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

- 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.

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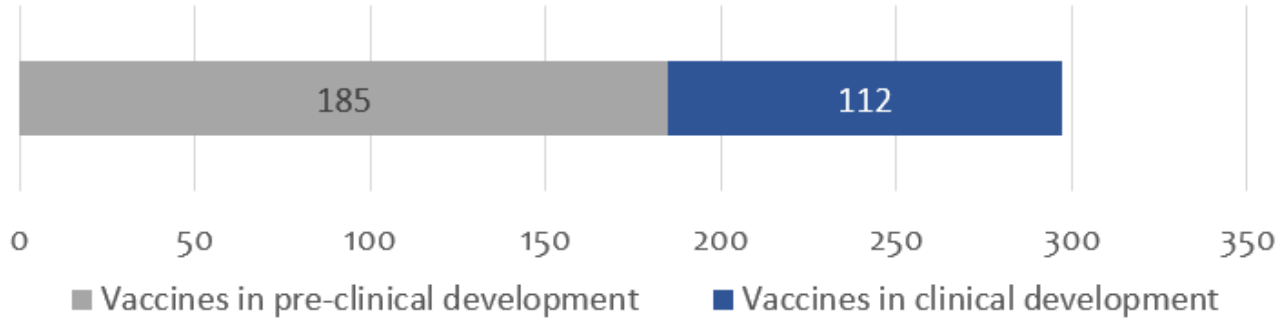
Resumen de la información publicada por la OMS sobre los candidatos vacunales contra la COVID-19 en desarrollo a nivel mundial

Última actualización por la OMS: 31 de agosto de 2021.

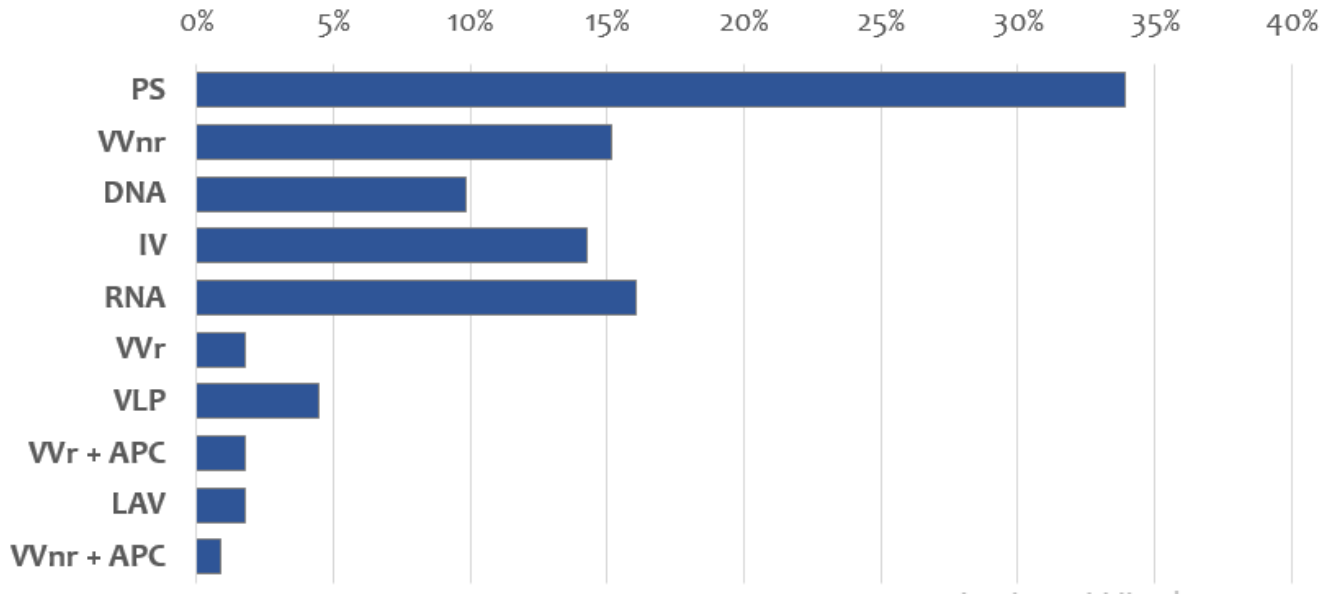
Fuente de información utilizada: World Health Organization | R&DBlueprint Powering research to prevent epidemics

112 candidatos vacunales en evaluación clínica y 185 en evaluación preclínica.



