



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 vacunas 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.

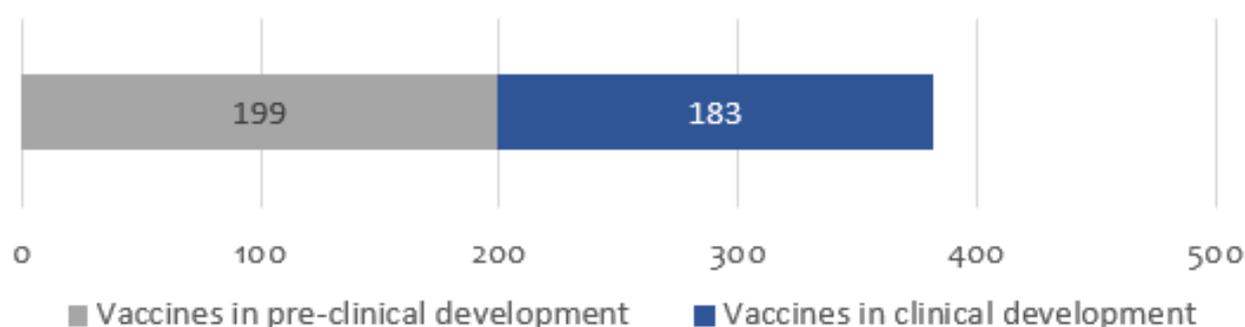
Resumen de la información publicada por la OMS sobre vacunas en desarrollo contra la COVID-19, a nivel mundial

Última actualización por la OMS: 30 de marzo de 2023.

Fuente de información utilizada:



183 Vacunas en evaluación clínica y 199 en evaluación preclínica



Vacunas en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	59	32%
VVnr	Viral Vector (non-replicating)	25	14%
DNA	DNA	17	9%
IV	Inactivated Virus	22	12%
RNA	RNA	43	24%
VVr	Viral Vector (replicating)	4	2%
VLP	Virus Like Particle	7	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%
		183	

Vacunas en evaluación clínica por vía de administración

Oral		5	3%
Injectable		164	90%
SC	Sub cutaneous	5	3%
ID	Intra dermal	9	5%
IM	Intra muscular	150	82%
IN	Intra nasal	16	9%
AE	Aerosol	1	1%
IH	Inhaled	2	1%
TBD / No Data (ND)		14	8%

Número de dosis de las vacunas en evaluación clínica

Number of doses & schedule	Candidate vaccines (no. and %)	
1 dose	47	26%
Day 0	47	
2 doses	101	55%
Day 0 + 14	8	
Day 0 + 21	37	
Day 0 + 28	56	
3 doses	2	1%
Day 0 + 28 + 56	2	
TBD / No Data (ND)	33	18%

Vacunas 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
CanSino Biological Inc./China	Vector viral no replicativo	Intranasal	3
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 y Sublingual	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	Intranasal	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	Intranasal	2/3
USSF + VaxForm/Estados Unidos	Subunidad proteica	Oral	1
CyanVac LLC/Estados Unidos	Vector viral no replicativo	Intranasal	2
DreamTec Research Limited/Hong Kong	BacAg-SpV	Oral	NA
Sean Liu, Icahn School of Medicine at Mount Sinai	Vector viral replicativo	Intranasal	2/3
Hannover Medical School/Alemania	Vector viral no replicativo	Inhalación	1
ACM Biolabs/Singapur	Subunidad proteica	Intranasal	1
Intravacc B.V/Holanda	Vector viral no replicativo	Intranasal	1
McMaster University/Canadá	Vector viral no replicativo	Aerosol	1
Research Institute of Influenza/Estados Unidos	Vector viral no replicativo	Intranasal	1/2
Wuhan BravoVax / China	Vector viral no replicativo	Intranasal	1

Vacunas en fase 4 de evaluación clínica

Candidatos vacunales más avanzados/fabricante/país	Plataforma de la vacuna
Sinovac/China	Virus Inactivado
Sinopharm/Beijing Institute of Biological Products/China (2)	Virus Inactivado
University of Oxford/AstraZeneca/Reino Unido	Vector viral no replicativo
CanSino Biological Inc./Beijing Institute Biotechnology/China (IM e IH)	Vector viral no replicativo
Janssen Pharmaceutical Companies/Estados Unidos	Vector viral no replicativo
Moderna/NIAID/Estados Unidos (2)	ARN
Pfizer/BioNTech Fosun Pharma/Estados Unidos	ARN
Medigen Vaccine Biol./Dynavax/NIAID/Taiwán/EE.UU	Subunidad proteica

Vacunas en fase 3 de evaluación clínica

Candidatos vacunales más avanzados/fabricante/país	Plataforma de la vacuna
Gamaleya Research Institute/Rusia	Vector viral no replicativo
Novavax/Estados Unidos	Subunidad proteica
Anhui Zhifei Longcom Biopharmac./Inst. Microbiol, Chin Acad Sci/China	Subunidad proteica
CureVac AG/Alemania	ARN
Institute of Medical Biology/Chinese Academy of Medical Sciences	Virus inactivado
Research Institute for Biological Safety Problems, Kazakhstan	Virus inactivado
Inovio Pharmac. + Intern. Vacc Inst. + Advaccine Biopharm Co., Ltd	ADN
Zyudus Cadila Healthcare Ltd./India	ADN
Bharat Biotech International Limited/India	Virus Inactivado
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica
Shenzhen Kangtai Biological Products Co., Ltd./China	Virus Inactivado
Clover Biopharmaceuticals Inc./GSK/Dynavax/China/Reino Unido/EE.UU	Subunidad proteica
Vaxine Pty Ltd. + CinnaGen Co./Australia, Irán	Subunidad proteica
Instituto Finlay de Vacunas/Cuba	Subunidad proteica
Federal Budget Res Inst State Res Cent Virol Biotechnol "Vector"/Rusia	Subunidad proteica
West China Hospital + Sichuan University/China	Subunidad proteica
Vaxxinity/EE.UU	Subunidad proteica
Univ. Hong Kong, Xiamen Univ. & Beijing Wantai Biological Pharm./China	Vector viral replicativo
Acad Milit Sci (AMS) Walvax Biotechnol, Suzhou Abogen Biosci/China	ARN
Medicago Inc./Canadá	Partícula similar a virus
Codagenix/Serum Institute of India	Virus vivo atenuado
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica
Valneva, National Institute for Health Research, Reino Unido	Virus inactivado
Biological E. Limited/India	Subunidad proteica
Nanogen Pharmaceutical Biotechnology/Vietnam	Subunidad proteica
Shionogi/Japón	Subunidad proteica
Erciyes University/Turquía	Virus inactivado
SK Bioscience Co., Ltd./CEPI/Corea del Sur/Noruega	Subunidad proteica
Razi Vaccine and Serum Research Institute/Irán, India	Subunidad proteica
Bharat Biotech International Limited/India	Vector viral no replicativo (IN)
Providence Therapeutics/Canadá	ARN
POP Biotechnologies and EuBiologics Co.,Ltd/EEUU, Corea del Sur	Subunidad proteica
Jiangsu Rec-Biotechnology/China	Subunidad proteica
Radboud University/Holanda	Partícula similar a virus
Arcturus Therapeutics, Inc./Estados Unidos	ARN
Livzon Pharmaceutical/China	Subunidad proteica
National Vaccine and Serum Institute, China; Beijing Zhong Sheng Heng Yi	Subunidad proteica
KM Biologics Co., Ltd./Japón	Virus inactivado
Shanghai East Hospital and Stemirna Therapeutics/China	ARN
Bagheiat-allah University of Medical Sciences/AmitisGen/Irán	Subunidad proteica
Laboratorios Hipra, S.A./España	Subunidad proteica
Sinocelltech Ltd./China	Subunidad proteica
Chumakov Federal Scientific Center for Research/Rusia	Virus Inactivado
Yantai Patronus Biotech Co., Ltd.	Partícula similar a virus
Airlangga University/Indonesia	Virus Inactivado
PT Bio Farma/Indonesia	Subunidad proteica
AIM Vaccine and Liverna Therapeutics/China	ARN
Cansino Biolgics Inc./China	Vector viral no replicativo (IM)
China National Biotech Group Company Limited	Virus inactivado
Moderna TX	ARN

Noticias en la Web

Investigación revela que la eficacia de Soberana 02 y Soberana Plus en niños no disminuyó con el tiempo

1 abr. Los resultados finales de la vacunación con el esquema combinado de Soberana 02 y Soberana Plus –ambos desarrollados por el Instituto Finlay de Vacunas (IFV)– en niños entre dos y 11 años de edad en Cuba, durante la ola infecciosa de la variante Ómicron del SARS-CoV-2, demostraron una efectividad superior al 80 %, significó la institución a través de su cuenta oficial en Twitter.

De acuerdo con el Preprint de los resultados, titulado «Efectividad en el mundo real de la combinación de las vacunas Soberana 02 y Soberana Plus en niños de 2 a 11 años, durante la ola en Cuba de la variante Ómicron, del SARS-CoV-2: un estudio de discontinuidad de regresión» y

compartido por el IFV, se incluyeron en el estudio 1 098 817 de vacunados completos entre dos y 11 años, y 98 342 niños no vacunados de un año de edad.

Durante la ola infecciosa de Ómicron de 24 semanas, se detectaron 7 003 infecciones sintomáticas de COVID-19 en el grupo vacunado, y unas 3 577 en el no vacunado, referenció el Preprint.

Se determinó que la efectividad de las vacunas contra la infección sintomática por COVID-19 fue similar en niños de dos a cuatro años y en menores en el rango de cinco a 11 años, con un 83,8 % y 82,3 %, respectivamente.

Se indicó también en el artículo que la efectividad contra la infección sintomática severa fue del 97 % en el grupo entre dos y cuatro años, y del 95 % en el de cinco a 11 años.

Asimismo, se demostró que la eficacia contra la infección no disminuyó con el tiempo, y no se observó muerte infantil a causa de la COVID-19.

