la Web

Vacunas contra COVID confirmadas para niñas y niños en México: AMLO dice que ya solicitó las dosis a COVAX

13 abr. Una vez que termine el Plan Nacional de Vacunación contra COVID-19, que está considerado para concluir a finales de abril, se iniciará la aplicación de dosis a niños y niñas con los biológicos aprobados por la Organización Mundial de la Salud (OMS), de acuerdo con el presidente Andrés Manuel López Obrador.

De acuerdo con el mandatario, se trata de un lote de vacunas proveniente del mecanismo Covax de la ONU, que ya está pagado por el país, mismo que se está solicitando al organismo mande dosis para los menores de edad, pues "los biológicos con los que se cuentan no se pueden utilizar al no ser de las marcas autorizadas".

Señaló que en los próximos días se espera respuesta por parte del mecanismo Covax y las vacunas serán aplicadas de forma universal, es decir para todos los niños, no solamente para aquellos que tengan alguna enfermedad o con capacidades diferentes.

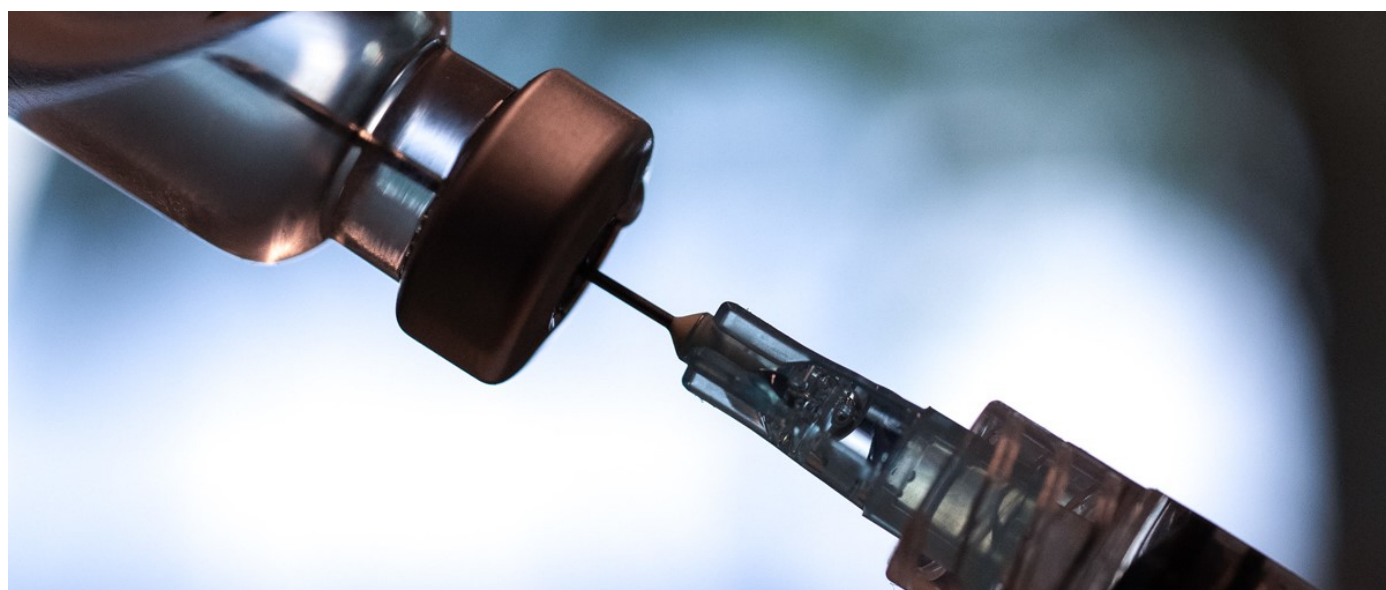
Por lo pronto, no se especificó para que rangos de edades se estaría vacunando, señalando que "será para todos los niños que deban vacunarse, que sean autorizados por la Organización Mundial de la Salud con la vacuna correspondiente".

Las vacunas para niños

De acuerdo con la página oficial de la OMS, por el momento hay dos vacunas que se están autorizadas para aplicarse en menores: la primera es la de Pfizer, que se puede administrar con seguridad a niños a partir de los cinco años, y junto a la de Moderna, están consideradas para usarse en niños a partir de los 12 años.

Incluso la Organización señala que se puede ofrecer la vacunación a niños de cinco años en adelante con comorbilidades que tengan riesgo considerablemente mayor de enfermar gravemente de COVID-19 y que se recomienda aplicar el biológico solamente cuando se logre una alta cobertura con dos dosis en grupos prioritarios

En el caso de México, la única vacuna autorizada para su uso en menores por la Cofepris corresponde a la marca Pfizer, pero hasta ahora se desconocía si habría aplicación masiva para niñas y niños.



Fuente: Xataka. Disponible en <https://cutt.ly/7GyjJAm>

Cuba garantiza dosis de refuerzo para adolescentes y jóvenes entre los 12 y los 18 años de edad

13 abr. La dirección del país y las autoridades sanitarias consensuaron la conveniencia de aplicar la primera dosis de refuerzo con las vacunas cubanas anti-COVID-19, a adolescentes y jóvenes en las edades comprendidas entre los 12 y 18 años de edad que hayan cumplido seis meses del esquema completo de la primo-vacunación.

La propuesta fue adoptada en el encuentro de esta semana del Primer Secretario del Comité Central del Partido y Presidente de la República, Miguel Díaz-Canel Bermúdez, y el primer ministro, Manuel Marrero Cruz, con científicos y expertos que participan en las actividades de ciencia e innovación tecnológica para el enfrentamiento al coronavirus.

La campaña abarcará a cerca de 848 000 individuos de esas edades. Hasta ahora la dosis de refuerzo era aplicable a personas de 19 años de edad en adelante. El encuentro también evaluó otro grupo de acciones como parte de la estrategia de vacunación.

Una de ellas fue la propuesta de nuevos ensayos clínicos, en esta ocasión en edades pediátricas (lactantes), los cuales se encuentran en etapa de evaluación por parte del Centro para el Control Estatal de Medicamentos, Equipos y Dispositivos Médicos (Cecmed).

La doctora Ileana Morales Suárez, directora de Ciencia e Innovación Tecnológica del Ministerio de Salud Pública (Minsap), explicó que un ensayo será el Estudio Pequeñuelo, Fase I/II, que tiene como promotor al Centro de Ingeniería Genética y Biotecnología (CIGB) con la vacuna Abdala, y se desarrollará en La Habana.

El otro ensayo propuesto al Cecmed es el Estudio Soberana Futuro, Fase I/II, que tiene como centro promotor al Instituto Finlay de Vacunas. Se desarrollará en La Habana y en Cienfuegos.

En la reunión, en la que también participaron la vice primera ministra Inés María Chapman Waugh y el titular del Minsap, José Angel Portal Miranda, se consensó la realización de una intervención con el grupo etario comprendido entre un año y un año, 11 meses y 29 días.

Morales Suárez señaló que tomará en cuenta los estudios previos de seguridad e inmunogenicidad desarrollados en edades pediátricas.



Explicó que se realizará de manera progresiva y en dos etapas:

Primera etapa: Introducción de la vacunación mediante un estudio de farmacovigilancia en niñas y niños comprendidos entre un año y un año, 11 meses y 29 días. El ensayo se realizará en Camagüey, con la vacuna Abdala, y en Cienfuegos, con las Soberanas.

Segunda etapa: Avanzada la primera etapa, se realizará un informe parcial de seguridad que será enviado a la Autoridad Reguladora, el cual evaluará sus resultados y los obtenidos en estudios anteriores. De ser favorable, extenderá el Autorizo de Uso en Emergencia a este grupo etario. Una vez aprobado se aplicarán las vacunas de forma regionalizada.

También se propuso reforzar con las vacunas aprobadas para ello, con una segunda dosis de refuerzo, a grupos de alto riesgo (se ejecutará una vez cumplido los seis meses del primer refuerzo). Se incluyen personas mayores de 60 años y personas inmunocomprometidas (enfermos oncológicos, enfermedades renales crónicas, trasplantados, personas con inmunodeficiencias, entre otras).

Con el propósito de desarrollar otros estudios que permitirán definir nuevas necesidades de dosis de refuerzo, el periodo de aplicación de estas y las condiciones en que deben desarrollarse, se propuso, además, un estudio sobre la duración de la respuesta inmune en trabajadores de BioCubaFarma, y otro sobre la duración de la respuesta inmune en trabajadores de la Salud, con primo-vacunación y dosis de refuerzo, del IPK y de otras instituciones.

Cada día más Soberana

En el encuentro de esta semana, del Presidente de la República y el Primer Ministro con los científicos y expertos, también se presentó un resumen del impacto del estudio de duración y calidad de la respuesta inmune en niños con las vacunas Soberanas. La evaluación estuvo a cargo del doctor en Ciencias Vicente Vérez Bencomo, director general del Instituto Finlay de Vacunas y líder de ese programa.

En un análisis comparativo del comportamiento de la pandemia y la respuesta de las vacunas anti-COVID-19 en cuatro países con más alta cobertura de inmunización que Cuba, y en el nuestro, el científico explicó que, gracias a que fuimos la primera nación en proteger a su población pediátrica entre dos y 18 años de edad, a la calidad de las vacunas cubanas, y a cómo realizamos nuestra campaña de inmunización, nuestros resultados en el amparo de la población infantil y general han sido muy relevantes.

Entre otras conclusiones, señaló que en Cuba:

La reducción de la tasa de incidencia en población vacunada de dos a 18 años de edad fue de 79,1 %. Según estimados, por esta causa se evitaron 69 869 casos en esos grupos etarios.

Debido a nuestra campaña de vacunación general y en la población pediátrica de dos a 18 años de edad, en el periodo Ómicron (de finales de diciembre de 2021 a la fecha), la relación de la tasa de incidencia en niñas y niños menores de dos años, a pesar de no estar aún vacunados, permitió, según estimados, evitar que enfermaran 51 022 de esos menores.

Nadie en el mundo, excepto Cuba (que realizó una campaña de inmunización general a esos grupos, entre el 15 de septiembre y el 15 de noviembre), había empezado a vacunar a la población pediátrica antes de la ola Ómicron, resumió Vérez Bencomo. También lo sintetizó así:

Las vacunas cubanas funcionaron.

La campaña en la población pediátrica (y el resto) fue un éxito.

La protección ante la variante Ómicron resultó.

El Director General del IFV también presentó un análisis sobre la duración de la respuesta de anticuerpos a los seis-siete meses de la vacunación pediátrica con Soberana, y se demostró que esta población muestra una respuesta positiva muy superior a la adulta.

En el encuentro, la doctora en Ciencias Dagmar García Rivera, directora de Investigaciones del IFV, transmitió un agradecimiento a las niñas, niños y adolescentes que han participado en los ensayos con las vacunas cubanas, quienes, a pesar de someterse a lo que pudieran ser pruebas difíciles, dolorosas, asumieron su rol con valentía y han dado su contribución para salvar vidas, para salvar al país.