Candidatos vacunales en evaluación clínica por plataforma

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	38	34%
VVnr	Viral Vector (non-replicating)	17	15%
DNA	DNA	11	10%
IV	Inactivated Virus	16	14%
RNA	RNA	18	16%
VVr	Viral Vector (replicating)	2	2%
VLP	Virus Like Particle	5	4%
VVr + APC	VVr + Antigen Presenting Cell	2	2%
LAV	Live Attenuated Virus	2	2%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
		112	



Candidatos vacunales más avanzados a nivel global

Desarrollador de la vacuna/fabricante/país	Plataforma de la vacuna	Fase
Sinovac/China	Virus Inactivado	4
Wuhan Institute of Biological Products/Sinopharm/China	Virus Inactivado	3
Beijing Institute of Biological Products/Sinopharm/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
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 Biopharmac./Inst. Microbiol, Chin Acad Sci	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
Zydus Cadila Healthcare Ltd./India	ADN	3
Bharat Biotech/India	Virus Inactivado	3
Sanofi Pasteur + GSK/Francia/Gran Bretaña	Subunidad proteica	3
Shenzhen Kangtai Biological Products Co., Ltd./ China	Virus Inactivado	3
Vaxine Pty Ltd. + CinnaGen Co./Australia, Irán	Subunidad proteica	3
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	Subunidad proteica	3
Acad Milit Sci (AMS) Walvax Biotechnol, Suzhou Abogen Biosci/China	ARN	3
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	3
Valneva, National Institute for Health Research, Reino Unido	Virus inactivado	3
Nanogen Pharmaceutical Biotechnology/Vietnam	Subunidad proteica	3
Erciyes University/Turquía	Virus inactivado	3
SK Bioscience Co., Ltd/Corea del Sur + CEPI	Subunidad proteica	3

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
Vaxart/Estados Unidos	Vector viral no replicativo	Oral	1
Univ. Hong Kong, Xiamen Univ./Beiging Wantai Biol. Pharm./China	Vector viral replicativo	Intranasal	2
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	1
Center for Genetic Engineering and Biotechnology (CIGB)/Cuba	Subunidad proteica	Intranasal	1/2
Razi Vaccine and Serum Research Institute/India	Subunidad proteica	Intranasal	2
Bharat Biotech International Limited/India	Vector viral no replicativo	Intranasal	1
Meissa Vaccines, Inc./Estados Unidos	Virus vivo atenuado	Intranasal	1
Laboratorio Avi-Mex/México	Virus inactivado	IM o IN	1
USSF + VaxForm/Estados Unidos	Subunidad proteica	Oral	1
CyanVac LLC/Estados Unidos	Vector viral no replicativo	Intranasal	1

Noticias en la Web

Aprueba el CECMED el Autorizo de Uso en Emergencia de las Vacunas cubanas SOBERANA 02 y SOBERANA PLUS

20 ago. El Centro para el Control Estatal de Medicamentos, Equipos y Dispositivos Médicos (CECMED) decidió en el día de hoy, otorgar el Autorizo de Uso de Emergencia (AUE) a los candidatos vacunales SOBERANA 02 y SOBERANA PLUS en su esquema heterólogo de inmunización, de conformidad y en observancia a lo dispuesto en las regulaciones y disposiciones vigentes, una vez confirmado que se cumple con los requisitos y parámetros exigidos en cuanto a calidad, seguridad y eficacia.

Después de concluir un riguroso proceso de evaluación del expediente presentado ante el CECMED para la solicitud del AUE y haber realizado las inspecciones a las plantas involucradas en el proceso productivo, una vez confirmado que se cumple con los requisitos establecidos y a partir de los datos obtenidos en los Ensayos Clínicos Fase I, II y III, llegando a demostrar una eficacia en la prevención de formas sintomáticas de la enfermedad del 91.2 %, así como un adecuado perfil de seguridad.