La variante Ómicron se propagó con mayor fuerza en el país a finales del año 2021 y principios de 2022. Sin embargo, gracias a los elevados índices de vacunación con que ya contaba la población cubana, la incidencia de la enfermedad, en cuanto a número de contagios y gravedad, no llegó a lo niveles precedentes alcanzados durante la propagación de la variante Delta.

Luego de realizados los ensayos clínicos con el rigor correspondiente, entre los meses de septiembre y noviembre de 2021 se realizó en Cuba la campaña masiva de vacunación anti-COVID-19 en las edades

pediátricas comprendidas entre dos y 18 años, primera de su tipo en el mundo, con un esquema heterólogo de dos dosis de Soberana 02 y una tercera de Soberana Plus.

En ella fueron inmunizados, de forma escalonada (primero el grupo etario entre 12 y 18 años, y luego el de dos a 11 años), más de 1 800 000 niñas, niños y adolescentes de toda la nación.

La campaña de inmunización pediátrica demostró la seguridad de ambas vacunas cubanas porque, luego de aplicar más de cinco millones de dosis, no se reportaron efectos adversos graves.

“Soberana 02 y Soberana Plus resultaron efectivas en niños de dos a 11 años durante ola de variante Ómicron. La efectividad de las vacunas contra la infección sintomática por COVID-19 fue similar en niños de dos a cuatro años y en menores en el rango de cinco a 11 años, con un 83,8 % y 82,3 %, respectivamente.”



Fuente: Granma. Disponible en <https://bit.ly/3mqRbn5>

HIPRA recibe la opinión positiva de la Agencia Europea del Medicamento por su vacuna contra la COVID-19

1 abr. Una dosis de recuerdo de la vacuna de proteína recombinante bivalente permite una inmunización duradera en personas de más de 16 años. La vacuna ha demostrado ser menos reactogénica que las vacunas de ARNm. Es la primera vacuna bivalente de proteína recombinante contra la COVID-19 que se autoriza en la Unión Europea. El proceso ha sido evaluado por el Comité de Ética con medicamentos (CEIm) del hospital Clínic Barcelona.



HIPRA ha recibido la opinión positiva del Comité de Medicamentos de Uso Humano (CHMP) de la Agencia Europea del Medicamento (EMA) para la autorización de comercialización en la Unión Europea de BIMERVAX®, la vacuna contra la COVID-19 desarrollada por la farmacéutica biotecnológica. Se trata de una vacuna de nueva generación para conferir protección para hacer frente a la COVID-19, desarrollada 100% en la Unión Europea y diseñada mediante la tecnología de proteína recombinante. Consiste en una vacuna adyuvada bivalente que contiene una proteína recombinante basada en las variantes Beta y Alfa del SARS-CoV-2 y que está indicada como dosis de recuerdo para personas mayores de 16 años^{1, 2, 3}. Es la primera vacuna bivalente de proteína recombinante adyuvada que se autoriza en la Unión Europea contra el virus.

La opinión positiva de la EMA llega después de concluir que dispone de datos sólidos suficientes sobre la calidad, inmunogenicidad y seguridad de la vacuna. En los estudios de fase IIb y III, se ha demostrado que se trata de una vacuna segura, poco reactogénica y con una amplia capacidad de neutralizar las principales variantes del SARS-CoV-2, incluyendo las variantes de Ómicron. En el estudio comparativo versus la vacuna de ARNm que requería la EMA, se muestra que, a los 6 meses de recibir la dosis de recuerdo, las personas vacunadas con la vacuna de HIPRA presentan niveles superiores de anticuerpos neutralizantes frente a todas las variantes estudiadas, lo que sugiere una protección más duradera. En el mismo estudio comparativo, se demuestra tener menos reactogenicidad que la vacuna de ARNm^{1, 2, 3}.

La vacuna se conserva a temperatura refrigerada entre 2°C y 8°C, facilitando su logística y distribución. Se trata de una vacuna "lista para utilizar", es decir, no es necesario reconstituirla antes de su uso, facilitando así la tarea al personal sanitario.

Por sus características y resultados demostrados en los ensayos clínicos, según HIPRA, la vacuna encaja con las necesidades actuales teniendo en cuenta la evolución de la pandemia. Ante la posible situación de una nueva variante con una mutación diferente que requiriese adaptar la vacuna, la plataforma de proteína recombinante tiene una gran versatilidad para actualizarse en muy poco tiempo y permite incluir más de una variante en una sola sustancia activa, lo que hasta el día de hoy no es factible con otros diseños vacunales aprobados en la Unión Europea.

Desde HIPRA se cree que "es positivo que los sistemas sanitarios de todo el mundo dispongan de un catálogo de vacunas de diferentes tecnologías porque es un aspecto clave en la implantación de los programas vacunales, sean planes periódicos de vacunación de recuerdo o bien por el control de un eventual rebrote de la pandemia". Por otra parte, "BIMERVAX® está basada en una tecnología ampliamente utilizada y conocida en la fabricación de vacunas, como la de la hepatitis y la de la gripe, entre otras".

La vacuna contra la COVID-19 de HIPRA es la primera vacuna para salud humana que se ha diseñado y desarrollado en el Estado, aspecto que marca un antes y un después en la historia de la medicina española y denota el talento y tecnología que tiene el país. Disponer de las estructuras y capacidades desde la investigación más básica, el desarrollo y hasta la producción de vacunas en el país es un factor clave para poder garantizar una respuesta rápida en caso de futuras emergencias sanitarias y refuerza la autonomía estratégica europea en el ámbito de la salud.

Evolución del proyecto

En mayo de 2020, el equipo de I+D de la empresa empezó a diseñar su primera vacuna contra la COVID-19 basándose en la cepa de Wuhan y, poco después, dada la aparición de las primeras variantes del virus, decidió adaptar la composición del antígeno y empezar a diseñar la actual vacuna adyuvada basada en las variantes Beta y Alfa. Tras realizar los estudios preclínicos y demostrar la seguridad y eficacia de la vacuna a nivel preclínico, los ensayos clínicos empezaron en agosto de 2021 y en marzo de 2022 la Agencia Europea del Medicamento inició el proceso de revisión continua (*rolling review*).

En agosto de 2022, la empresa firmó un acuerdo de adquisición conjunta (*Joint Procurement Agreement* (JPA)) por el que 13 estados miembros de la Unión Europea (UE) tienen la opción de comprar hasta 250 millones de dosis de la vacuna. A diferencia de otras vacunas COVID-19, que durante la situación de emergencia sanitaria se pudieron acoger en el marco de los programas de compra anticipada (*Advanced Purchase Agreement* (APA)) de la UE, con el JPA no existe obligación de compra ni pago anticipado.

Por último, la vacuna ha recibido la opinión positiva de la EMA.

En los últimos meses también se han establecido contactos con las autoridades de diferentes países de fuera de la UE que han mostrado interés en la vacuna. Ahora que ya se dispone de la vacuna en la Unión Europea, se trabajará para llegar a acuerdos con estos países, así como con los organismos que han coordinado las donaciones de vacunas a nivel internacional con el objetivo de que la vacuna forme parte de los planes de vacunación en estos territorios y que pueda contribuir al control global de la COVID-19.

Por otra parte, en el marco del proyecto europeo RBDCOV que lidera HIPRA y que está formado por hospitales, centros de investigación y entidades de diferentes países europeos, se está estudiando la vacuna como dosis de refuerzo para personas inmunocomprometidas y, en breve, se iniciarán también estudios en niños y adolescentes menores de 16 años.

Fuente: BioTech. Disponible en <https://bit.ly/3mt35Ns>

Cuáles son las vacunas contra el dengue que se aplican en el mundo y qué sucede en Argentina

2 abr. En un contexto de aumento de casos, este es un repaso por las dos fórmulas que actualmente están disponibles en Latinoamérica, Estados Unidos y Europa. En Brasil, un desarrollo se encuentra en Fase III.

“Los 16.143 casos de dengue en la presente temporada se encuentran por encima de los registrados en los últimos 2 años. Sin embargo, están aún 10% por debajo del número de casos para el mismo período del año 2020 y 40% por debajo de 2016 -las dos últimas temporadas



epidémicas”, señalaron desde el Ministerio de Salud en el reciente Boletín Epidemiológico Nacional, que relevó lo sucedido entre el 1 de agosto de 2022 y el 26 de marzo de 2023.

Este panorama puso en alerta a las clínicas y a los hospitales en diversos puntos del país, como por ejemplo la Ciudad de Buenos Aires, en donde, según pudo saber Infobae, hubo guardias colapsadas por pacientes con síntomas de la enfermedad viral transmitida principalmente por la picadura del mosquito *Aedes aegypti*.

En ese marco, las autoridades sanitarias llamaron a tomar medidas de prevención como la eliminación de criaderos de mosquitos y de todos los recipientes que contienen agua tanto en el interior de los hogares como en los alrededores. Además, tanto en Latinoamérica como en el resto del mundo, algunos países ya dieron el visto bueno para dos vacunas que están siendo aplicadas en niños y adultos. También hay un desarrollo científico que se encuentra en Fase III en Brasil.

Cuáles son las vacunas contra el dengue que se aplican en el mundo

Días atrás, la Agencia Nacional de Vigilancia Sanitaria de Brasil (Anvisa) aprobó el registro de una fórmula tetravalente elaborada por la farmacéutica japonesa Takeda, en medio de un aumento de casos de dengue en aquel país, que en 2022 reportó más de 1.000 muertes asociadas a este cuadro. La vacuna, llamada Qdenga, está compuesta por los cuatro serotipos del virus que causa la enfermedad, “por lo que proporciona una amplia protección”, indicó el ente regulador en un comunicado.

Con una eficacia general del 80,2%, Qdenga consta de dos dosis que deben ser inoculadas con un intervalo de tres meses, y está recomendada para un público extenso: desde los 4 hasta de 60 años. Esta vacuna pueden aplicarse tanto a las personas que tuvieron la enfermedad como a las que no.