Pronósticos de la semana

En el encuentro de este martes, de los científicos y expertos con el Primer Secretario del Comité Central, se presentó la habitual actualización de los modelos de pronósticos de la COVID-19, por parte del doctor en Ciencias Raúl Guinovart Díaz, decano de la Facultad de Matemática y Computación de la Universidad de La Habana. Tras analizar los modelos que emplean para sus análisis, concluyó que:

En la pasada semana, la situación más compleja se presentó en la provincia de Mayabeque; no obstante, las otras occidentales (Pinar del Río, Artemisa y La Habana) tuvieron un incremento de la incidencia de casos. Las cuatro provincias del centro-oeste (Matanzas, Villa Clara, Cienfuegos y Sancti Spíritus) han tenido una mejora sustancial. Y en la región oriental solo Camagüey incrementó la incidencia en este periodo.

Para todas las provincias se pronostica el mantenimiento de su situación actual, con una tendencia al control y el descenso de casos. Las predicciones para los próximos diez días apuntan a un descenso de casos confirmados.

Al cierre de esta semana se prevé una tendencia a la disminución de casos confirmados y hospitalizados; no obstante, deben mantenerse las acciones preventivas establecidas y no bajar la percepción de riesgo.

Este martes también se realizó la habitual reunión del Grupo temporal de trabajo del Gobierno para la prevención y control de la COVID-19, que mediante videoconferencia con autoridades políticas y gubernamentales de las 15 provincias y del municipio especial Isla de la Juventud, estuvo encabezada por el Primer Secretario del Comité Central del Partido y Presidente de la República, Miguel Díaz-Canel Bermúdez.

También participaron los miembros del Buró Político, Esteban Lazo Hernández, presidente de la Asamblea Nacional del Poder Popular; Manuel Marrero Cruz, primer ministro, y Salvador Valdés Mesa, vicepresidente de la República. Asistieron, además, los vice primeros ministros Inés María Chapman Waugh y Alejandro Gil Fernández, además de ministras, ministros y otras autoridades.

Fuente: Escambray. Disponible en <https://cutt.ly/xGyQnpO>

Valneva approved to be UK's sixth Covid vaccine

Abr 14. A Covid-19 vaccine developed by the French pharmaceutical company Valneva has been given regulatory approval by the Medicines and Healthcare products Regulatory Agency, bringing the total number of jabs approved for use in the UK to six.

As the Covid pandemic swept the world, scientists began developing vaccines against it, with the Pfizer/BioNTech jab being the first in the UK to be authorised for emergency use by the MHRA in 2020. Since then the MHRA has approved the Moderna, Oxford/AstraZeneca, Janssen and Novavax vaccines, although, according to NHS England, Janssen and Novavax are not currently available.

The UK's independent medicines regulator was the first in the world to approve the Valneva product, the MHRA said. Unlike the other approved Covid jabs, the Valneva vaccine is an inactivated whole-virus vaccine, which means the live virus was grown in a laboratory, rendered unable to infect cells, then administered to people to trigger an immune response.



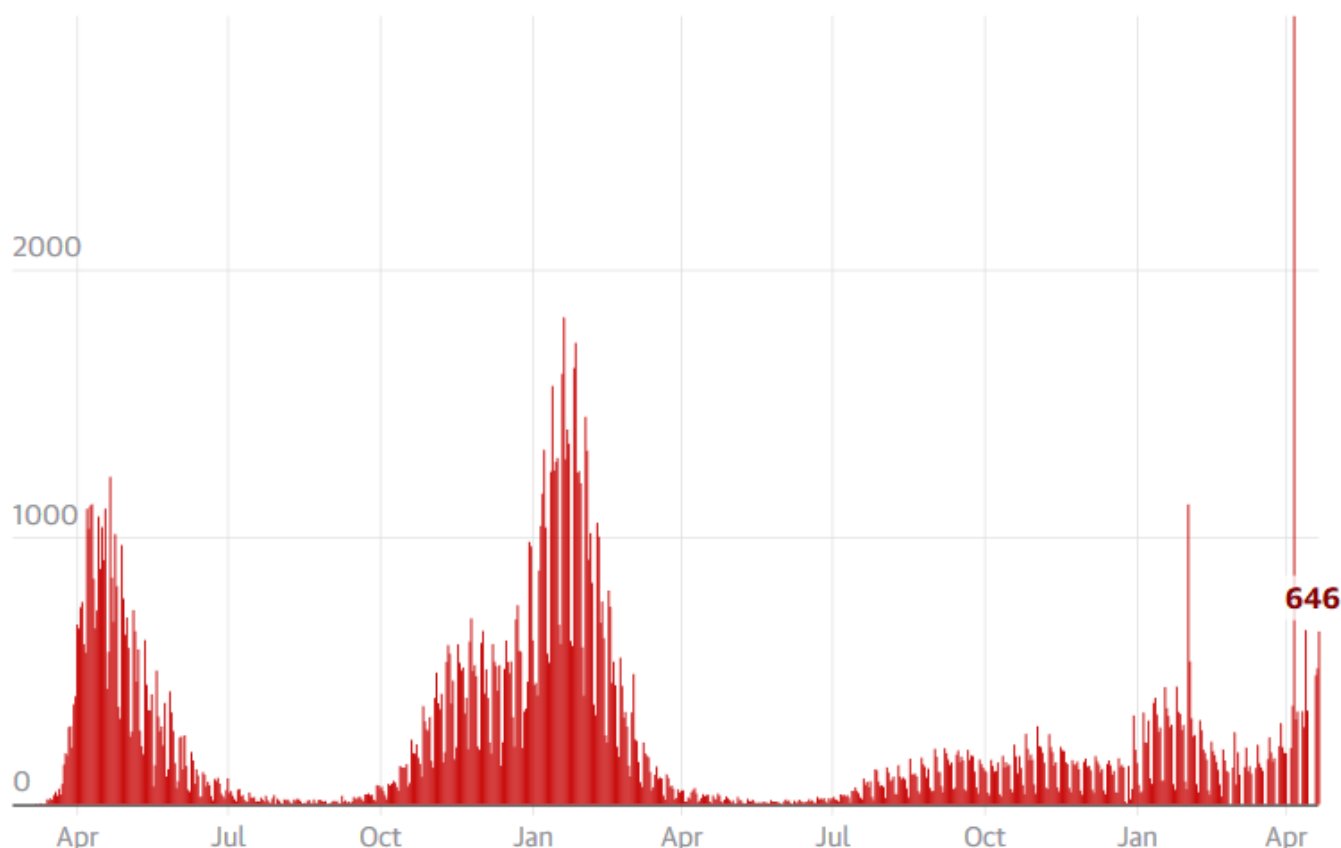
The MHRA said this approach was already being used for flu and polio vaccines and experts have previously suggested that Covid jabs based on the whole virus may result in a broader immune response than those that involve only the spike protein, and may work better against new variants.

Covid-related deaths are rising in England and Wales, though they remain well below the levels seen in previous waves. Photograph: Justin Tallis/AFP/Getty Images

Results released by Valneva in October suggested the vaccine could be as effective as the Oxford jab. In addition, it is stable when stored in a standard refrigerator, which could make it easier to distribute than some other Covid jabs.

UK: number of coronavirus deaths per day

Starting from day of first reported death



Data from Johns Hopkins University at 07:02 UTC 22 Apr 2022

Prof Sir Munir Pirmohamed, the chair of the independent Commission on Human Medicines, said the commission and its Covid-19 expert working group had carefully considered the evidence and advised that the benefit-risk balance was positive. "The vaccine is approved for use in people aged 18 to 50 years, with the first and second doses to be taken at least 28 days apart."

Prof Adam Finn, a member of the Joint Committee on Vaccination and Immunisation and the chief investigator on the Valneva clinical development programme, said that while the jab had been approved it was unlikely to be available in the UK soon, as the government had cancelled its contract to buy the vaccine in September.

However, he said the jab could prove more acceptable than others to some people. "The people who could theoretically benefit from it now are unvaccinated 18- to 50-year-olds who want immunisation but are hesitant about currently available vaccines," he said, adding that the Novavax jab could also appeal to this group.

However, there was another hurdle. "In the UK, no one has yet been offered any choice as to which vaccine they receive," said Finn, a professor of paediatrics at the University of Bristol.

On Thursday it was also revealed that the MHRA had approved extending the use of the Moderna Covid jab to six- to 11-year-olds in Great Britain, an age group for which it is already authorised in Northern Ireland. At present, children aged five to 17 are only offered the Pfizer/BioNTech vaccine, which is based on similar mRNA technology.

Dr June Raine, the MHRA's chief executive, said the Moderna vaccine was safe and effective in six- to 11-year-olds, but that the age group was included in the ongoing safety surveillance of all Covid jabs.

"It is for the Joint Committee on Vaccination and Immunisation (JCVI) to advise in due course on whether six-to-11s should be offered vaccination with the Covid-19 vaccine made by Moderna as part of the deployment programme," she said.

The number of deaths involving coronavirus registered each week in England and Wales has continued to increase, although levels remain well below those reached during previous Covid waves.

Fuente: The Guardian. Disponible en <https://cutt.ly/tGyAeUQ>

SARS-CoV y MERS-CoV: las epidemias que precedieron al SARS-CoV-2

14 abr. Hasta la aparición del SARS-CoV-2, se habían descrito seis coronavirus en seres humanos (HCoV-NL63, HCoV-229E, HCoV-OC43 y HKU1) que son responsables de un número importante de las infecciones leves del tracto respiratorio superior.

El SARS-CoV-2 no es el primer coronavirus al que la humanidad tiene que hacer frente. Los coronavirus pertenecen a la subfamilia Orthocoronavirinae, dentro de la familia Coronaviridae (orden Nidovirales). Esta subfamilia comprende cuatro géneros: Alphacoronavirus, Betacoronavirus, Gammacoronavirus y Deltacoronavirus de acuerdo a su estructura genética.

Los alfacoronavirus y betacoronavirus infectan solo a mamíferos y normalmente son responsables de infecciones respiratorias en humanos y gastroenteritis en animales. Hasta la aparición del SARS-CoV-2, se habían descrito seis coronavirus en seres humanos (HCoV-NL63, HCoV-229E, HCoV-OC43 y HKU1) que son responsables de un número importante de las infecciones leves del tracto respiratorio superior en

personas adultas inmunocompetentes, pero que pueden causar cuadros más graves en niños y ancianos con estacionalidad típicamente invernal, tal y como expone el Ministerio de Sanidad a través de los documentos científico-técnicos publicados en relación al virus.

Estructuralmente, los coronavirus son virus esféricos de 100-160 nm de diámetro, con envuelta y que contienen ARN monocatenario (ssRNA) de polaridad positiva de entre 26 y 32 kilobases de longitud.

El genoma del virus SARS-CoV-2 codifica cuatro proteínas estructurales: la proteína S (spike protein), la proteína E (envelope), la proteína M (membrane) y la proteína N (nucleocapsid). La proteína N está en el interior del virión asociada al RNA viral, y las otras cuatro proteínas están asociadas a la envuelta viral. La proteína S se ensambla en homotrómeros, y forma estructuras que sobresalen de la envuelta del virus.

La proteína S contienen el dominio de unión al receptor celular y por lo tanto es la proteína determinante del tropismo del virus y además es la proteína que tiene la actividad de fusión de la membrana viral con la celular y de esta manera permite liberar el genoma viral en el interior de la célula que va a infectar.

El SARS-CoV y MERS-CoV, ambos patógenos emergentes a partir de un reservorio animal, son responsables de infecciones respiratorias graves de corte epidémico con gran repercusión internacional debido a su morbilidad y mortalidad.

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El coronavirus SARS-CoV-2 se erige de esta forma como el séptimo coronavirus aislado y caracterizado capaz de provocar infecciones en humanos.

SARS-COV Y MERS-COV: ANTERIORES EPIDEMIAS

El síndrome respiratorio agudo grave (SARS, Severe Acute Respiratory Syndrome) es la enfermedad respiratoria provocada por el coronavirus SARS-CoV. De acuerdo con la información recogida por los Centros para el Control y la Prevención de Enfermedades de Estados Unidos (CDC, por sus siglas en inglés), la primera vez que se reportó su existencia fue en Asia en 2003. Pocos meses después, la enfermedad se propagó a más de dos docenas de países.

La Organización Mundial de la Salud (OMS) indica que el brote global que se desató en 2003 provocó 8.098 casos en todo el mundo de los 774 fallecieron. Los principales síntomas asociados a la infección son la fiebre, tos dolor de cabeza y sensación general de malestar. Los CDC indican que la mayoría de los pacientes contraen neumonía.

La principal vía de contagio son las gotitas que exhalamos al respirar, hablar, toser o estornudar. El virus también se puede propagar por contacto con superficies contaminadas.

Ponemos el foco en el MERS-CoV. El síndrome respiratorio de Medio Oriente es una enfermedad respiratoria viral. Los primeros casos se detectaron en Arabia Saudí en 2012.

El coronavirus SARS-CoV-2 se erige de esta forma como el séptimo coronavirus aislado y caracterizado capaz de provocar infecciones en humanos

De acuerdo con la información recabada por la OMS el espectro clínico de una infección por MERS-CoV

varía desde la ausencia de síntomas (infección asintomática) o síntomas respiratorios suaves hasta una enfermedad respiratoria aguda severa y la muerte. La enfermedad por MERS-CoV se presenta normalmente con fiebre, tos y dificultades respiratorias. Es habitual que haya neumonía, pero no siempre. También se han registrado síntomas gastrointestinales, en particular diarrea. En su versión grave la enfermedad puede provocar insuficiencia respiratoria que exige ventilación mecánica y apoyo en una unidad de cuidados intensivos.

El virus parece provocar una enfermedad más grave en personas mayores, personas con inmunodepresión y personas con enfermedades crónicas como cáncer, neumopatía crónica y diabetes.

El MERS-CoV es un virus zoonótico, es decir, que se transmite de los animales a las personas. Los estudios han revelado que las personas se infectan por contacto directo o indirecto con dromedarios infectados. El MERS-CoV se ha identificado en dromedarios en varios países, como Arabia Saudita, Egipto, Omán o Qatar. También se han detectado anticuerpos específicos contra el MERS-CoV (hecho que indica que el animal ha estado infectado por el virus) en dromedarios de Oriente Medio, África y Asia Meridional.

No se conocen bien los orígenes del virus pero, según se desprende del análisis de varios de sus genomas, se cree que el virus habría podido originarse en murciélagos y haberse transmitido a los camellos en algún momento de un pasado lejano.



Fuente: Con Salud. Disponible en <https://cutt.ly/GGyZXxp>

Las autoridades médicas de África llaman a comprar vacunas anticovid locales

14 abr. El director de los Centros para el Control y Prevención de Enfermedades de África (África CDC), dependiente de la Unión Africana (UA), John Nkengasong, pidió hoy a los gobiernos africanos y a los organismos internacionales un compromiso para comprar vacunas producidas en el continente.

Nkengasong reveló que la empresa farmacéutica sudafricana Aspen, que a principios de marzo pasado consiguió la patente completa de la vacuna anticovid de Johnson & Johnson para poder producirla bajo su propia marca con el nombre de "Aspenovax", no ha recibido ningún encargo hasta el momento.

"Si no reciben encargos en los próximos meses, tendrán que cerrar las instalaciones", advirtió este jueves el director del África CDC en una rueda de prensa virtual.

Según el acuerdo alcanzado con Johnson & Johnson, Aspen, la mayor productora farmacéutica del continente, disfrutará al menos hasta finales de 2026 de la licencia, que incluye también la potencial producción futura de fórmulas modificadas de la vacuna para nuevas variantes.

Después de que África quedara a la cola del mundo a la hora de conseguir vacunas contra la pandemia de la covid-19, la necesidad de impulsar el desarrollo y la producción local de estos fármacos se hizo evidente y en los últimos meses han surgido iniciativas en países como Sudáfrica, Senegal, Ruanda, Kenia o Egipto.

Sin embargo, según Nkengasong, los países "están recibiendo muchas donaciones (que se multiplicaron después de que las naciones ricas lograran alcanzar altas tasas de inmunización), así que no ven la urgencia de adquirir vacunas".

El director del Africa CDC advirtió de que los gobiernos no pueden bajar la guardia aunque los casos y las muertes en África se encuentren en descenso.

"Los encargos deberían venir de los esfuerzos de la comunidad internacional (como el mecanismo COVAX de acceso equitativo, impulsado por la Organización Mundial de la Salud, OMS) y de los gobiernos africanos", señaló Nkengasong.

"Necesitamos que los países africanos no solo esperen donaciones, sino que también se comprometan a comprar esas vacunas", añadió.

Según los expertos, la falta de voluntad política, financiación, infraestructura y capacidad regulatoria son algunos de los obstáculos que enfrenta África para conseguir la meta establecida por la Unión Africana: que el continente pase de producir el 1 % actual de las vacunas que usa a un 60 % en 2040.

De acuerdo a la Organización Mundial de la Salud, las infecciones y los fallecimientos en el continente han disminuido de manera constante durante los últimos cuatro y dos meses, respectivamente.

La semana pasada, el número de nuevos casos registrados disminuyó en un 29 % y las muertes en un 39 %, según la organización.

Sin embargo, "con el virus aún circulando el riesgo de que surjan nuevas variantes más letales permanece", dijo hoy en un comunicado la directora regional para África de la OMS, Matshidiso Moeti.

Hasta la fecha, el continente ha registrado más de 11,3 millones de casos y más de 250.000 muertes, según los últimos datos.

Fuente: swissinfo. Disponible en <https://cutt.ly/cGyVAij>

BioCubaFarma aumentará sus capacidades productivas con nuevo programa de inversiones

15 abr. A través de un amplio programa de inversiones que prevé la creación de instalaciones y la recapitalización de otras, el Grupo Empresarial de la Industria Biotecnológica y Farmacéutica de Cuba, BioCubaFarma, aumentará sus capacidades productivas.

En 2022 se pondrán en marcha seis nuevas líneas productivas paralelas a la recapitalización de instalaciones, con el objetivo de incrementar el estándar regulatorio de la industria biotecnológica y farmacéutica, la eficiencia de los procesos y la transformación tecnológica, destacó Santiago Dueñas Carrera, director de



Inversiones y Mantenimiento de BioCubaFarma, a la Agencia Cubana de Noticias (ACN).

Además, Dueñas Carrera señaló que el desarrollo de las inversiones, concebidas en el programa, están en correspondencia con las proyecciones de organización hasta 2030.

Como parte de las proyecciones, indica la ACN, tienen previsto completar varios objetos de obra entre los que se destacan, la planta de antibióticos inyectables de la Empresa Farmacéutica 8 de Marzo; una de cremas y ungüentos, y nuevas líneas de formulación y llenado en la Empresa Laboratorios AICA, informó el director de Inversiones y Mantenimiento de la institución.

También precisó que en 2021 se materializaron varias obras en función del enfrentamiento a la COVID-19, a la par de la construcción del Complejo Industrial Biotecnológico CIGB-Mariel, inversión más grande y de mayor estándar desde la creación de BioCubaFarma.

Fuente: Granma. Disponible en <https://cutt.ly/qGy2RQc>

Poor countries reject COVID vaccines from AstraZeneca because of shorter shelf life: report

Abr 15. As supplies of COVID-19 vaccines have become more plentiful in poor nations, many are tuning down certain shipments.

A document from the World Health Organization's global vaccine supply effort COVAX shows (PDF) that low-income countries have declined millions of doses of AstraZeneca's Vaxzevria, Reuters reports.

Since the relief initiative began, AstraZeneca has been its most prolific supplier. But that's changing quickly. Of 200 million COVAX doses assigned to 61 lower-income countries during a six-month period that will end in September, only a small portion will be from AZ.

Countries refused to accept nearly 35 million AZ shots, opting instead for those made by Pfizer-BioNTech, Moderna and Johnson & Johnson, according to the document.

With supplies more accessible, countries are turning away from Vaxzevria largely because of its shorter shelf life, according to the report. Many poor countries lack the infrastructure to distribute vaccines quickly enough to avoid their expiration date.

Vaxzevria has a shelf life of six months. Covishield, the vaccine produced through AZ's partnership with the Serum Institute, has a nine-month shelf life thanks to a recent WHO extension. AZ is working with regulators to get the same extension for Vaxzevria, the company has said.

While the 61 nations requested a combined 70 million doses from Pfizer and 40 million from Moderna, they asked for only 16.5 million from AZ.

There was a similar number of shots requested from Chinese vaccine suppliers Sinopharm and Sinovac, the document said.



Fuente: Fierce Pharma. Disponible en <https://bit.ly/3EF1cSz>

Cuba ultima una vacuna contra la COVID-19 que se administra por vía nasal

17 abr. Mambisa es una de las 11 posibles vacunas diseñadas en todo el mundo de aplicación por vía nasal. Cuatro de ellas están ya en fase de estudios clínicos.

El Centro de Ingeniería Genética y Biotecnología de Cuba (CIGB) ha informado de que los estudios clínicos de la candidata vacuna nasal contra la COVID-19 bautizada como Mambisa han arrojado resultados positivos, por lo que se propondrá como dosis de refuerzo.



"Ya se están procesando los resultados de los estudios clínicos con el candidato vacunal nasal anti covid-19 Mambisa diseñado por el CIGB (...). Podemos adelantar que son positivos y que pueden justificar un autorizo para ser usado como dosis de refuerzo", ha publicado el CIGB en un mensaje en Twitter.

Mambisa es una de las 11 posibles vacunas diseñadas en todo el mundo de aplicación por vía nasal. Cuatro de ellas están ya en fase de estudios clínicos.

A diferencia de las vacunas inyectables, las nasales estimulan la inmunogenicidad local en las mucosas, lugar de entrada del patógeno, lo cual permite su neutralización temprana.