“La demostración de la eficacia de la vacuna Qdenga está respaldada principalmente por los resultados de un estudio a gran escala de fase III, controlado con placebo y realizado en países endémicos para el dengue, con el objetivo de evaluar la eficacia y seguridad”, explicaron desde Anvisa.

En diciembre de 2022, la Unión Europea (UE) avaló el uso de Qdenga en personas desde los 4 años de edad. Particularmente en Argentina, esta vacuna podría ser autorizada en los próximos meses. Es que según señalaron desde la ANMAT y desde el Ministerio de Salud a Infobae, el proceso “está muy avanzado” y se encuentra “en una etapa de evaluación”, aunque aún no hay una fecha definida para que se concrete.



Otra vacuna contemplada para prevenir el dengue es Dengvaxia, producida con microbios vivos debilitados o atenuados. Esta fórmula fue elaborada por el laboratorio Sanofi Pasteur; se trata de una vacuna tetravalente que se fabricó por medio de una tecnología de ADN recombinante y que se aplica con un esquema de 3 dosis, a los 0, 6 y 12 meses. La Organización Mundial de la Salud (OMS) sugirió Dengvaxia “solo en entornos geográficos (nacionales o subnacionales) en los que los datos epidemiológicos indiquen que hay una gran carga de enfermedad”. Fue así que algunos países como México, Brasil, Filipinas, Perú y Singapur avalaron su aplicación.

En noviembre de 2017, Sanofi emitió un comunicado para solicitar a las autoridades sanitarias “que actualicen la información proporcionada a médicos y pacientes sobre su vacuna contra el dengue Dengvaxia”. ¿Por qué? Porque su análisis confirmó que Dengvaxia “proporciona un beneficio protector persistente contra la fiebre del dengue en aquellos que tenían una infección previa. Sin embargo, para aquellos que no estaban infectados previamente por el virus, el análisis encontró que, a largo plazo, podrían ocurrir más casos de enfermedad grave después de la vacunación tras una infección de dengue posterior”.

En 2018, la UE autorizó el uso de Dengvaxia y, pocos meses después, a principios de 2019, llegó la aprobación en Estados Unidos por parte de la Administración de Alimentos y Medicamentos (FDA, por su sigla en inglés). Según lo postulado por la FDA, “el uso de Dengvaxia está contemplado para prevenir el dengue en niños de 9 a 16 años que hayan tenido una infección previa por el virus confirmada por un laboratorio, y que vivan en áreas donde el dengue es endémico”. Es que, según el organismo estadounidense, “en los niños que no han tenido el virus, Dengvaxia aumenta el riesgo de enfermedad grave y hospitalización si contraen dengue después de vacunarse”.

En Argentina, Dengvaxia fue aprobada por la ANMAT en 2017. Según consta en el documento oficial del procedimiento, al que accedió Infobae, se autorizó “exclusivamente para prevenir el dengue causado por los serotipos 1, 2, 3 y 4 del virus del dengue en personas de 9 a 45 años que viven en áreas endémicas, considerando que las áreas serán las establecidas a partir de datos epidemiológicos por el Ministerio de Salud. La vacuna no se encuentra prevista y, por lo tanto, su uso y comercialización en ocasión de brotes o para viajeros no se encuentra autorizado. (...) Que la condición de venta sea autorizada bajo condiciones especiales, bajo prescripción médica”.

“Dengvaxia presenta un relativo balance beneficio/riesgo para los serotipos 3 y 4, -precisaron en el documento- y un porcentaje de eficacia mucho menor para serotipos 1 y 2 del dengue. (...) La Dirección de Evaluación y Control Biológicos sugiere la inscripción en el Registro de Especialidades Medicinales de Dengvaxia bajo condiciones especiales y excepcionales, contemplándose a su vez un período de validez de 1 año para la misma, renovable con una previa evaluación de datos de seguimiento estrecho del producto una vez puesto en uso”. Este medio consultó a fuentes de la ANMAT, quienes precisaron que actualmente “la vacuna Dengvaxia sigue autorizada” en el país.

Por su parte, Florencia Esquivel, directora médica de Sanofi Vacunas para el Cono Sur, le dijo a Infobae: “En Argentina, Dengvaxia fue aprobada en marzo de 2017 por ANMAT con la indicación de 9 a 45 años. Posteriormente, se presentó una actualización del prospecto que incluye una advertencia para aquellas personas que no han padecido la enfermedad. Esta actualización fue aprobada por ANMAT en junio de 2020. Actualmente la vacuna está indicada para personas de 6 a 45 años con infección de dengue previa confirmada mediante una prueba, con un esquema de 3 dosis a los 0, 6 y 12 meses”.

En segundo término, Esquivel detalló: “La vacuna contra el dengue está aprobada en cerca de 30 países de Latinoamérica y Asia en donde la carga de la enfermedad es alta. En el Cono Sur está siendo comercializada a nivel privado solo en Paraguay desde noviembre del 2016”.

“La vacuna contra el dengue de Sanofi —añadió Esquivel— es la primera de su tipo en el mundo y está indicada en la prevención de la enfermedad causada por los serotipos 1, 2, 3 y 4 del virus del dengue en personas con infección previa confirmada mediante una prueba. Para estas personas la vacunación ofrecería una fuerte y persistente protección contra las hospitalizaciones y enfermedad grave por dengue”.

La vacuna y los serotipos del dengue

¿Cuáles son algunas de las complejidades a la hora de formular y producir las vacunas contra el dengue? Así lo explicó en diálogo con Infobae el doctor Tomás Orduna, ex jefe del Servicio de Medicina Tropical y Medicina del Viajero en el Hospital de Infecciosas Muñiz y miembro del Comité Científico de la Fundación Mundo Sano: “El hecho de que sean cuatro serotipos del dengue es como si hubiera cuatro patógenos diferentes, porque no hay inmunidad cruzada permanente. Entonces, si tengo la infección con uno de los serotipos voy a tener una respuesta específica y muy duradera contra ese serotipo. Sin embargo, habrá una respuesta parcial de protección contra las otras variantes, pero después, esos anticuerpos, que no son neutralizantes, no persisten para evitar una infección con otros serotipos distintos al que yo me contagié”.

“Cuando se trabaja en una vacuna para dengue —siguió Orduna— es como estar trabajando, en un misma mezcla, con cuatro patógenos. Por ende, las vacunas deben tener en cuenta esta característica particular, que es bien diferente al Zika y al Chikungunya, que tienen un solo serotipo, y a la fiebre amarilla que es el flavivirus patrón. En la logística que hay que armar, la vacuna tiene que contemplar todos los serotipos, y por eso ha sido difícil generar una fórmula que genere una respuesta pareja a los cuatro del dengue”.

Según el especialista, la vacuna Dengvaxia “consta de virus quiméricos, es decir que se toma el esqueleto del virus atenuado de la fiebre amarilla, se le sacan dos de los genes y se los reemplaza en una vacuna para cada uno de los cuatro serotipos del dengue. Dengvaxia tuvo buena eficacia en las personas que ya han tenido contacto con el dengue, y la respuesta es menor en quienes nunca se contagiaron. No queda claro por qué ha ocurrido esto”.



En ese tono, el virólogo de la Universidad Nacional de Quilmes, Mario Lozano, aportó: “Las nuevas tecnologías como las que se desarrollaron para la vacuna del COVID, también se usan para desarrollar vacunas contra otros virus, como es el caso del dengue. Se producen de manera similar, aunque obviamente, en el corazón de la vacuna hay algo diferente”.

“En Argentina —sumó Lozano— se esperaba en realidad un brote de dengue de mayor magnitud que el que está ocurriendo.

En las zonas más pobladas de nuestro país, el dengue es una enfermedad que disminuye drásticamente con el frío, porque el mosquito no sobrevive a temperaturas bajas. En esta temporada, que hubo temperaturas altas en el verano y en el otoño, se esperaba que se produjeran muchísimos casos y eso no sucedió. Esto puede estar relacionado al clima y a que hubo una sequía muy importante, lo que puede haber disminuido la capacidad del mosquito de generar descendencia”.

Para Lozano, “de todas formas, el brote actual de dengue es importante, pero no es consecuencia de no haber adquirido una vacuna porque la misma no protege al 100%. La estrategia más eficiente es evitar el desarrollo del mosquito”.

Hay otra vacuna contra el dengue que se encuentra en la Fase III de desarrollo. Denominada científicamente TV003/TV005, fue desarrollada por el Instituto Nacional de Alergias y Enfermedades Infecciosas (NIAID, por sus siglas en inglés), que le dio licencias de producción a fabricantes de varios países. Uno de ellos fue el Instituto Butantan de Brasil, que adquirió la patente TV003 y firmó un acuerdo de colaboración con la farmacéutica alemana Merck para compartir datos clínicos y desarrollar vacunas a partir

de la misma fórmula.

En 2016, Butantan comenzó la Fase III incluyendo a más de 16.000 voluntarios. Según los resultados iniciales, que fueron publicados en diciembre de 2022, la vacuna Butantan-DV, tal como fue bautizada por la institución, mostró una eficacia general del 79,6% para prevenir la enfermedad. En un comunicado oficial, desde el laboratorio explicaron que no hubo “casos de dengue grave o con signos de alarma durante los dos años de seguimiento de los participantes”.

“Los resultados se refieren a análisis realizados entre febrero de 2016 y julio de 2021 —sumaron en el informe—, de los que participaron 16 centros de investigación en diferentes regiones de Brasil, incluidos 16.235 voluntarios de 2 a 59 años, que recibieron una dosis única de la vacuna. La incidencia de casos de dengue sintomático confirmado por laboratorio se observó a partir de los 28 días de vacunación hasta el segundo año de seguimiento de los individuos. El estudio continuará hasta que todos los participantes completen cinco años de seguimiento en 2024”.

La vacuna de Butantan es tetravalente y protege frente a los cuatro serotipos del virus. “Se incluyeron en la investigación personas con y sin exposición previa al virus del dengue. En los participantes que ya habían sido infectados antes del estudio, la eficacia fue del 89,2%. En los que nunca habían contraído la enfermedad, la protección fue del 73,5%”, detallaron desde el laboratorio.

A su turno, Daniela Hozbor, investigadora del CONICET en el Instituto de Bioquímica y Biología Molecular, apuntó: “El dengue no se contagia de persona a persona: es solo a través del mosquito. Como hay circulación de los cuatro serotipos del virus, lo que se busca es prevenir la enfermedad que provoca cada uno de ellos. La idea es que la vacuna esté formulada para que proteja ante los cuatro serotipos. Estas plataformas corresponden a virus atenuados, que no provocan la enfermedad, que pueden replicarse y que llevan como si fuesen ‘pedacitos’ de los serotipos”.

De acuerdo a Hozbor, “las vacunas son importantes, pero también hay otras medidas de prevención que deben tenerse en cuenta, como la eliminación de criaderos de mosquitos y de los recipientes que acumulen agua dentro y fuera de la casa y la utilización de repelentes, entre otras”.

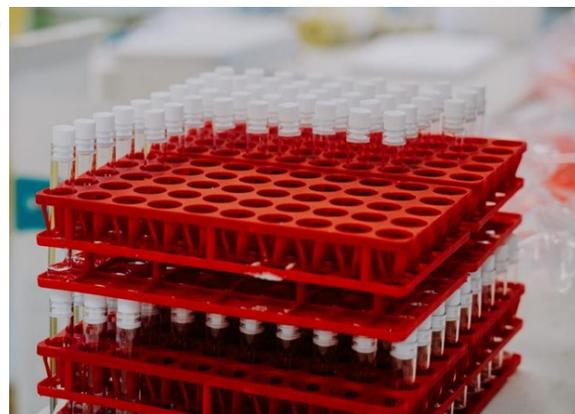
Fuente: infobae. Disponible en <https://bit.ly/412gwmx>

La vacuna nasal contra la COVID-19 supera las primeras pruebas

3 abr. Desde el comienzo de la pandemia de COVID-19, los investigadores han estado trabajando en vacunas mucosales que puedan administrarse a través de la nariz. Ahora, científicos alemanes han desarrollado una vacuna viva atenuada para la nariz, según publican en la revista 'Nature Microbiology'.

Los coronavirus se propagan principalmente por el aire y cuando las personas infectadas hablan, tosen, estornudan o ríen, expulsan gotitas de saliva que contienen el virus y otras personas respiran estos patógenos y se infectan.

Un equipo de investigadores de la Universidad Libre de Berlín, el Centro Max Delbrück y la Universidad Charité de Berlín, en Alemania, decidió intentar combatir el virus causante de la COVID-19 allí donde primero se instala: las membranas mucosas de la nariz, la boca, la garganta y los pulmones.



Para ello, desarrollaron una vacuna viva atenuada contra el SARS-CoV-2 que se administra por vía nasal y confiere mejor inmunidad que las vacunas inyectadas en el músculo.

Ya en otoño del año pasado se aprobó el uso de dos fórmulas de vacunación nasal en India y China. Éstas contienen adenovirus modificados -que suelen causar enfermedades respiratorias o gastrointestinales- que se autoatenúan, lo que significa que se replican poco o dejan de replicarse del todo y, por tanto, nunca desencadenan la enfermedad. Actualmente se están desarrollando y probando otras vacunas nasales vivas en todo el mundo.

Las ventajas de una vacuna nasal van mucho más allá de ofrecer una alternativa a las personas con miedo a las agujas. Cuando se inyecta una vacuna, ésta infunde inmunidad principalmente en la sangre y en todo el organismo.

Sin embargo, esto significa que el sistema inmunitario sólo detecta y combate los coronavirus relativamente tarde en una infección, ya que entran en el cuerpo a través de las membranas mucosas del tracto respiratorio superior.

"Es aquí, por tanto, donde necesitamos inmunidad local si queremos interceptar un virus respiratorio en una fase temprana", explica el coúltimo autor del estudio, el doctor Jakob Trimpert, veterinario y jefe de grupo de investigación en el Instituto de Virología de la Universidad Libre de Berlín.

"Las vacunas nasales son mucho más eficaces en este sentido que las inyectadas, que no llegan a las mucosas o lo hacen con dificultad", subraya el doctor Emanuel Wyler, otro de los coautores, del Laboratorio de Biología del ARN y Regulación Posttranscripcional, que dirige el profesor Markus Landthaler en el Instituto de Biología de Sistemas Médicos de Berlín del Centro Max Delbrück (MDC-BIMSB).

En un escenario ideal, una vacuna intranasal viva estimula la formación del anticuerpo inmunoglobulina A (IgA) directamente in situ, evitando así que se produzca la infección en primer lugar.

"Los linfocitos T de memoria que residen en el tejido pulmonar desempeñan una función de utilidad similar a la de los anticuerpos en la mucosa", explica la doctora Geraldine Nouailles, inmunóloga y jefa de grupo de investigación del Departamento de Neumología, Medicina Respiratoria y Medicina Intensiva de la Charité.

"Estos glóbulos blancos permanecen en el tejido afectado mucho tiempo después de que haya pasado una infección y recuerdan los patógenos que han encontrado antes -añade-. Gracias a su ubicación en los pulmones, pueden responder rápidamente a los virus que entran por las vías respiratorias".

Según recuerda, han podido demostrar que una vacunación intranasal previa provoca una mayor reactivación de estas células de memoria locales en caso de una infección posterior por SARS-CoV-2.

Los científicos probaron la eficacia de la recién desarrollada vacuna intranasal COVID-19 en modelos de hámster que habían sido creados por Trimpert y su equipo de la Universidad Libre de Berlín al principio de la pandemia. Comprobaron que, tras dos dosis de la vacuna, el virus ya no podía replicarse en el organismo modelo.

"Observamos una fuerte activación de la memoria inmunológica, y las membranas mucosas estaban muy bien protegidas por la alta concentración de anticuerpos", resalta Trimpert. Por tanto, la vacuna también podría reducir significativamente la transmisibilidad del virus.

Además, compararon la eficacia de la vacuna viva atenuada con la de las vacunas inyectadas en el músculo.

Para ello, vacunaron a los hámsters dos veces con la vacuna viva, una con la de ARNm y otra con la viva, o dos con una vacuna basada en ARNm o adenovirus.

A continuación, tras infectar a los hámsters con SARS-CoV-2, utilizaron muestras de tejido de la mucosa nasal y los pulmones para ver con qué intensidad seguía atacando el virus a las células de la mucosa. También determinaron el alcance de la respuesta inflamatoria mediante secuenciación unicelular.

"La vacuna viva atenuada funcionó mejor que las otras vacunas en todos los parámetros", resume Wyler. Esto se debe probablemente a que la vacuna administrada por vía nasal genera inmunidad directamente en el lugar de entrada del virus.

Además, la vacuna viva contiene todos los componentes del virus, no sólo la proteína spike, como ocurre con las vacunas de ARNm. Si bien es cierto que la *spike* es el antígeno más importante del virus, el sistema inmunitario también puede reconocer el virus a partir de unas 20 proteínas más.

La mejor protección contra el SARS-CoV-2 la proporcionó la doble vacunación nasal, seguida de la combinación de una inyección muscular de la vacuna de ARNm y la posterior administración nasal de la vacuna viva atenuada. "Esto significa que la vacuna viva podría ser especialmente interesante como refuerzo", afirma la coautora del estudio Julia Adler, veterinaria y estudiante de doctorado en el Instituto de Virología de la Universidad Libre de Berlín.

El principio de las vacunas vivas atenuadas es antiguo y ya se utiliza, por ejemplo, en las vacunas contra el sarampión y la rubéola. Pero en el pasado, los científicos generaban la atenuación por azar, a veces esperando años a que evolucionaran las mutaciones que producían un virus atenuado. Los investigadores berlineses, en cambio, fueron capaces de alterar específicamente el código genético de los coronavirus.

"Queríamos impedir que los virus atenuados mutaran de nuevo en una variante más agresiva -explica el doctor Dusan Kunec, científico del Instituto de Virología de la Universidad Libre de Berlín y otro de los coautores del estudio-. Esto hace que nuestra vacuna viva sea totalmente segura y significa que puede adaptarse a nuevas variantes del virus".

El siguiente paso son las pruebas de seguridad: Los investigadores colaboran con RocketVax AG, una empresa suiza de nueva creación que está desarrollando la vacuna viva atenuada contra el SARS-CoV-2 y preparando un ensayo clínico de fase 1 en humanos.

"Estamos encantados de estar a la vanguardia del desarrollo y la fabricación de la vacuna viva atenuada contra el SARS-CoV-2 en forma de aerosol nasal en RocketVax. Nuestro objetivo es aumentar rápidamente la producción y avanzar en el desarrollo clínico hacia el acceso al mercado para proporcionar protección contra los síntomas post-covid para todos. Vemos un gran potencial en el mercado de las vacunas nasales estacionales", afirma el doctor Vladimir Cmiljanovic, Director General de RocketVax.

El futuro mostrará qué vacuna nasal proporcionará finalmente una mejor protección. Los fabricantes de las vacunas nasales contra el adenovirus desarrolladas en India y China aún no han solicitado su aprobación en Europa. Pero una cosa está clara para los científicos: como se administran en forma de aerosoles o gotas nasales, las vacunas nasales son una buena opción para su uso en lugares con acceso limitado a personal médico capacitado. Además, son baratas de producir y fáciles de almacenar y transportar.

Fuente: Heraldo. Disponible en <https://bit.ly/400ubt3>

La vacuna nasal contra la COVID-19 pasa sus primeros ensayos clínicos

3 abr. La empresa Blue Lake Biotechnology Inc. está preparando una vacuna de refuerzo contra la COVID-19. Lejos de utilizar pinchazos, este fármaco se aplica por la nariz, como si fuera un spray, y sus primeros ensayos indican que protege más a quienes lo reciben.