Fuente: 20 minutos. Disponible en <https://cutt.ly/qGuh4T3>

Egypt aims for cooperation with Cuba on vaccine production

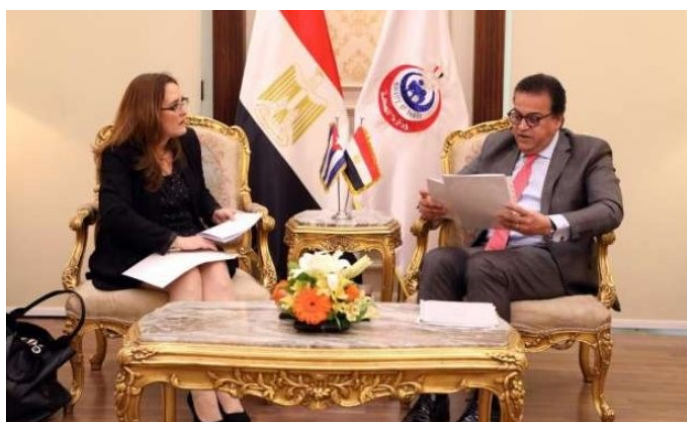
18 abr. Acting Minister of Health and Population Khaled Abdel Ghaffar received Subday Cuban Ambassador to Egypt Tania Aguiar Fernandez to examine chances of cooperation in the field of vaccine production.

The minister and the ambassador also discussed areas of possible cooperation in the sectors of healthcare and scientific research. Abdel Ghaffar noted that all types of vaccines can be produced in Egypt by VACSERA factories.

The Ministry of Health and Population announced in February drafting a proposal to produce AstraZeneca anti-COVID-19 vaccine locally through VACSERA, which already produces Sinovac doses.

The announcement followed the acting minister's meeting with AstraZeneca regional director for the Middle East and Africa, Belin Inciso to discuss cooperation in the transfer of vaccine manufacturing technology.

That is in light of Egypt's selection as one of the recipients of the mRNA technology used in the manufacturing of vaccines and other important medical drugs to confront many incurable diseases.



Meeting of Acting Minister of Health and Population Khaled Abdel Ghaffar and Cuban Ambassador to Egypt Tania Aguiar Fernandez on April 17, 2022. Press Photo

Abdel Ghaffar had announced earlier in February that Egypt produced over 30 million doses of Sinovac/VACSERA COVID-19 vaccine.

The minister also held a press conference in November to mark the launch of clinical trials of the Egypt-developed anti-COVID-19 vaccine dubbed "Covivax."

Egypt has started its vaccination campaign in January this year, during which around 25 million citizens have been vaccinated against the novel virus.

The country has received most types of vaccines including, Sinopharm, Sinovac, Sputnik V, AstraZeneca, Moderna, Pfizer, and Johnson & Johnson. It is also producing Sinovac doses.

Egypt also targets fellow African states and not just the local market. The World Health Organization (WHO) estimated in January 2021 that anti-COVID-19 would be available on a large scale in Africa by 2023 given that most purchases are made by high-income countries.

Yet, as indicated on the WHO website, "64 higher income economies have joined the COVAX Facility, a global initiative that brings together governments and manufacturers to ensure eventual COVID-19 vaccines reach those in greatest need, whoever they are and wherever they live."

Fuente: Egypt Today. Disponible en <https://cutt.ly/KGuzssV>

Moderna's combination COVID booster appears more protective against variants, company study finds

Apr 19. A booster shot that includes the original Moderna vaccine plus one directed at the beta variant protects well against a range of coronavirus variants, a new company study has found.

Concerned that the original vaccine may lose protectiveness as the SARS-CoV-2 virus evolves, companies have been testing different vaccine versions to see which is most effective. The Moderna study is the first to be released on a combination booster.

The company combined its original vaccine with one designed to go after the beta variant. Although beta is no longer circulating, it has some changes that are similar to the omicron variants that now dominate the world.

The 50-microgram dose is the same as a current booster dose and appeared just as safe, the company said in a news release. The study included nearly 900 volunteers, 300 of whom received the 50-microgram dose. The rest received twice that amount, which was considered unnecessary.

Volunteers who received the new, experimental booster produced two times more antibodies against the beta, delta and omicron variants one month after their shot than people did a month after receiving the original vaccine, the company said. At six months after administration, the new booster remained more effective against beta and omicron.



The company also is testing a booster version that targets both the original variant and omicron specifically, which it hopes to have available this fall, Moderna CEO Stéphane Bancel said in a statement. Data on that version should be available by summer, he said.

Any new booster would have to be authorized by federal regulatory agencies.

The current Moderna vaccine was approved by the Food and Drug Administration for use in adults. A vaccine made by Pfizer-BioNTech has been FDA-approved for those 16 and older and authorized in children as young as 5.

The original boosters from both companies are authorized for use in adults, and Pfizer-BioNTech's for children as young as 12. Adults 50 and up may receive a second booster dose.

Both companies have been working for more than a year to develop boosters that are targeted against variants, hoping they will be more protective, just as a flu vaccine is targeted every year to the circulating strains.

Beta was circulating in early 2021 when both companies launched their efforts. Delta didn't appear until last summer, and omicron emerged late last year.

Moderna's experimental booster is considered "bivalent" because it goes after two variants of the virus. It is called mRNA-1273.211.

"We are pleased with these data for our first bivalent booster candidate, mRNA-1273.211," Bancel said in a statement. "We believe that these results validate our bivalent strategy."

"We believe that a bivalent booster vaccine, if authorized, would create a new tool as we continue to respond to emerging variants."

Fuente: Yahoo News. Disponible en <https://cutt.ly/nGuTtQo>

Vacuna Pfizer COVID: qué es la linfadenopatía, uno de los tres nuevos efectos secundarios más preocupantes

21 abr. Un informe sanitario alertó por nuevos efectos secundarios del suero contra el coronavirus. Qué trastornos son los notificados con más frecuencia.

A más de dos años del inicio de la pandemia, y con más de 500 millones de infectados a nivel global desde la irrupción del coronavirus, los casos comienzan a bajar lentamente tras el impacto de la variante Ómicron en diciembre y enero, aunque la preocupación se renueva por el brote de contagios desatado en China.



Una de las razones del descenso de casos de Covid-19 tiene que ver con la vacunación: a nivel global se llevan administradas 11.470 millones de dosis según datos del sitio OurWorldInData y el 65% de la población mundial recibió al menos una dosis del suero.

Las vacunas de Oxford-AstraZeneca y Pfizer-BioNTech son las más empleadas. La primera se administra en 183 países mientras que la segunda se coloca en 158 naciones, según datos del sitio de estadísticas Statista.

Linfadenopatía: el efecto secundario de Pfizer

En este contexto, un reporte sanitario identificó a la linfadenopatía (o inflamación de los ganglios linfáticos) y la pirexia (estado febril) como los efectos secundarios más repetidos tras la tercera dosis de las vacunas contra el coronavirus.

El 14º Informe de Farmacovigilancia sobre Vacunas COVID-19, del Ministerio de Sanidad de España, recopiló los principales efectos adversos que sufren las personas que recibieron la tercera dosis de los sueros de Pfizer y Moderna (Comirnaty y Spikevax).

En el caso de Moderna, la pirexia es el síntoma más repetido tras el tercer pinchazo con un 34% de los casos estudiados. Por otro lado, entre la población del estudio vacunada con Pfizer, el efecto más repetido es la linfadenopatía. La definición de este síntoma es enfermedad o inflamación de los ganglios linfáticos, los más visibles se encuentran en axilas, ingles y cuello.

Los trastornos generales como fiebre o malestar son los notificados con más frecuencia, seguidos de los trastornos del sistema nervioso (mayoritariamente, cefaleas, síncope y mareo) y del sistema musculoesquelético (mialgia y artralgia). Lo más frecuente es que desaparezcan a las 48 horas de haber recibido la vacuna.

Otros efectos secundarios tras la tercera dosis de Pfizer

Después de la linfadenopatía, las reacciones adversas más notificadas tras el tercer pinchazo de la vacuna de Pfizer son:

- ⇒ Pirexia (20%).
- ⇒ Cefalea (10%).
- ⇒ Mialgia (8%).
- ⇒ Malestar (7%).
- ⇒ Fatiga (6%)
- ⇒ Dolor en la zona de vacunación (4%)
- ⇒ Escalofríos (4%)
- ⇒ Artralgia (3%)
- ⇒ Dolor Axilar (3%)

Efectos secundarios tras las tercera dosis de Moderna

Por otro lado, aparte de la fiebre o pirexia, los síntomas más frecuentes registrados en el estudio tras la tercera dosis de la vacuna de Moderna son:

- ⇒ Cefalea (18%)
- ⇒ Linfadenopatía (16%)
- ⇒ Mialgia (12%)
- ⇒ Malestar (9%)
- ⇒ Dolor en la zona de vacunación (9%)

- ⇒ Náuseas (8%)
- ⇒ Fatiga (8%)
- ⇒ Artralgia (7%)
- ⇒ Escalofríos (6%)

Fuente: Cronista. Disponible en <https://cutt.ly/9GuULC0>



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Estrategia de búsqueda: *Vaccine in the title or abstract AND 20220411:20220421 as the publication date 60 records.*

1. [WO/2022/081905](#) VIRAL VACCINE COMPOSITIONS FOR INOCULATING A SUBJECT AGAINST A CORONAVIRUS, AN INFLUENZA VIRUS, OR BOTH
WO - 21.04.2022

Clasificación Internacional [A61P 31/12](#) N° de solicitud PCT/US2021/055077 Solicitante ATOSSA THERAPEUTICS, INC. Inventor/a QUAY, Steven C.

Described herein are viral vaccine compositions for inoculating a subject against a coronavirus, an influenza virus, or both. The viral vaccine compositions may contain coronavirus antigens, influenza virus antigens, or both to elicit a sustained immune response in the subject. A viral vaccine may be formulated for nasal delivery. Also described herein are methods of administering viral vaccine compositions to a subject to prevent a coronavirus infection, influenza, or both. The viral vaccine compositions may be administered intranasally and may elicit an antigen-specific mucosal immune response in the subject.

2. [WO/2022/081042](#) VACCINE COMPOSITION AGAINST CORONAVIRUS COVID-19 INFECTION
WO - 21.04.2022

Clasificación Internacional [A61K 39/215](#) N° de solicitud PCT/RU2021/000417 Solicitante FEDERAL'NOE BYUDZHETNOE UCHREZHDENIE NAUKI "GOSUDARSTVENNY NAUCHNY TSENTR VIRUSOLOGII I BIOTEKHNOLOGII "VEKTOR" FEDERAL'NOY SLUZHBY PO NADZORY V SFERE ZASHCHITY PRAV POTREBITELEI I BLAGOPOLUCHIA CHELOVEKA Inventor/a RYZHIKOV, Aleksandr Borisovich

The claimed invention relates to producing a vaccine against coronavirus COVID-19 infection and can be used for prophylaxis of this disease. The technical result of the invention consists in obtaining peptide immunogens and a vaccine composition, which contain a minimum of the essential antigen determinants that can form a specific immune response and induce protective immunity against Covid-19. The technical result is achieved by providing a vaccine composition against coronavirus COVID-19 infection, which comprises, accordingly: peptide immunogens having amino acid sequences of SEQ ID NO: 1, SEQ ID NO: 2 and SEQ ID NO: 3 or SEQ ID NO: 1 and SEQ ID NO: 4. Said peptide immunogens are covalently bonded by way of forming conjugates with a protein-carrier for which, in the vaccine composition, a chimeric recombinant protein MBP-6xHis-N_nCoV-2019 comprising coronavirus SARS Cov-2 N-protein

with an amino acid sequence of SEQ ID NO: 5 is used; and a mixture of the aforementioned conjugates of the peptide immunogens and the protein-carrier is sorbed on a pharmaceutically acceptable adjuvant.