Por el momento, la empresa ha presentado los resultados preliminares de un ensayo clínico de fase 1. Para ello incluyeron a 72 participantes de 18 a 55 años no vacunados y también que ya hubieran recibido al menos dos vacunas con sistema ARNm.



Mediante este experimento la empresa ha comprobado que la vacuna de Blue Lake reduce el riesgo de infecciones sintomáticas de coronavirus en un 86 % durante los tres meses siguientes a recibirla como dosis de refuerzo. En comparación, las vacunas ya existentes en Estados Unidos reducen las infecciones durante uno o dos meses y a la mitad de probabilidades: un 43 %, recoge 'NBC'.

Estos resultados son aún preliminares y Blue Lake necesita hacer más investigación con más participantes. Aun así, la vacuna es prometedora. "Esta es solo la Fase 1 y necesitamos hacer al menos tres fases, pero estamos muy animados y entusiasmados con esto", señaló Biao He, fundador y director de la empresa, a 'NBC'.

Cómo funciona la vacuna nasal contra la COVID-19

Esta vacuna nasal utiliza un virus parainfluenza codificado con una proteína del SARS-CoV-2 para entrenar al sistema inmunitario de las personas. Este virus, a su vez, está modificado para que no infecte a las personas que lo reciban.

Fuente: TecnoXplora. Disponible en <https://bit.ly/43x2Npy>

Aplican 19 mil vacunas Abdala para prevenir la COVID-19 en la población mayor de 18 años en Jalisco

4 abr. El Instituto Mexicano del Seguro Social (IMSS) en Jalisco ha aplicado 19 mil 900 dosis de la vacuna Abdala, para prevenir el covid-19, entre la población mayor de 18 años.

El biológico es de origen cubano y tiene como principio activo la proteína recombinante del dominio de unión al receptor del virus SARS-CoV-2 (RBD).

La vacuna tiene una eficacia de 92.28 % contra la enfermedad sintomática, así como 98.1 % en la prevención de la forma sistémica severa, y 94.1 % en la prevención de mortalidad. Se aplican tres dosis con un intervalo de 14 a 28 días entre cada una.

Fuente: TeleDiario. Disponible en <https://bit.ly/41ngrcM>



AstraZeneca vaccine discontinued by federal government

Apr 5. A controversial COVID-19 vaccine — linked to a very rare but serious side-effect— has been quietly discontinued in Australia, the federal government has confirmed.

The AstraZeneca Covid vaccine, sold under the brand name Vaxzevria, has not been available to the Australian public since March 20.

The federal Department of Health and Aged Care confirmed the news in a statement to news.com.au, saying although the vaccine remains provisionally approved in the country, AstraZeneca has decided to “formally discontinue Vaxzevria in Australia”.

According to the spokesperson, the last batch of pandemic supply stock expired on March 21, 2023.

“The Government has entered into five separate agreements for the supply of COVID-19 vaccines and has secured sufficient doses to complete current and future booster requirements and any new or remaining primary course vaccinations,” the spokesperson said.

“This diverse portfolio of vaccines provides Australian’s flexibility of choice and enables the government to address variants of concern in the future. The (Health) Department works closely with manufacturers to ensure access to the most updated vaccines.”

The spokesperson wanted to emphasise the decision to phase out Vaxzevria was “not a decision based on safety as some people have misrepresented on social media”, but by the increased supply of alternative Covid vaccine options.

“As expected, first generation vaccines have been superseded by newer vaccines targeting the strains of the virus now circulating.”

The Therapeutic Goods Administration (TGA) provisionally approved the AstraZeneca vaccine for use in Australia for people aged 18 years and over as a primary course from February 15, 2021 and as a booster from February 8, 2022.

At the time, the TGA said the decision to receive a Vaxzevria booster must be made in consultation with a health professional and that mRNA Covid vaccines (such as Pfizer and Moderna’s) were “preferred” boosters. Months later, however, medical experts started to recommend against Australians under 60 taking the AstraZeneca vaccine due to concerns over a potentially-fatal blood clotting disorder: Thrombosis with thrombocytopenia syndrome (TTS).

The change came after a number of cases of TSS among those aged 50-59 years, and the death of a 52-year-old woman from a blood clot likely linked to the AstraZeneca vaccine.

Despite the rarity of clots across all ages, the risk of developing one was slightly higher in younger patients.

The Australian Technical Advisory Group on Immunisation (ATAGI) estimated at the time that the risk of TTS in Australia was around 3.1 per 100,000 for people over 50 years and 1.8 per 100,000 for people under 50 years.



However, after the Australian government secured 53.8 million doses of the AstraZeneca vaccine – 50 million of those produced in Melbourne by local manufacturer CSL – and authorising a travel-friendly rebranding, AstraZeneca’s Vaxzevria jab has been discontinued.

Deakin University chair of epidemiology Catherine Bennett says it is no surprise after demand dropped and other vaccines started to fill the gaps.

“It is not unexpected, as demand dropped with people completing their initial vaccine doses the focus for second and later doses has shifted to mRNA vaccines (like Pfizer and Moderna) and Novavax as an alternative to mRNAs technology,” she told news.com.au.

Professor Bennett said despite the adverse reactions and negative press, the vaccine’s impact cannot be underestimated.

“AstraZeneca has saved many lives and we couldn’t have achieved the very high vaccination rates we did ahead of Omicron without it as there just wasn’t the mRNA supply,” she said.

“It has helped us save many lives.”

AstraZeneca, she said, served its purpose getting people vaccinated in the early days of the vaccine rollout. But it has been overtaken by the similarly safe and effective technologies developed in other vaccines.

Australians over the age of 65 in early 2023 have been advised to get a Covid vaccine booster, according to ATAGI. Meanwhile, those aged 18 to 64 years, are recommended to get a booster dose if they have an increased risk of contracting the virus.

The Department of Health and Aged Care spokesperson said:

“This was not a decision based on safety as some people have misrepresented on social media,” the spokesperson said.

“As expected, first generation vaccines have been superseded by newer vaccines targeting the strains of the virus now circulating.”

Fuente: News.com.au. Disponible en <https://bit.ly/43z7JKj>

La vacuna de Hipra accede al mercado europeo y asegura el suministro de 250 millones de dosis

6 abr. El pasado 30 de marzo la vacuna contra la COVID-19 de Hipra, denominada Bimervax, fue aprobada como dosis de refuerzo en personas mayores de 16 años que hayan sido vacunadas anteriormente con una vacuna de ARNm contra la enfermedad. Se trata de una vacuna adyuvada bivalente que contiene una proteína recombinante basada en las variantes Beta y Alfa del SARS-CoV-2.



La vacuna ha sido aprobada este marzo y ahora puede ser comercializada en la Unión Europea, después de haber recibido una opinión favorable de la Agencia Europea del Medicamento (EMA, por sus siglas en inglés European Medicines Agency) y haber obtenido una autorización de comercialización de la Comisión

Europea.

Un total de 14 Estados miembro participan en esta compra conjunta, de cuyo valor no informó Bruselas.

El portavoz de Salud del Ejecutivo comunitario, Stefan de Keersmaecker, recuerda que el pasado agosto el Ejecutivo comunitario firmó un convenio de compra conjunta con la farmacéutica Hipra Human Health para asegurar el suministro 250 millones de dosis de esta vacuna a los países de la Unión Europea, si bien le corresponde ahora a los países interesados dirigirse al laboratorio para cerrar la compra si mantienen el interés.

Un total de 14 Estados miembro participan en esta compra conjunta, de cuyo valor no informó Bruselas. Entre ellos se encuentran Bélgica, Dinamarca, Irlanda, España, Francia, Italia, Chipre, Letonia, Luxemburgo, Países Bajos, Austria, Portugal, Suecia y Noruega.

RESPALDO ECONÓMICO DEL GOBIERNO

Es preciso recordar que el CDTI, entidad pública dependiente del Ministerio de Ciencia e Innovación, aprobó la financiación para la fase IIb/III de los ensayos clínicos de la vacuna de Hipra, con una ayuda de cerca de 15 millones de euros (14,7 millones).

De esta cantidad, el tramo no reembolsable es de 4,2 millones de euros, en forma de subvención, mientras que los 10,82 millones de euros restantes se efectuaron en los términos previstos en el contrato de préstamo que se cerró con la empresa.

El tramo no reembolsable por parte de la farmacéutica es de 4,2 millones de euros, en forma de subvención

El CDTI financia I+D e innovación empresarial. Es el órgano de la Administración General del Estado (AGE) que apoya la innovación basada en conocimiento, asesorando y ofreciendo ayudas públicas a la innovación mediante subvenciones o ayudas parcialmente reembolsables.

Y es que el Gobierno ha acompañado a la empresa en el desarrollo de la vacuna desde julio de 2020 con una financiación de casi tres millones de euros, así como con asesoramiento científico y regulatorio, en el que han participado tanto el Ministerio de Ciencia e Innovación como el Ministerio de Sanidad.

Fuente: Empresas ConSalud. Disponible en <https://bit.ly/3o97HZt>

Extienden autorizo de vacuna Soberana 02 como dosis de refuerzo

6 abr. El Centro para el Control Estatal de Medicamentos, Equipos y Dispositivos Médicos (CECMED) aprobó la extensión del Autorizo de Uso en Emergencia de la vacuna Soberana 02 como dosis de refuerzo en personas inmunizadas con diferentes vacunas contra la COVID-19.

Así lo informó, mediante su cuenta oficial en Twitter, el Instituto Finlay de Vacunas (IFV), el cual argumentó que el autorizo responde a la existencia de evidencias clínicas de seguridad e inmunogenicidad presentadas por Soberana 02, al ser utilizada como vacuna de refuerzo.

El centro titular del inmunógeno también publicó que el uso de Soberana 02 como dosis de refuerzo tiene una ventaja



adicional, pues intensifica la protección contra el tétanos, por ser una vacuna conjugada que usa el toxoide tetánico como proteína portadora.