3. [WO/2022/073254](#) METHOD FOR PREPARING NANOSIZED TUMOR VACCINE

WO - 14.04.2022

Clasificación Internacional [A61K 39/385](#) N° de solicitud PCT/CN2020/122251 Solicitante JIANGSU CELL TECH MEDICAL RESEARCH Inventor/a LE, Long

A method for preparing a tumor vaccine by nanosizing Flagellin and a cytokine and/or a cytokine inducer and combining same with a tumor antigen in vitro. The tumor vaccine prepared by the method has the following features: after nanosizing, Flagellin and the cytokine and/or the cytokine inducer have the characteristics of targeting and sustained release; Flagellin and the cytokine and/or the cytokine inducer are respectively used as a second signal and a third signal for T cell activation, and can activate non-specific immunity more strongly; Flagellin can enhance the antigen presentation capability of APC, and enhance specific immunity; and the tumor vaccine is widely suitable for preventing recurrence and preventing metastasis and treatment of various types of tumors, and has a good application prospect.

4. [20220111035](#) RSV F/G CHIMERIC VACCINE

US - 14.04.2022

Clasificación Internacional [A61K 39/155](#) N° de solicitud 17431833 Solicitante KM Biologics Co., Ltd. Inventor/a Ryo YAMAUE

A novel vaccine antigen for prevention of Respiratory Syncytial Virus (RSV) infection is created which surpasses conventional vaccines comprising as an antigen RSV F protein alone in view of efficacy and/or safety. A vaccine is prepared which comprises as an antigen a RSV F/G chimeric protein wherein a portion of RSV F protein as a basic structure is replaced with a whole or a portion of Conserved Central Domain sequence of RSV G protein or wherein a whole or a portion of Conserved Central Domain sequence of RSV G is added to the basic structure. As a result of assessment of both efficacy and safety, a vaccine comprising as an antigen the F/G chimeric protein of the present invention confirmed to be more excellent than a vaccine comprising as an antigen RSV F protein alone in view of efficacy and/or safety.

5. [20220111036](#) METHOD FOR DEFINING A PERSONALIZED VACCINE AGAINST HIV/AIDS

US - 14.04.2022

Clasificación Internacional [A61K 39/21](#) N° de solicitud 17547350 Solicitante Ricardo Diaz Inventor/a Ricardo Diaz

A novel approach to the development of a personalized vaccine. This approach is based on: A) sequencing of the gag gene from an HIV-infected individual treated with antiretroviral therapy; B) sequencing of the HLA alleles of the same individual; C) selecting the epitopes recognized by the individual's own HLA Class I within the highly-conserved Gag₂₅₆₋₃₇₇, Gag₁₄₇₋₁₆₉ and/or Gag₂₂₅₋₂₅₁ amino acid sequences. An original algorithm that designs the target peptide for the vaccine starting from viral and HLA sequences of an individual with HIV/AIDS, forms the core of the present invention. The original algorithm makes extensive use of existing open-source software for protein design. The peptides designed in this manner and accordingly synthesized may be exploited as a therapeutic vaccine against HIV/AIDS. Vehicles for such peptides may be an individual's own dendritic cells pulsed with the peptide combination or a specific viral or DNA vector leading to intracellular expression of the viral peptides. The present vaccine approach may contribute to control of viremia once antiretroviral therapies are suspended.

6. [WO/2022/079439](#) NOVEL TRYPANOSOMAL VACCINE

WO - 21.04.2022

Clasificación Internacional [A61K 39/005](#) N° de solicitud PCT/GB2021/052666 Solicitante GENOME RESEARCH LIMITED Inventor/a WRIGHT, Gavin

The present invention relates to a trypanosomal vaccine comprising an FLA1 binding protein, as well as to pharmaceutical compositions comprising said vaccine and their uses in vaccination to prevent or treat trypanosomal infection in a mammal. Thus, also provided are a method of preventing or treating trypanosomal infection comprising administering said vaccine and a kit of parts comprising a medical instrument or other means for administering.

7. [WO/2022/081707](#) SARS-COV-2 DNA VACCINE AND METHOD OF ADMINISTERING THEREOF
WO - 21.04.2022

Clasificación Internacional [A61K 39/225](#) N° de solicitud PCT/US2021/054784 Solicitante THE GOVERNMENT OF THE UNITED STATES, AS REPRESENTED BY THE SECRETARY OF THE ARMY Inventor/a HOOPER, Jay W.

The current disclosure provides a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike-based DNA vaccine capable of eliciting an immune response to a SARS-CoV-2 in a human subject upon administration. Also provided is a method of eliciting an immune response to a SARS-CoV-2 in a human subject by administering the SARS-CoV-2 spike-based DNA vaccine, for example, intramuscularly using a jet injector.

8. [3981782](#) VERKÜRZTES ROTAVIRUS-P4-PROTEIN UND ANWENDUNG DAVON
EP - 13.04.2022

Clasificación Internacional [C07K 14/14](#) N° de solicitud 21194967 Solicitante UNIV XIAMEN Inventor/a GE SHENGXIANG

The invention relates to a truncated rotavirus VP4 protein, a sequence encoding the same, a method for preparing the same, and a pharmaceutical composition and a vaccine comprising the protein, wherein the protein, the pharmaceutical composition and the vaccine are useful for preventing, alleviating or treating rotavirus infection and a disease caused by rotavirus infection, such as rotavirus gastroenteritis and diarrhea. The invention further relates to use of the protein in the manufacture of a pharmaceutical composition or a vaccine for preventing, alleviating or treating rotavirus infection and a disease caused by rotavirus infection, such as rotavirus gastroenteritis and diarrhea.

9. [WO/2022/073528](#) CONJUGADOS COVALENTES DEL DOMINIO DE UNIÓN AL RECEPTOR DEL VIRUS SARS-COV-2 Y UNA PROTEÍNA PORTADORA Y LAS COMPOSICIONES VACUNALES QUE LOS CONTIENEN
WO - 14.04.2022

Clasificación Internacional [A61K 47/64](#) N° de solicitud PCT/CU2021/050009 Solicitante INSTITUTO FINLAY DE VACUNAS Inventor/a VALDÉS BALBÍN, Yury

La presente invención se relaciona con la biotecnología, específicamente con el campo de la salud humana. Describe conjugados covalentes del dominio de unión al receptor del virus SARS-CoV-2 con una proteína portadora, el método para obtener esos conjugados y las composiciones vacunales que los contienen. Las composiciones vacunales que se describen en la presente invención son útiles en la prevención de la infección por el virus SARS-CoV-2 ya que inducen una potente respuesta de anticuerpos neutralizantes.

10. [20220111023](#) NEOEPITOPE RNA CANCER VACCINE
US - 14.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17558037 Solicitante VACCIBODY AS Inventor/a Agnete Brunsvik Fredriksen

The present invention relates to an anticancer neoepitope composition comprising polynucleotides or polypeptides, methods of treatment of cancer wherein such an anticancer vaccine is used as well as

methods for producing the vaccine. The anticancer neoepitope composition comprising a DNA polynucleotide comprising a nucleotide sequence encoding an antigenic unit comprising from 2 to 50 antigenic subunits, each subunit comprising at least a part of a cancer neoepitope sequence and a linker and a terminal antigenic subunit comprising at least a part of a cancer neoepitope sequence.

11. [WO/2022/077593](#) SARS-COV-2 CORONAVIRUS VACCINE AND PREPARATION METHOD THEREFOR

WO - 21.04.2022

Clasificación Internacional [A61K 39/215](#) N° de solicitud PCT/CN2020/125329 Solicitante GUANGZHOU DOUBBLE BIOPRODUCT CO., LTD. Inventor/a HUANG, Wenlin

Provided are a SARS-CoV-2 coronavirus vaccine and a preparation method therefor. Codon-optimization is performed on an S gene of a SARS-CoV-2 coronavirus, and truncated and mutant sequences of the S gene are introduced into a secretory deficient adenovirus vector, and the adenovirus is packaged to obtain a corresponding recombinant adenovirus. The recombinant adenovirus can express SARS-CoV-2 virus-related proteins in vivo, and complete processing, folding, glycosylation, and other modifications, while basically maintaining the natural conformation of an S protein, and has features such as a high biological activity, a long half-life, and a durable immunogenicity. The deficient adenovirus vector carrying an secretory peptide enables the recombinant adenovirus vaccine to be secreted to the outside of a cell after being expressed in vivo, thereby activating humoral immunity.

12. [WO/2022/073360](#) NOVEL CORONAVIRUS VACCINE CONSTRUCTION METHOD AND USE THEREOF

WO - 14.04.2022

Clasificación Internacional [A61K 39/215](#) N° de solicitud PCT/CN2021/101458 Solicitante GUANGZHOU DONGSHENG BIOTECH CO., LTD. Inventor/a LIU, Yuandong

Provided is a novel coronavirus vaccine construction method and a use thereof, comprising: (a) carrying out amino acid substitution on a wild-type novel coronavirus S protein receptor binding domain to obtain a candidate S-RBD sequence, wherein the candidate S-RBD sequence has a lower isoelectric point than the wild-type novel coronavirus S protein receptor binding domain; (b) determining a target S-RBD sequence based on the candidate S-RBD sequence and the three-dimensional structure of the wild-type novel coronavirus S protein receptor binding domain; and (c) constructing the novel coronavirus vaccine based on the target S-RBD sequence.

13. [WO/2022/075955](#) COVID-19 VIRUS VACCINE

WO - 14.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/TR2021/051022 Solicitante MIRACLE LABS İLAÇ SANAYİ VE TİCARET ANONİM ŞİRKETİ Inventor/a HOWARD, Heba

It includes a description of the vaccine that provides protection against and is used in the treatment of and healing the virus with sickening and even fatal effects on human health. The vaccine is primarily effective against the respiratory diseases caused by the virus SARS-CoV-2 of the family Coronaviridae and genus Betacoronavirus. It is different from the medicines and methods currently used in the treatment of symptoms. It both provides protection against the virus pathogenicity and heals those who have caught the disease due to the virus.

14. [3981426](#) ADJUVANS AUF DER BASIS VON PEPTIDNUKLEINSÄURE

EP - 13.04.2022

Clasificación Internacional [A61K 39/39](#) N° de solicitud 20817766 Solicitante DENKA COMPANY LTD Inventor/a MITSUMATA RYOTARO

Provided are an adjuvant useful for preparing a vaccine having high efficacy and high safety, and a vaccine composition comprising the adjuvant. The adjuvant comprises a peptide nucleic acid to which a cell penetrating peptide is bound.

15. [WO/2022/081604](#) COMPOSITION AND METHOD FOR TREATING CANCER USING A VACCINE AS A FIRST THERAPEUTIC ACTIVE INGREDIENT IN COMBINATION WITH A SECOND ACTIVE INGREDIENT

WO - 21.04.2022

Clasificación Internacional [A61K 38/19](#) N° de solicitud PCT/US2021/054622 Solicitante HPV VAX, LLC Inventor/a IOANNIDES, Tim

A method for treating or reducing the incidence of recurrence of cancer, benign tumors, or HPV-associated lesions, including skin cancer, and particularly squamous cell carcinoma (SCC and basal-cell carcinoma, by administering to a patient one or more doses of HPV recombinant vaccine as a first active therapeutic agent in combination with a second active therapeutic agent administered concomitantly or as a fixed-dose combination composition.

16. [20220112248](#) MULTIVALENT HIV VACCINE BOOST COMPOSITIONS AND METHODS OF USE
US - 14.04.2022

Clasificación Internacional [C07K 14/16](#) N° de solicitud 17409574 Solicitante GeoVax, Inc. Inventor/a Harriet Robinson

Compositions and methods of use are provided to boost a primed immune response to HIV. More specifically, the present invention relates to vaccine compositions comprising an HIV-protein boost or an MVA-expressed Env protein and methods of use. Exemplary HIV proteins for protein boosts include proteins such as gp120 proteins B.63521A11mutC and full-length single chain (FLSC), which has been modified to stabilize a CD4-induced Env structure. Exemplary MVAs expressing secreted Methods of administration and dosing regimens are also provided.

17. [WO/2022/078732](#) HIGH DOSE SHIGELLA VACCINE PREPARATION

WO - 21.04.2022

Clasificación Internacional [A61K 39/](#) N° de solicitud PCT/EP2021/076378 Solicitante EVELIQUIRE BIOTECHNOLOGIES GMBH Inventor/a NAGY, Eszter

A Shigella vaccine preparation comprising 10E8-10E12 CFU of a live, genetically attenuated Shigella flexneri strain that comprises a chromosomal deletion of setBA and which is non-invasive as determined by the Sereny test and an in vitro invasion assay using HeLa cells, wherein the strain comprises an endogenous invasion plasmid that is genetically engineered to incorporate a heterologous expression construct expressing a pathogen-specific antigen.

18. [WO/2022/080414](#) TEMPERATURE-SENSITIVE BETACORONAVIRUS STRAIN AND VACCINE
WO - 21.04.2022

Clasificación Internacional [C12N 15/50](#) N° de solicitud PCT/JP2021/037903 Solicitante THE RESEARCH FOUNDATION FOR MICROBIAL DISEASES OF OSAKA UNIVERSITY Inventor/a OKAMURA, Shinya
Provided is a strain that is effective as an active ingredient of a vaccine against a betacoronavirus. This SARS-CoV-2 virus includes a non-structural protein that has the following responsible mutation(s): a mutation in the amino acid residue corresponding to the L of position 445 of SEQ ID NO: 1 in NSP3; a mutation in the amino acid residues corresponding to the G of position 248 and the G of position 416 of SEQ ID NO: 2 in NSP14; and/or a mutation in the amino acid residue corresponding to the V of position 67 of SEQ ID NO: 3 in NSP16.

19. [3980058](#) STABILISIERTER FLÜSSIGER LEBENDIMPFSTOFF
EP - 13.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud 20750016 Solicitante BOEHRINGER INGELHEIM ANIMAL HEALTH USA INC Inventor/a GENIN NOEL YVES HENRI JEAN

The present invention relates generally to the fields of immunology and vaccine technology. More specifically, the present invention relates to stabilized liquid immunogenic compositions and vaccines having a live attenuated viral antigen, and methods of using the same. The live attenuated viral antigen can be a live peste des petits ruminants (PPR) virus.

20. [WO/2022/079701](#) UNIVERSAL VACCINATION ONLINE CERTIFICATE ISSUANCE SYSTEM
WO - 21.04.2022

Clasificación Internacional [G06F 19/00](#) N° de solicitud PCT/IB2021/059638 Solicitante PROPHASE LABS, INC. Inventor/a ZORMATI, Bedis

A vaccination and immunization system designed to securely track administration of a vaccine for issuance of a related electronically-transmittable universal vaccination certificate for ensuring the safe and secure data collection of individuals being vaccinated and the reliable and trustworthy issuance of their resulting secured universal vaccine certificate, wherein an encrypted and exportable vaccination certificate (EEVC) is generated based on the vaccination data being input. The vaccination data is input by a medical service provider (MSP) whose credentials are validated.

21. [WO/2022/080413](#) BETA CORONAVIRUS COLD ACCLIMATIZED STRAIN AND VACCINE
WO - 21.04.2022

Clasificación Internacional [C12N 15/50](#) N° de solicitud PCT/JP2021/037902 Solicitante THE RESEARCH FOUNDATION FOR MICROBIAL DISEASES OF OSAKA UNIVERSITY Inventor/a OKAMURA, Shinya

A strain that is effective as the active component of a vaccine against the beta coronavirus is provided. A SARS-CoV-2 virus containing a structural protein and/or nonstructural protein having the following mutations: the amino acid residue mutation in NSP3, corresponding to V at position 404, L at position 445, K at position 1792 and/or D at position 1832 in SEQ ID No. 1; the amino acid residue mutation in NSP14, corresponding to G at position 248, G at position 416, and/or A at position 504 in SEQ ID No. 2; the amino acid residue mutation in NSP16, corresponding to V at position 67 in SEQ ID No. 3; the amino acid residue mutation in the spike, corresponding to L at position 54, T at position 739 and/or A at position 879 in SEQ ID No. 4; the amino acid residue mutation in the envelope, corresponding to L at position 28 in SEQ ID No. 5; and/or, the amino acid residue mutation in the nucleocapsid, corresponding to S at position 2 in SEQ ID No. 6;

22. [3980445](#) MDBK-IRF3/IRF7-KNOCKOUT-MUTANTENZELLE UND DEREN VERWENDUNG ZUR IMPFSTOFFPRODUKTION
EP - 13.04.2022

Clasificación Internacional [C07K 14/47](#) N° de solicitud 20729786 Solicitante INTERVET INT BV Inventor/a LANGEREIS MARTIJN ALEXANDER

The present invention pertains to a Madin-Darby bovine kidney (MDBK) cell, wherein the interferon regulatory factors (IRF) IRF3 and/or IRF7 encoding genes are functionally inactivated. The invention also pertains to a cell culture comprising the MDBK cell, use of the MDBK cell culture, a method for the production of a virus using the cell and a vaccine prepared by using the cell.

23. [20220112246](#) CONFORMATIONAL EPIOTOPE OF HEPATITIS B SURFACE ANTIGEN AND ANTIBODY BINDING SPECIFICALLY THERETO
US - 14.04.2022

Clasificación Internacional [C07K 14/005](#) N° de solicitud 17417603 Solicitante GREEN CROSS CORPORATION Inventor/a Jung-Hwan KIM

A specific conformational epitope of a hepatitis B surface antigen and a hepatitis B neutralizing antibody binding thereto are disclosed. The epitope has a specific conformational structure. In addition, the

conformational epitope does not contain the 'a' determinant that may generate an escape mutation upon administration of conventional vaccines or HBIg. Thus, an antibody capable of binding to the epitope is highly unlikely to allow the emergence of a vaccine escape mutation, which is caused by conventional vaccines, and as such, can retain a sustained effect. Therefore, such an antibody or a vaccine composition can find effective applications in the prevention and treatment of HBV, having great economic value.

24. [2022202087](#) Methods for producing virus for vaccine production

AU - 14.04.2022

Clasificación Internacional N° de solicitud 2022202087 Solicitante Takeda Vaccines, Inc. Inventor/a RAO, Raman

25. [3980055](#) IMMUNOGENES PNEUMOKOKKEN-POLYSACCHARID-PROTEIN-KONJUGAT DES SEROTYPS 35B UND KONJUGATIONSVERFAHREN ZU SEINER HERSTELLUNG

EP - 13.04.2022

Clasificación Internacional [A61K 39/02](#) N° de solicitud 20819583 Solicitante MERCK SHARP & DOHME Inventor/a HE JIAN

The present invention provides a process improvement related to the conjugation of capsular polysaccharides from *Streptococcus pneumoniae* (*S. pneumoniae*) serotype 35B to a carrier protein. The serotype 35B polysaccharide-protein conjugate, prepared by the disclosed process, is, among other things, more immunogenic than similar conjugates made by prior art methods. *S. pneumoniae* serotype 35B polysaccharide-protein conjugates prepared using the processes of the invention can be included in multivalent pneumococcal conjugate vaccine compositions.

26. [WO/2022/079029](#) SARS-COV-2 VACCINES

WO - 21.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/EP2021/078178 Solicitante R.G.C.C. HOLDINGS AG Inventor/a PAPASOTIRIOU, Ioannis

The present invention concerns a pharmaceutical product for use as a vaccine against a viral disease in a human or animal subject, comprising three compositions comprising activated, autologous dendritic cells, loaded with three different SARS-CoV-2 peptides, to be administered in three separate doses sequentially to the human or animal subject.

27. [WO/2022/081954](#) WW-DOMAIN-ACTIVATED EXTRACELLULAR VESICLES TARGETING CORONAVIRUSES

WO - 21.04.2022

Clasificación Internacional [A61K 39/39](#) N° de solicitud PCT/US2021/055154 Solicitante PRESIDENT AND FELLOWS OF HARVARD COLLEGE Inventor/a LU, Quan

Disclosed herein are methods, systems, compositions and strategies for the creation and use WW-domain- Activated Extracellular Vesicles, or WAEVs for presenting SARS-CoV-2 antigen domains, for example the SARS-CoV-2 M protein, the SARS-CoV-2 E protein, or the SARS-CoV-2 S protein. These WAEVs can be harnessed to deliver and present SARS-CoV-2 antigens useful for vaccine development.

28. [20220111037](#) SARS-COV-2 VACCINES

US - 14.04.2022

Clasificación Internacional [A61K 39/215](#) N° de solicitud 17401584 Solicitante R.G.C.C. Holdings AG Inventor/a Ioannis PAPASOTIRIOU

A pharmaceutical product for use as a vaccine against a viral disease in a human or animal subject, comprising three compositions comprising activated, autologous dendritic cells, loaded with three different SARS-CoV2 peptides, to be administered in three separate doses sequentially to the human or animal subject.

29. [3980449](#) TGF-BETA-IMPFSTOFF

EP - 13.04.2022

Clasificación Internacional [C07K 14/495](#) N° de solicitud 20731430 Solicitante IO BIOTECH APS

Inventor/a ANDERSEN MADSEN HALD

The present invention relates to novel polypeptides derived from TGFβ1. The invention also concerns uses of the polypeptides, polynucleotides encoding the peptides and uses thereof, and compositions comprising the polypeptides and uses thereof.