En enero de 2022, el propio IFV dio a conocer que Soberana 02 se puede emplear como dosis de refuerzo para la inmunización anti-COVID-19 de cualquier esquema de vacunación precedente, ya sea tres dosis de Abdala (desarrollada por el Centro de Ingeniería Genética y Biotecnología) o dos dosis de Soberana 02 más una de Soberana Plus, o con otras vacunas administradas en el exterior.

Soberana 02 es una vacuna conjugada basada en la plataforma de subunidades proteicas; y se obtiene a partir de la conjugación química de la proteína recombinante del RBD con el toxoide tetánico.

Durante el proceso de vacunación masiva contra la COVID-19 que se lleva a cabo en el país desde 2021, se ha empleado Soberana 02 en un esquema heterólogo de dos dosis combinado con una dosis de Soberana Plus, y ha sido administrada tanto en adultos como en las edades pediátricas entre dos y 18 años.

Fuente: Cubadebate. Disponible en <https://bit.ly/41otMl1>

Bogotá anuncia la primera fábrica de vacunas de Colombia

10 abr. Bogotá ha firmado este lunes un convenio con el Gobierno de Gustavo Petro para crear BogotáBio, la primera fábrica de vacunas de Colombia. La Alcaldía invertirá 354.000 millones de pesos (unos 77 millones de dólares), mientras que el Ministerio de Salud comprará las inmunizaciones y las distribuirá en el resto del país. “Esta fábrica quedará en Bogotá, pero es de Colombia”, ha enfatizado la alcaldesa, Claudia López, durante una rueda de prensa con los ministros de Salud y de Ciencia, Carolina Corcho y Arturo Luna.



Arturo Luna, ministro de Ciencia, Tecnología e Innovación; Carolina Corcho, ministra de Salud y Claudia López, alcaldesa de Bogotá, durante la firma del memorando de entendimiento para la producción de vacunas en Colombia, en Bogotá, el 10 de abril de 2023. MINCIENCIAS COLOMBIA

El objetivo es que la fábrica comience sus operaciones entre 2025 y 2026. Se producirán tres vacunas: contra la COVID-19, la influenza y el neumococo. Un socio privado que aún no está definido será el encargado de apoyar los procesos de transferencia tecnológica.

La ministra de Salud ha destacado que el país recuperará la “soberanía sanitaria” que perdió hace dos décadas, cuando se cerró la producción local y se optó por importar desde Asia, Europa y Norteamérica. “Colombia produjo en 1900 [contra la viruela] y luego en 1917 y 1934 contra la rabia y la fiebre amarilla. En ese momento inició un proceso de soberanía sanitaria, biotecnológica y científica, que desafortunadamente terminó para nuestro país en 2002”, ha comentado. Colombia se sumará ahora a otros países latinoamericanos que ya producen inmunizaciones, como Argentina, Brasil y Cuba.

Tanto la alcaldesa como la ministra han enfatizado que el proyecto es producto de las lecciones que dejó la pandemia de la COVID-19. Corcho ha comentado que Colombia no puede volver a quedar en la posición vulnerable que enfrentó por no tener producción local, al igual que otros países del sur global: “Los seres humanos quedamos clasificados de acuerdo a las capacidades de ingreso de nuestros países (...) en pleno siglo XXI, la humanidad no debería aceptar estas discriminaciones”. López, por su parte, ha remarcado que habrá más retos sanitarios en el futuro y que Colombia debe prepararse. “La pandemia de la COVID-19 fue la más reciente. Pero no será la última que enfrentemos como humanidad”, ha subrayado.

La reforma a la salud que el Congreso debate en estos días ha estado presente durante el anuncio. La alcaldesa ha expresado su apoyo a la iniciativa del Gobierno, que busca robustecer la atención primaria y que el Estado asuma un rol preponderante en la administración del sistema. La ministra, por su parte, le ha agradecido y ha resaltado que el proyecto tiene un capítulo destinado a la investigación tecnológica que necesitan iniciativas como BogotáBio.

El proyecto, sin embargo, no es el primero que se anuncia en Colombia. El Gobierno de Iván Duque anunció en febrero del año pasado el inicio de la construcción de una planta en Antioquia, en asociación con el Grupo SURA. “Hoy se está escribiendo historia en nuestro país”, declaró el entonces presidente durante el acto. No ha habido mayores novedades desde entonces. Sin embargo, López ha explicado este lunes que un artículo en el Plan Nacional de Desarrollo (PND) habilitará al Ejecutivo nacional a también comprar las vacunas que produzcan los demás proyectos en curso.

Fuente: EL PAÍS. Disponible en <https://bit.ly/41rS2Tk>

Cuba y Venezuela relanzan cooperación en el área biofarmacéutica

10 abr. Caracas, Venezuela. – Cuba y Venezuela reimpulsarán proyectos conjuntos en el área biofarmacéutica, incluido el suministro de medicamentos y el desarrollo de ensayos clínicos.

Así lo comentó el Doctor Eduardo Martínez, presidente del Grupo Empresarial BioCubaFarma, tras concluir una visita de trabajo a Caracas, acompañado de directivos de la industria biofarmacéutica cubana.

Según informó el doctor Vicente Verez, director del Instituto Finlay de Vacunas, el intercambio permitirá el uso de inmunógenos cubanos contra la Covid-19 como dosis de refuerzo y para la inmunización pediátrica, entre otros proyectos.

Por su parte, la doctora Marta Ayala, directora del Centro de Ingeniería Genética y Biotecnología, consideró oportuna la visita para fortalecer el uso en Venezuela del Heberprot-P, piedra angular del Programa de Buen Vivir para el diabético.



Cuba y Venezuela estrechan colaboración en el campo biofarmacéutico
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Patentes registradas en Patentscope

Estrategia de búsqueda: *Vaccine in the title or abstract AND 20230401:20230410 as the publication date 29 records*

1.4159234SARS-COV-2-IMPFSTOFF

EP - 05.04.2023

Clasificación Internacional [A61K 39/215](#) N° de solicitud 21818884 Solicitante CANSINO BIOLOGICS INC Inventor/a LI JUNQIANG

Disclosed is a SARS-CoV-2 vaccine, wherein the S protein of SARS-CoV-2 serves as the antigen, and the vaccine comprises an adenoviral vector, and the vaccine induces an improved protective immune response through mucosal immunity, thus preventing SARS-CoV-2 infection. Specifically, when atomized by an appropriate apparatus, the vaccine generates particles of improved uniformity, which can reach the lungs after being inhaled via the nasal cavity or the oral cavity, thus producing a protective immune response with respect to the entire respiratory tract and the lungs, enhancing the effective utilization rate of the vaccine, and increasing the effect of the vaccine.

2.4157857TETANUSIMPFSTOFFPLATTFORM ZUR EINBETTUNG EINES COVID-19-IMPFSTOFFS

EP - 05.04.2023

Clasificación Internacional [C07K 14/005](#) N° de solicitud 21816923 Solicitante PRIME BIO INC Inventor/a SINGH BAL RAM

A Detoxified recombinant tetanus neurotoxin (DrTeNT) prepared by mutation of the active site amino acid residues is an effective vaccine candidate, and is to be used for embedding epitopes of SARS-CoV-2 vims protein for vaccination against Covid-19. DrTeNT is a risk-free vaccine, free of formalin or any other chemical adjuvants. The gene clone of DrTeNT has been used to insert DNA sequences corresponding to the most suitable epitopes of SAR-CoV-2 vims. The resultant combo vaccine is to have higher efficacy for DrTeNT acts as adjuvant, and higher safety as most of the population preimmunized with tetanus vaccine.

3.WO/2023/056089IMMUNOLOGICAL ADJUVANT FORMULATIONS COMPRISING TLR4 AGONIST E6020

WO - 06.04.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/US2022/045529 Solicitante EISAI R&D MANAGEMENT CO., LTD. Inventor/a COLLIN, Nicolas

Disclosed are immunologically active metabolizable lipid nanoparticle in water compositions comprising a non-microbial-lipopolysaccharide-derived TLR-4 receptor agonist in a metabolizable lipid nanoparticle in water composition and vaccine compositions made using said compositions for the prevention and treatment of disease. Methods of preparation, vaccine and treatment kits comprising the adjuvants, and uses of vaccines and vaccine kits comprising the adjuvants are also disclosed.

4.WO/2023/055078ANTICANCER VACCINE COMPOSITION COMPRISING HSP90 ANTIGENIC PEPTIDE AND USE THEREOF

WO - 06.04.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/KR2022/014566 Solicitante ASTON SCI. INC. Inventor/a KANG, Jin Ho

The present invention relates to an anticancer vaccine composition comprising peptides of SEQ ID NO: 1 and SEQ ID NO: 2, which are epitopes of HSP90. A vaccine composition according to the present invention can effectively inhibit tumor growth without serious side effects in a tumor cell line transplantation animal model, and thus the vaccine composition can be effectively used to treat cancer or prevent recurrence.

5.WO/2023/056045COVID19 MRNA VACCINE

WO - 06.04.2023

Clasificación Internacional [A61K 48/00](#) N° de solicitud PCT/US2022/045424 Solicitante BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM Inventor/a HU, Haitao

A solution has been discovered that provides a more effective Coronavirus vaccine. The solution is an mRNA vaccine encoding a SARS-CoV-2 nucleoprotein (N) (mRNA-N) in combination with an mRNA

vaccine encoding SARS-CoV-2 spike protein (S) (mRNA-S). Chemically modified mRNA-N (pseudouridine) and/or chemically modified mRNA-S (pseudouridine) can be synthesized and packaged in lipid nanoparticles (LNP). In mouse and hamster models, it was shown that mRNA-N alone is immunogenic and can significantly diminish viral loads in the mouse lung after prime-boost intramuscular immunization. In addition, the combinatorial mRNA-N/mRNA-S vaccination induces substantially stronger protection against SARS-CoV-2 than vaccination with mRNA-S alone.