30. [WO/2022/076816](#) MULTIPLE VIRAL ANTIGEN COVID VACCINE AND THERAPEUTIC

WO - 14.04.2022

Clasificación Internacional [C07K 14/08](#) N° de solicitud PCT/US2021/054167 Solicitante HAMIDA, Heba

Inventor/a HAMIDA, Heba

A composition for treating or preventing COVID-19 infection is described. The composition includes attenuated Measles virus particles; attenuated Mumps virus particles; attenuated Rubella II virus particles; scorpion antivenom; and a pharmaceutically acceptable carrier. The composition can be used in a method of treating COVID-19 infection in a subject, and can also be used in a method of vaccinating a subject to decrease the risk or severity of infection by COVID-19.

31. [3979814](#) VERWENDUNG VON BENZOESÄURE UND ÄTHERISCHEN ÖLVERBINDUNGEN ZUR VERBESSERUNG DER WACHSTUMSLEISTUNG

EP - 13.04.2022

Clasificación Internacional [A23K 50/75](#) N° de solicitud 20730255 Solicitante DSM IP ASSETS BV

Inventor/a LIU HONG

This invention relates to a composition comprising benzoic acid, derivatives or metabolites thereof, optionally in combination with a mixture of at least one essential oil compounds selected from the group consisting of thymol, eugenol and piperine, for improving growth performance of an animal subjected to coccidiosis vaccine challenge, and use thereof.

32. [WO/2022/074061](#) CHOLERA VACCINE FORMULATION

WO - 14.04.2022

Clasificación Internacional [A61K 39/02](#) N° de solicitud PCT/EP2021/077576 Solicitante VALNEVA

SWEDEN AB Inventor/a SCREPANTI-SUNDQUIST, Valentina

Described herein are dry compositions that can be stored at ambient temperature without major loss of potency.

33. [WO/2022/081957](#) WW-DOMAIN-ACTIVATED EXTRACELLULAR VESICLES TARGETING HIV

WO - 21.04.2022

Clasificación Internacional [A61K 38/00](#) N° de solicitud PCT/US2021/055158 Solicitante PRESIDENT AND FELLOWS OF HARVARD COLLEGE Inventor/a LU, Quan

Disclosed herein are methods, systems, compositions and strategies for the creation and use WW-domain-Activated Extracellular Vesicles (WAEVs) for presenting HIV antigen domains. These WAEVs can be harnessed to deliver and present HIV antigens useful for vaccine development. Specifically, the disclosure provides a fusion protein comprising: (a) a WW-containing domain; (b) a transmembrane domain; and (c) an extracellular domain, wherein the extracellular domain is an HIV antigen domain. Further provided are sequences of each domain as well as methods of producing and using the fusion protein.

34. [WO/2022/081987](#) WW-DOMAIN-ACTIVATED EXTRACELLULAR VESICLES

WO - 21.04.2022

Clasificación Internacional [A61K 38/00](#) N° de solicitud PCT/US2021/055203 Solicitante PRESIDENT AND FELLOWS OF HARVARD COLLEGE Inventor/a LU, Quan

Disclosed herein are methods, systems, compositions and strategies for the creation and use WW-domain- Activated Extracellular Vesicles, or WAEVs. These WAEVs can be harnessed to deliver and present viral or bacterial antigens useful for vaccine development; to display homing molecules for targeted delivery of therapeutic molecules to specific cells or tissues; and for packaging and delivery of therapeutic molecules via interactions with the WW domains.

35. [20220110987](#) MULTIPLE VIRAL ANTIGEN COVID VACCINE AND THERAPEUTIC

US - 14.04.2022

Clasificación Internacional [A61K 35/76](#) N° de solicitud 17497295 Solicitante Heba Hamida Inventor/a Heba Hamida

A composition for treating or preventing COVID-19 infection is described. The composition includes attenuated Measles virus particles; attenuated Mumps virus particles; attenuated Rubella II virus particles; scorpion antivenom; and a pharmaceutically acceptable carrier. The composition can be used in a method of treating COVID-19 infection in a subject, and can also be used in a method of vaccinating a subject to decrease the risk or severity of infection by COVID-19.

36. [20220111025](#) VACCINE

US - 14.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17645741 Solicitante Treos Bio Limited Inventor/a Julianna Lisziewicz

The disclosure relates to polypeptides and pharmaceutical compositions comprising polypeptides that find use in the prevention or treatment of cancer, in particular breast cancer, ovarian cancer and colorectal cancer. The disclosure also relates to methods of inducing a cytotoxic T cell response in a subject or treating cancer by administering pharmaceutical compositions comprising the peptides, and companion diagnostic methods of identifying subjects for treatment. The peptides comprise T cell epitopes that are immunogenic in a high percentage of patients.

37. [20220111024](#) VACCINE

US - 14.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17645737 Solicitante Treos Bio Limited Inventor/a Julianna Lisziewicz

The disclosure relates to polypeptides and pharmaceutical compositions comprising polypeptides that find use in the prevention or treatment of cancer, in particular breast cancer, ovarian cancer and colorectal cancer. The disclosure also relates to methods of inducing a cytotoxic T cell response in a subject or treating cancer by administering pharmaceutical compositions comprising the peptides, and companion diagnostic methods of identifying subjects for treatment. The peptides comprise T cell epitopes that are immunogenic in a high percentage of patients.

38. [WO/2022/079175](#) COMBINATION OF A STING AGONIST AND A COMPLEX COMPRISING A CELL PENETRATING PEPTIDE, A CARGO AND A TLR PEPTIDE AGONIST

WO - 21.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/EP2021/078462 Solicitante BOEHRINGER INGELHEIM INTERNATIONAL GMBH Inventor/a ROSSI, Matteo

The present invention provides a combination of an agonist of stimulator of interferon response cGAMP interactor (1) (STING) and a vaccine including specific antigens or antigenic epitopes, namely, a complex comprising a cell penetrating peptide, at least one antigen or antigenic epitope, and a TLR peptide agonist. Such a combination is particularly useful in medicine, in particular in the prevention and/or treatment of cancer. Moreover, the present invention also provides compositions, such as a pharmaceutical compositions and vaccines, which are useful, for example, in the prevention and/or treatment of cancer.

39. [3980044](#) SAPONINREINIGUNG

EP - 13.04.2022

Clasificación Internacional [A61K 36/73](#) N° de solicitud 20732141 Solicitante GLAXOSMITHKLINE BIOLOGICALS SA Inventor/a DE KESEL CARINE BERTHE GHISLAINE

Saponin extracts containing at least 88% QS-21 main peak and >3% to 10% 2018 component by UV absorbance at 214 nm, methods for making said extracts, their use as vaccine adjuvants and related aspects.

40. [WO/2022/074358](#) VACCINE COMPOSITIONS

WO - 14.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/GB2021/052485 Solicitante VIROKINE THERAPEUTICS LIMITED Inventor/a GOMPELS, Ursula Adele

A sterile pharmaceutical composition comprising one or more nucleic acid molecules comprising a plurality of immunogen coding regions which collectively encode a plurality of herpesvirus polypeptides, wherein the one or more nucleic acid molecules are capable of expressing the plurality of herpesvirus polypeptides when introduced into a vertebrate cell in an expression vector, wherein each of the plurality of immunogen coding regions has at least 90% sequence identity to a native coding region for a corresponding native full-length herpesvirus polypeptide from the same herpesvirus species, wherein the plurality of herpesvirus polypeptides are: (i) gD of herpes simplex virus 2 or herpes simplex virus 1; gE or gI of varicella zoster virus; gp350 or gp42 of Epstein Barr virus; gp42 of Epstein Barr virus, gO selected from genotypes 1-8 of human cytomegalovirus; gO of human herpesvirus 6A; gO of human herpesvirus 6B; gO of human herpesvirus 7; or K8.1(A/B) of Kaposi's sarcoma associated herpesvirus; and (ii) gB, gH and gL of the respective cognate human herpesvirus; and wherein the pharmaceutical composition is provided in a sealed sterile container for delivery.

41. [WO/2022/081750](#) IONIZABLE LIPIDS AND METHODS OF MANUFACTURE AND USE THEREOF

WO - 21.04.2022

Clasificación Internacional [A61K 31/7088](#) N° de solicitud PCT/US2021/054837 Solicitante GEORGE MASON RESEARCH FOUNDATION, INC. Inventor/a BUSCHMANN, Michael Daro

The invention encompasses novel ionizable lipids compounds and their use in lipid nanoparticles delivery systems that are useful in the delivery of nucleic acids to a mammalian subject that can be included for use, for example, as cancer vaccines, gene editing therapeutics, delivery of nucleic acid (e.g., mRNA) encoding antibodies, vaccines for infectious disease, and protein replacement therapeutics. Additionally, the invention encompasses compositions and therapeutics comprising the ionizable lipids in the lipid nanoparticles and the use of the composition and therapeutics for the preparation of a pharmaceutical composition, especially a vaccine, (e.g., for use in the prophylaxis or treatment of infectious diseases, tumor or cancer diseases, rare diseases, allergies, or autoimmune diseases). The invention encompasses methods of treatment or prophylaxis of the aforementioned diseases.

42. [WO/2022/081870](#) STABILIZED NOROVIRUS VIRUS-LIKE PARTICLES AS VACCINE IMMUNOGENS

WO - 21.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/US2021/055018 Solicitante THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES Inventor/a KWONG, Peter

Recombinant Norovirus Virus-Like Particles (VLPs) formed from recombinant Norovirus VP1 proteins, and methods of their use and production are disclosed. In several embodiments, the Recombinant Norovirus VLPs can be used to generate an immune response to Norovirus VP1 protein in a subject. In additional embodiments, an effective amount of the recombinant Norovirus VLPs can be administered to a subject in a method of inhibiting a Norovirus infection.

43. [20220112241](#) FOXM1-DERIVED PEPTIDE, AND VACCINE INCLUDING SAME

US - 14.04.2022

Clasificación Internacional [C07K 7/06](#) N° de solicitud 17559991 Solicitante OncoTherapy Science, Inc.
Inventor/a Sachiko YAMASHITA

The present invention provides FOXM1-derived epitope peptides having the ability to induce cytotoxic T cells. The present invention further provides polynucleotides encoding the peptides, antigen-presenting cells presenting the peptides, and cytotoxic T cells targeting the peptides, as well as methods of inducing the antigen-presenting cells or CTLs. The present invention also provides compositions and pharmaceutical compositions containing them as an active ingredient. Further, the present invention provides methods of treating and/or preventing cancer, and/or preventing postoperative recurrence thereof, using the peptides, polynucleotides, antigen-presenting cells, cytotoxic T cells or pharmaceutical compositions of the present invention. Methods of inducing an immune response against cancer are also provided.

44. [WO/2022/073144](#) FORMULACIÓN INMUNOGÉNICA QUE CONTIENE UNA CEPA BCG MODIFICADA QUE EXPRESA UNA PROTEÍNA DE ANDES VIRUS (ANDV) ÚTIL PARA PREVENIR Y TRATAR INFECCIONES POR VIRUS HANTA-ANDV

WO - 14.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/CL2021/050107 Solicitante PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE Inventor/a KALERGIS PARRA, Alexis

La invención se refiere a una formulación inmunogénica que contiene la cepa Bacilo Calmette- Guérin (BCG) en una concentración entre 10⁴-10⁹ bacterias, que expresa al menos una proteína o fragmento inmunogénico de Andesvirus (ANDV), en una solución tampón salina farmacéuticamente aceptable, que sirve para preparar una vacuna útil para prevenir, tratar o atenuar infecciones de ANDV. ANDV pertenece a la familia de Hantavirus y es un patógeno humano altamente virulento, que afecta anualmente a decenas de personas en Chile generando en algunos infectados un Síndrome Cardiopulmonar por Hantavirus (SCPH).

45. [WO/2022/076369](#) A FACTOR H BINDING PROTEIN B (FHBB) BASED CHIMERIC VACCINE FOR THE PREVENTION AND TREATMENT OF PERIODONTAL DISEASE

WO - 14.04.2022

Clasificación Internacional [A61K 38/16](#) N° de solicitud PCT/US2021/053511 Solicitante VIRGINIA COMMONWEALTH UNIVERSITY Inventor/a MARCONI, Richard, T.

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

46. [WO/2022/076669](#) PREFUSION-STABILIZED HMPV F PROTEINS

WO - 14.04.2022

Clasificación Internacional [A61K 39/155](#) N° de solicitud PCT/US2021/053944 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a MCLELLAN, Jason

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

47. [WO/2022/081656](#) T-CELL VACCINE FOR SARS VIRUS

WO - 21.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/US2021/054708 Solicitante THE JOHNS HOPKINS UNIVERSITY Inventor/a ROSARIO, Maxim

The disclosure is directed to a nucleic acid sequence encoding an immunogen that induces a T cell immune response against a coronavirus (e.g., SARS-CoV-2), as well as compositions comprising same and methods of inducing an immune response against a coronavirus in a mammal.

48. [3981425](#) SARS-COV-2-IMPFSTOFFE

EP - 13.04.2022

Clasificación Internacional [A61K 39/12](#) N° de solicitud 21159603 Solicitante R G C C HOLDINGS AG Inventor/a PAPASOTIRIOU IOANNIS

The present invention concerns a pharmaceutical product for use as a vaccine against a viral disease in a human or animal subject, comprising three compositions comprising activated, autologous dendritic cells, loaded with three different SARS-CoV2 peptides, to be administered in three separate doses sequentially to the human or animal subject.

49. [20220112280](#) TRANSPLANT TOLERANCE INDUCTION WITH CARBODIIMIDE TREATED TOLERIZING VACCINE

US - 14.04.2022

Clasificación Internacional [C07K 16/24](#) N° de solicitud 17229534 Solicitante Regents of the University of Minnesota Inventor/a Bernhard J. HERING

The present disclosure is related to compositions and systems for inducing immune tolerance for transplanted cells, organ, or tissues in a transplant recipient. Also provided herein are methods of making and methods of administering tolerizing vaccines/regimen or preparatory regimens.

50. [20220112266](#) NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST ESOPHAGEAL CANCER AND OTHER CANCERS

US - 14.04.2022

Clasificación Internacional [C07K 14/74](#) N° de solicitud 17553953 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.

51. [3980054](#) NEUE KONSTRUIERTE INHIBITOREN DER BILDUNG VON DICHTEN VERBINDUNGEN

EP - 13.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud 20746780 Solicitante UNIV ROCHESTER Inventor/a BENJAMIN MILLER L

The present invention relates to isolated peptides suitable for disrupting an epithelial barrier, transepithelial drug or vaccine formulations, drug delivery vehicles for delivering these formulations, and methods of using of these formulations for disrupting an epithelial barrier.

52. [20220112254](#) NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST LUNG CANCER, INCLUDING NSCLC, SCLC AND OTHER CANCERS

US - 14.04.2022

Clasificación Internacional [C07K 14/47](#) N° de solicitud 17561051 Solicitante Immatics Biotechnologies GmbH Inventor/a Colette SONG

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

53. [WO/2022/073130](#) IMMUNOGENIC SCHISTOSOMA COMPOSITIONS

WO - 14.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/CA2021/051418 Solicitante THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING/MCGILL UNIVERSITY Inventor/a NDAO, Momar

The present disclosure provides an immunogenic composition comprising an emulsion of an epitope or a nucleic acid molecule. The emulsion comprises an oil phase and a water phase. The emulsion is an oil-in-water emulsion and/or a nanoemulsion. The epitope is present on a peptide or a polypeptide derived from *Schistosoma* sp. and can optionally be glycosylated. The immunogenic composition (which can be provided as a pharmaceutical composition or as a vaccine) can be used to prevent, treat or alleviation the symptoms of a *Schistosoma* sp. infection.

54. [20220111028](#) Combination Of A STING Agonist And A Complex Comprising A Cell Penetrating Peptide, A Cargo And A TLR Peptide Agonist

US - 14.04.2022

Clasificación Internacional [A61K 39/00](#) N° de solicitud 17501155 Solicitante Boehringer Ingelheim International GmbH Inventor/a Matteo ROSSI

The present invention provides a combination of an agonist of stimulator of interferon response cGAMP interactor 1 (STING) and a vaccine including specific antigens or antigenic epitopes, namely, a complex comprising a cell penetrating peptide, at least one antigen or antigenic epitope, and a TLR peptide agonist. Such a combination is particularly useful in medicine, in particular in the prevention and/or treatment of cancer. Moreover, the present invention also provides compositions, such as a pharmaceutical compositions and vaccines, which are useful, for example, in the prevention and/or treatment of cancer.

55. [3980050](#) ? ? ? S. PNEUMONIAE ? ? ? ? VERFAHREN ZUR BEHANDLUNG VON PATIENTEN MIT EINER IMMUNOGENEN ZUSAMMENSETZUNG, DIE GEGEN DEN SEROTYP 29 SCHÜTZT

EP - 13.04.2022

Clasificación Internacional [A61K 38/16](#) N° de solicitud 20819293 Solicitante MERCK SHARP & DOHME Inventor/a HE JIAN

The present invention provides methods for treating patients by administering an immunogenic multivalent pneumococcal polysaccharide-protein conjugate vaccine which comprises a *S. pneumoniae* serotype 35B polysaccharide-protein conjugate, does not comprise a *S. pneumoniae* serotype 29 polysaccharide-protein conjugate, and provides protection against *S. pneumoniae* serotype 29.

56. [730800](#) RECOMBINANT LISTERIA VACCINE STRAINS AND METHODS OF USING THE SAME IN CANCER IMMUNOTHERAPY

NZ - 15.04.2022

Clasificación Internacional [C12N 15/74](#) N° de solicitud 730800 Solicitante THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA Inventor/a PATERSON, Yvonne

The present invention provides methods of treating, protecting against, and inducing an immune response against a human papillomavirus-associated oropharyngeal tumor or cancer, comprising the step of administering to a subject a recombinant *Listeria* strain expressing a human papillomavirus antigen.

57. [20220112253](#) NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST OVARIAN CANCER AND OTHER CANCERS

US - 14.04.2022

Clasificación Internacional [C07K 14/47](#) N° de solicitud 17514822 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.

58. [3981416](#) KOC1-ABGELEITETES PEPTID UND IMPFSTOFF DAMIT

EP - 13.04.2022

Clasificación Internacional [A61K 35/12](#) N° de solicitud 21202045 Solicitante ONCOTHERAPY SCIENCE INC Inventor/a TSUNODA TAKUYA

The present invention provides KOC1-derived epitope peptides having the ability to induce cytotoxic T cells. The present invention further provides polynucleotides encoding the peptides, antigen-presenting cells presenting the peptides, and cytotoxic T cells targeting the peptides, as well as methods of inducing the antigen-presenting cells or CTLs. The present invention also provides compositions and pharmaceutical compositions containing them as an active ingredient. Further, the present invention provides methods of treating and/or preventing cancer, and/or preventing postoperative recurrence thereof, using the peptides, polynucleotides, antigen-presenting cells, cytotoxic T cells or pharmaceutical compositions of the present invention. Methods of inducing an immune response against cancer are also provided.

59. [WO/2022/075510](#) POLYPEPTIDE FORMULATION

WO - 14.04.2022

Clasificación Internacional [C07K 7/06](#) N° de solicitud PCT/KR2020/014094 Solicitante AZOTHBIO INC. Inventor/a SHIN, Jae Min

In the present invention, a study, based on an AI-Deep-Learning technique, was conducted into COVID-19 virus structural proteins, with the purpose of activating the MHC-I immune system. A polypeptide sequence 9-14 amino acids in length was established on the basis of the immune system prediction through the AI technique. The polypeptide can remarkably activate the immune system of the human body and provides a basis of safe and effective peptide vaccine design.

60. [WO/2022/077613](#) B CELL LINEAR EPITOPE, ANTIBODY, IDENTIFICATION METHOD, AND APPLICATION OF NOVEL CORONAVIRUS S PROTEIN

WO - 21.04.2022

Clasificación Internacional [C07K 14/165](#) N° de solicitud PCT/CN2020/126206 Solicitante SHENZHEN CENTER FOR DISEASE CONTROL AND PREVENTION Inventor/a WANG, Xiaohui

The present invention is applicable to the field of biological technology, and provides a B cell linear epitope, an antibody, an identification method, and an application of a novel coronavirus S protein. The amino acid sequence of the B cell linear epitope of the S protein is as shown in SEQ ID NO. 104 or SEQ ID NO. 82. The present invention provides a novel B cell linear epitope of the novel coronavirus S protein,

which can be used to detect specific antibodies in the blood of COVID-19 patients, and can also be used to inoculate healthy people to induce the production of specific antibodies, thereby providing important antigen targets for SARS-CoV-2 vaccine design, monoclonal antibody development, and antibody detection kit development.

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

Results Search in US Patent Collection db for: (ABST/vaccine AND ISD/2022411->20220421), 10 records.

PAT. NO.	Title
1 11,305,010	Synthetic opioid vaccine
2 11,305,008	Nucleic acid based vaccine against middle east respiratory syndrome-coronavirus
3 11,305,007	Composite multi-epitope expression cassette, a recombinant virus composed thereof and application thereof
4 11,305,006	Avian influenza and fowl adenovirus type 4 bi-combined genetic engineering subunit vaccine and method for preparing the same
5 11,305,005	Methods of use of influenza vaccine for prevention of pneumonia
6 11,305,004	Compositions and methods related to ebolavirus vaccines
7 11,305,003	Zika virus chimeric polyepitope comprising non-structural proteins and its use in an immunogenic composition
8 11,305,000	Chimeric OspA genes, proteins and methods of use thereof
9 11,298,414	Cellular adjuvants for viral infection
10 11,298,380	IPSC-based vaccine as a prophylactic and therapeutic treatment for cancer

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