6.4157343POLYPEPTIDE DES SCHWEREN AKUTEN ATEMWEGSSYNDROMS CORONAVIRUS 2 (SARS-COV-2) UND VERWENDUNGEN DAVON FÜR IMPFSTOFFZWECKE
EP - 05.04.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud 21728243 Solicitante INST NAT SANTE RECH MED Inventor/a LEVY YVES

The Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) pandemic has undeniably emerged as the largest global health threat to humanity in this century. SARS-CoV-2 vaccines will be essential to reduce morbidity and mortality if the virus establishes itself in the population. The inventors have set up candidate vaccines against SARS-CoV-2. In particular, the inventors have identified specific epitopes to be included in vaccine candidates thanks to *in silico* analysis of the amino-acid sequence of these proteins to map predicted MHC-I and -II epitopes by online software (NetMHC-4.0 and NetMHCII-2.3) and peptide binding prediction software. B cell epitopes were also mapped using online software (BepiPred-2.0 and Discotope), as well as regions rich in epitopes whose sequences are homologous between SARS-CoV-2 and -CoV-1. Finally, the inventors have generated some specific CD40 antibodies comprising one or more SARS-CoV-2 polypeptide(s) of the present invention and that are suitable for vaccine purposes. Therefore, the present invention relates to SARS-CoV-2 polypeptides and uses thereof for vaccine purposes.

7.WO/2023/052996A DNA VACCINE FOR USE IN THE THERAPEUTIC AND/OR PROPHYLACTIC TREATMENT OF TUMOR DISEASES
WO - 06.04.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud PCT/IB2022/059186 Solicitante UNIVERSITA' DEGLI STUDI DI TORINO Inventor/a NOVELLI, Francesco

The invention relates to a recombinant expression vector suitable for use as a prophylactic or therapeutic vaccine against tumor diseases. In addition to a promoter and any additional transcription regulatory elements, the recombinant expression vector of the invention comprises a nucleotide sequence encoding an immunogenic synthetic peptide resulting from the fusion of two or more of the amino acid sequences SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:8, or SEQ ID NO:9 of the human EN01 protein, excluding peptides that correspond to fragments of the native human EN01 protein. The recombinant vector of the invention, or the immunogenic synthetic peptides encoded thereby, are useful as a prophylactic or therapeutic vaccine against tumor diseases.

8.4159864REKOMBINANTER EXPRESSIONSVEKTOR ZUR HERSTELLUNG EINES IMPFSTOFFS AUF CAPSULINBASIS UND HERSTELLUNGSVERFAHREN DAFÜR
EP - 05.04.2023

Clasificación Internacional [C12N 15/70](#) N° de solicitud 21817428 Solicitante INTHERA INC Inventor/a CHOI DEOG YOUNG

The present invention relates to an encapsulin protein and a fusion protein comprising the same, and more specifically to a recombinant expression vector for vaccine production, and a preparation method therefor, the vector comprising polynucleotides that encode a target protein, an encapsulin protein and an RNA interacting domain (RID) protein, so as to improve the expression efficiency of the target protein, and

thus enables a water-soluble vaccine to be produced in a highly efficient manner and a large target protein to be used.

9.4157340AUTOLOGER DENDRITISCHER ZELLIMPFSTOFFSATZ UND VERWENDUNGEN
EP - 05.04.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 21817999 Solicitante AIVITA BIOMEDICAL INC
Inventor/a NISTOR GABRIEL

Disclosed herein is a kit to produce a personalized vaccine based on autologous dendritic cells. The kit contains all the materials, reagents and information necessary to produce a dose of live dendritic cell vaccine against a pathogen organism, part of a pathogen organism, a toxin, a venom, a structure obtained by recombinant method or chemical synthesis.

10.WO/2023/056117SYNERGISTIC COMBINATION OF ALUM AND NON-LIPOSOME, NON-MICELLE
PARTICLE VACCINE ADJUVANTS

WO - 06.04.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud PCT/US2022/074302 Solicitante
MASSACHUSETTS INSTITUTE OF TECHNOLOGY Inventor/a IRVINE, Darrell

Compositions are disclosed that include alum and a non-liposome, non-micelle particle, where the particle comprises a lipid, a sterol, a saponin, and an optional additional non-alum adjuvant, wherein the particle is optionally bound to the alum, and the use of the compositions as vaccine adjuvants and methods for eliciting immune responses.

11.WO/2023/056337TLR8 AGONIST FOR MODULATING IMMUNE RESPONSE

WO - 06.04.2023

Clasificación Internacional [A61K 31/4184](#) N° de solicitud PCT/US2022/077234 Solicitante THE
CHILDREN'S MEDICAL CENTER CORPORATION Inventor/a DOWLING, David, J.

Provided herein are uses for an immunostimulatory compound for stimulating an immune response when administered either alone or as an adjuvant in a vaccine. Also provided herein are kits, compositions, and methods of administration for the compound described for proliferative disease, inflammatory disease, autoimmune disease, infectious disease, or chronic disease, in a subject in need thereof. Using the compound as a vaccine adjuvant enables effective immunization in vulnerable populations.

12.4157344CORONAVIRUS-IMPFFSTOFFE AUF BASIS MULTIVALENTER NUKLEINSÄUREN
EP - 05.04.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud 21766493 Solicitante CUREVAC SE Inventor/a
RAUCH SUSANNE

The present invention is *inter alia* directed to compositions comprising at least one nucleic acid encoding at least one antigenic peptide or protein selected or derived from a Coronavirus membrane protein (M), nucleocapsid protein (N), non-structural protein, and/or accessory protein or an immunogenic fragment or immunogenic variant thereof. The composition may additionally comprise at least one nucleic acid encoding at least one antigenic peptide or protein selected or derived from a Coronavirus spike protein (S). The nucleic acid sequences of the compositions are preferably in association with a polymeric carrier, a polycationic protein or peptide, or a lipid nanoparticle (LNP). The compositions provided herein are for use in treatment or prophylaxis of an infection with at least one Coronavirus, and may therefore be comprised in a vaccine, preferably a multivalent vaccine. The invention is also directed to first and second and further medical uses and to methods of treating or preventing Coronavirus infections.

13.WO/2023/055154RECOMBINANT LIVE ATTENUATED RSV VACCINE STRAIN AND PRODUCTION
METHOD THEREFOR

WO - 06.04.2023

Clasificación Internacional [C12N 7/00](#) N° de solicitud PCT/KR2022/014712 Solicitante SK BIOSCIENCE CO., LTD. Inventor/a SEO, Ki-weon

The present invention provides a recombinant attenuated respiratory syncytial virus (RSV) comprising: i) a nucleic acid encoding a stabilized pre-fusion respiratory syncytial virus (RSV) F protein or an analog, a variant, or a fragment thereof; or ii) a nucleic acid encoding chimeric vesicular stomatitis Indiana virus (VSV) G protein or an analog, a variant, or a fragment thereof, and provides the genome of the recombinant RSV and a recombinant vector containing the genome. The recombinant attenuated RSV can be provided as a live vaccine that is safe and has excellent stability while maintaining infectivity.

14.WO/2023/050484EXPRESSION VECTOR, RECOMBINANT ADENO-ASSOCIATED VIRUS, AND USE THEREOF IN PREPARATION OF 2019 NOVEL CORONAVIRUS VACCINE

WO - 06.04.2023

Clasificación Internacional [C12N 15/864](#) N° de solicitud PCT/CN2021/123797 Solicitante BRAINVTA (WUHAN) CO., LTD Inventor/a PAN, Xing

An expression vector, a recombinant adeno-associated virus, and the use thereof in the preparation of a 2019 novel coronavirus vaccine. The expression vector comprises a target gene expression cassette and an adeno-associated virus inverted terminal repeat sequence located at two ends of the target gene expression cassette, wherein the target gene expression cassette includes, from 5' to 3', an operably linked promoter, a nucleotide sequence encoding a TPA secretion signal peptide, and a nucleotide sequence encoding the receptor binding domain (RBD) of a coronavirus spike protein. The expression vector is used for preparing a recombinant double-stranded adeno-associated virus. The recombinant adeno-associated virus prepared from the expression vector can efficiently and stably secrete and express a coronavirus RBD protein in vivo for a long time, induce the generation of a serum neutralizing antibody that has a neutralizing effect on 2019 novel coronaviruses including variants thereof, and achieve sustained expression, thereby having good application prospects.

15.4157334IMPFSTOFFFORMULIERUNGEN

EP - 05.04.2023

Clasificación Internacional [A61K 39/00](#) N° de solicitud 21728584 Solicitante EQUALLY S A Inventor/a SAINT-REMY JEAN-MARIE

A method to elicit CD4+ T cells with an immune suppressive function towards a given MHC Class II epitope present in a specific target tissue and/or to elicit CD4+ T cells harbouring homeostasis restoration properties for a specific target tissue, based on an MHC Class II epitope modified by the addition of a redox motif, the corresponding modified epitopes, pharmaceutical uses, kits of parts, and gene edition system for use in a patient.

16.WO/2023/055427SMALL MOLECULE ANTAGONISTS OF PF4

WO - 06.04.2023

Clasificación Internacional [A61K 31/727](#) N° de solicitud PCT/US2022/021370 Solicitante NEW YORK BLOOD CENTER, INC. Inventor/a SACHAIS, Bruce

The present application provides a compound of Formula (II): or a pharmaceutically acceptable salt thereof, wherein R1, R2, R3 and R4 are described herein. The methods of using these compounds to inhibit tetramerization of PF4 and to treat the associated diseases and conditions, such as heparin-induced thrombocytopenia and thrombosis (HITT) and vaccine-induced immune thrombotic thrombocytopenia (VITT), methods of making these compounds, and pharmaceutical compositions containing these compounds are also disclosed.

17.4159746STRUKTURELL MODIFIZIERTES CHIMÄRES POLYPEPTID DES MENSCHLICHEN PAPILLOMAVIRUS, REKOMBINANTES PROTEIN MIT DEM POLYPEPTID UND VERWENDUNG DES PROTEINS

EP - 05.04.2023

Clasificación Internacional [C07K 14/005](#) N° de solicitud 21811833 Solicitante GENEMATRIX INC
Inventor/a KIM SOO OK

The present invention relates to a chimeric recombinant protein having a therapeutic effect on cervical cancer by fusing genetic modified E6 and E7, which are carcinogenesis-inducing proteins of human papillomavirus high-risk group type 16, with a fusion protein for increasing immunogenicity, the HPV type 16 E6, E7 chimeric recombinant protein fused with the flagellin fusion protein of the present invention showed the lowest tumor cell volume, and the immune response of specific T cells according to the recombinant antigen was significantly confirmed, and when the prophylactic effect was measured, it was confirmed that the volume of tumor cells was low and the antibody titer was increased, therefore human papillomavirus recombinant antigen of the present invention shows tumor treatment and prophylaxis and can be applied as a therapeutic/prophylactic vaccine composition.

18.WO/2023/054998METHOD FOR PREPARING ALUMINUM-BASED ADJUVANT HAVING ENHANCED EFFICACY

WO - 06.04.2023

Clasificación Internacional [A61K 39/39](#) N° de solicitud PCT/KR2022/014352 Solicitante SK BIOSCIENCE CO., LTD. Inventor/a LEE, Jeong Min

The present application provides: a method for preparing an aluminum-based adjuvant having enhanced efficacy, the method comprising a step for performing an autoclave treatment process; an aluminum-based adjuvant prepared by said method; an immunogenic composition comprising said aluminum-based adjuvant; a kit comprising said immunogenic composition, etc. The aluminum-based adjuvant prepared by said method can be used to improve the safety and effectiveness of conventional vaccine formulations including polysaccharide vaccines, polysaccharide-protein conjugate vaccines, etc.

19.WO/2023/056483PANCORONAVIRUS VACCINES

WO - 06.04.2023

Clasificación Internacional [A61K 39/395](#) N° de solicitud PCT/US2022/077488 Solicitante GRITSTONE BIO, INC. Inventor/a GITLIN, Leonid

Disclosed herein are vaccine compositions that include Pancorona receptor binding domain (RBD) encoding cassettes and/or MHC epitope-encoding cassettes. Also disclosed are nucleotides, cells, and methods associated with the compositions including their use as vaccines.

20.WO/2023/051701MRNA, PROTEIN AND VACCINE AGAINST SARS-COV-2 INFECTION

WO - 06.04.2023

Clasificación Internacional [A61K 39/215](#) N° de solicitud PCT/CN2022/122626 Solicitante WESTGENE BIOPHARMA CO., LTD. Inventor/a WEI, Xiawei

An mRNA against SARS-CoV-2 infection. The template DNA of the mRNA comprises an antigen encoding region. The antigen encoding region encodes a signal peptide-free S protein of a SARS-CoV-2 Delta mutant, wherein the S protein of the Delta mutant has at least one mutation of K986P and V987P mutations; the antigen encoding region encodes an NTD_RBD domain of a SARS-CoV-2 Delta mutant, wherein the NTD_RBD domain of the Delta mutant has a C538S mutation; the antigen encoding region encodes at least one of a RBD domain of a SARS-CoV-2 Delta mutant and an NTD_RBD domain of a SARS-CoV-2 Gamma mutant, wherein the RBD domain of the SARS-CoV-2 Delta mutant has a C538S mutation, and the NTD_RBD domain of the SARS-CoV-2 Gamma mutant has a D80A mutation, an R246I mutation and a C538S mutation, and has Δ 242-244 of a Beta mutant added thereto; or the antigen encoding region encodes an RBD domain of the S protein of a SARS-CoV-2 Delta mutant, an RBD domain of the S protein of a SARS-CoV-2 Beta mutant, an RBD domain of the S protein of a SARS-CoV-2 Gamma mutant and an RBD domain of the S protein of wild-type SARS-CoV-2.

21.WO/2023/051926TREATMENT INVOLVING NON-IMMUNOGENIC RNA FOR ANTIGEN VACCINATION AND PD-1 AXIS BINDING ANTAGONISTS

WO - 06.04.2023

Clasificación Internacional [C07K 16/24](#) N° de solicitud PCT/EP2021/077021 Solicitante BIONTECH SE Inventor/a SAHIN, Ugur

The present disclosure relates to methods and agents for antigen vaccination and inducing effective antigen-specific immune effector cell responses such as T cell responses. These methods and agents are, in particular, useful for the treatment of diseases characterized by diseased cells expressing an antigen the immune effector cells are directed to. In some embodiments, the present disclosure relates to methods comprising administering to a subject (i) non-immunogenic RNA encoding a peptide or polypeptide comprising an epitope for inducing an immune response against an antigen in the subject, i.e., non-immunogenic RNA encoding vaccine antigen; and (ii) a PD-1 axis binding antagonist such as an anti-PD-1 antibody and/or an anti-PD-L1 antibody.

22.WO/2023/056335METHODS AND COMPOSITIONS FOR RECOMBINANT DENGUE VIRUSES FOR VACCINE AND DIAGNOSTIC DEVELOPMENT

WO - 06.04.2023

Clasificación Internacional [C07K 14/005](#) N° de solicitud PCT/US2022/077232 Solicitante THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL Inventor/a BARIC, Ralph

The present invention provides compositions and methods of use comprising a chimeric dengue virus E glycoprotein comprising a dengue virus E glycoprotein backbone, which comprises amino acid substitutions that may introduce a domain and/or an epitope that is recognized by an antibody from a dengue virus serotype that is different from the dengue virus serotype of the dengue virus E glycoprotein backbone.

23.WO/2023/056245TRANSMISSION-BLOCKING VACCINE AGAINST BABESIA

WO - 06.04.2023

Clasificación Internacional [C07K 14/44](#) N° de solicitud PCT/US2022/077072 Solicitante THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY OF AGRICULTURE Inventor/a SUAREZ, Carlos E.

The present invention relates to a babesia antigen comprising at least a portion of a gametocyte HAPLESS2/GCS1 (HAP2) protein, vectors and cells expressing such antigen, compositions and kits comprising such antigens, and methods of using such antigens to interfere with the Babesia transmission by competent ticks.

24.WO/2023/052531TREATMENT INVOLVING NON-IMMUNOGENIC RNA FOR ANTIGEN VACCINATION AND PD-1 AXIS BINDING ANTAGONISTS

WO - 06.04.2023

Clasificación Internacional [C07K 16/24](#) N° de solicitud PCT/EP2022/077163 Solicitante BIONTECH SE Inventor/a SAHIN, Ugur

The present disclosure relates to methods and agents for antigen vaccination and inducing effective antigen-specific immune effector cell responses such as T cell responses. These methods and agents are, in particular, useful for the treatment of diseases characterized by diseased cells expressing an antigen the immune effector cells are directed to. In some embodiments, the present disclosure relates to methods comprising administering to a subject (i) non-immunogenic RNA encoding a peptide or polypeptide comprising an epitope for inducing an immune response against an antigen in the subject, i.e., non-immunogenic RNA encoding vaccine antigen; and (ii) a PD-1 axis binding antagonist such as an anti-PD-1 antibody and/or an anti-PD-L1 antibody.

25.4157345MANIPULIERTES CORONAVIRUS-SPIKE (S)-PROTEIN UND VERFAHREN ZUR VERWENDUNG DAVON

EP - 05.04.2023

Clasificación Internacional [A61K 39/12](#) N° de solicitud 21811955 Solicitante UNIV TEXAS Inventor/a MCLELLAN JASON

Provided herein are engineered Coronavirus S proteins, such as engineered SARS-CoV-2 S proteins. In some aspects, the engineered S proteins exhibit enhanced conformational stability and/or antigenicity. Methods are also provided for use of engineered proteins as diagnostics, in screening platforms and/or in vaccine compositions.

26.4159233PHARMAZEUTISCHE ZUSAMMENSETZUNG MIT POLYNUKLEOTIDEN UND VERWENDUNG DAVON ZUR PRÄVENTION ODER BEHANDLUNG VON COVID-19

EP - 05.04.2023

Clasificación Internacional [A61K 39/215](#) N° de solicitud 21812811 Solicitante BEIJING YISHENG BIOTECHNOLOGY CO LTD Inventor/a ZHANG YI

The present application relates to a pharmaceutical composition comprising polynucleotides and use thereof for prevention or treatment of COVID-19. More specifically, disclosed in the present application is a composition used for prevention or treatment of COVID-19, comprising a polyribonucleosinic-polyribocytidylic acid, an antibiotic or polyamino compound, a positive ion, and an optional antigen derived from novel coronavirus SARS-CoV-2. Also provided is use of the composition in preparation of a drug or vaccine for prevention or treatment of novel coronavirus SARS-CoV-2.

27.2023900839Nematode Vaccine

AU - 06.04.2023

Clasificación Internacional N° de solicitud 2023900839 Solicitante Umair, Saleh Inventor/a Umair, Saleh

28.4157347CORONAVIRUS-IMPfstoffkonstrukte und Verfahren zur Herstellung und Verwendung davon

EP - 05.04.2023

Clasificación Internacional [A61K 39/235](#) N° de solicitud 21817848 Solicitante WASHINGTON UNIVERSITY ST LOUIS Inventor/a CUIEL DAVID

Compositions and methods for treating a viral infection may comprise use of an adenoviral vector. An adenoviral vector of the present disclosure may comprise a non-human adenoviral genome with one or more gene locus functionally removed and a transgene. A method of treating a viral infection may comprise administering a composition comprising an adenoviral vector of the present disclosure, to a subject and reducing the infectivity or transmission of the virus. Intranasal administration provides enhance protection of the upper respiratory tract of a subject relative to intramuscular administration.

29.WO/2023/056334TLR4 AGONIST FOR MODULATING IMMUNE RESPONSE

WO - 06.04.2023

Clasificación Internacional [A61P 31/04](#) N° de solicitud PCT/US2022/077231 Solicitante THE CHILDREN'S MEDICAL CENTER CORPORATION Inventor/a LEVY, Ofer

Provided herein are uses for an immunostimulatory compound for stimulating an immune response when administered either alone or as an adjuvant in a vaccine. Also provided herein are kits, compositions, and methods of administration for the compound described.

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