¿Qué es el autorizo de uso de emergencia?

En virtud de un AUE, las autoridades reguladoras nacionales como el CECMED en Cuba, pueden autorizar el uso de medicamentos, incluidas las vacunas, equipos y dispositivos médicos durante las emergencias de salud pública, como la actual pandemia causada por el COVID-19, cuando se hayan cumplido ciertos criterios regulatorios acordes a los estándares internacionales, tomando en consideración la totalidad de la evidencia científica.

Dicho estatus regulatorio posibilita el uso masivo del inmunógeno –oficialmente como vacuna– en el territorio nacional y su comercialización a otras naciones mientras se mantenga la emergencia sanitaria, por lo que el camino continúa hacia la obtención del Registro Sanitario definitivo.

Fuente: Blog Instituto Finlay de Vacunas. Disponible en https://cutt.ly/2WhsTIk

Ampliará Cuba vacunación anti COVID-19

21 ago. Ante el incremento de confirmados con el virus SARS-Cov-2, por la colonización de la cepa Delta, Cuba ampliará vacunación masiva anti COVID-19 con la incorporación de nuevos territorios y grupos vulnerables.

Ileana Morales, directora de Ciencia e Innovación Tecnológica del Ministerio de Salud Pública, informó que este sábado comenzará la inmunización con Abdala en otros 22 municipios del país y a diabéticos y cardiópatas de todo el archipiélago.

En el espacio Mesa Redonda, precisó que prevén abarcar a las demarcaciones restantes de Ciego de Ávila, Santiago de Cuba y Guantánamo, con delicada situación epidemiológica.

Morales indicó que casi 800 mil personas se beneficiarán del inmunógeno de producción nacional con probada eficacia en la prevención de la enfermedad sintomática y continuarán la vacunación en las cabeceras provinciales.

En la actualidad, 58 municipios participan en la campaña de inmunización y 24 de ellos ya completaron la pauta de tres dosis, donde ya se constata –de forma preliminar- la efectividad del proceso, apuntó.

La especialista remarcó que Isla de la Juventud, con control sostenido de la epidemia, y La Habana evidencian disminución de la mortalidad y letalidad del nuevo coronavirus, dos de las variables fundamentales sobre las que actúan estos fármacos.

Al respecto, enfatizó el impacto positivo de la aplicación de las vacunas cubanas en la reducción de fallecidos y contagiados en relación a los pronósticos de los modelos matemáticos, que vaticinaron más de 10 mil confirmados diarios en los días finales de julio e inicio de agosto.

Refirió, además, que la medición de la efectividad se realiza de la comparación entre vacunados y no vacunados.

Morales destacó el ritmo de inmunización de Cuba, entre los primeros del orbe, tanto por la cantidad de dosis administradas desde el inicio del proceso (12,3 millones) como por la adherencia al esquema, y en ese sentido agradeció a la población que procura empezar y concluir el tratamiento.

Aplaudió el esfuerzo de la industria biotecnológica por la entrega de 14 millones de dosis de los inmunógenos al sistema nacional de Salud, lo cual se acompaña de la voluntad estatal de vacunar a la mayor cantidad de personas, lo cual tendrá un empuje decisivo, luego de culminar los ensayos clínicos en población pediátrica, de las más afectadas por la COVID-19.

La directiva felicitó a los científicos y trabajadores del Instituto Finlay de Vacunas por la autorización hoy de uso de emergencia de Soberana 02 y Soberana Plus, en su esquema heterólogo y extendió la gratitud a los del Centro de Ingeniería Genética y Biotecnología por el logro de Abdala y los alentadores resultados de Mambisa –aún en estudio clínico- para los convalecientes.

Fuente: CUBA.CU. Disponible en https://cutt.ly/ZWhygOE

EEUU aprueba la vacuna contra COVID-19 de Pfizer

23 ago. Estados Unidos aprobó el lunes la vacuna contra COVID-19 de Pfizer, un hito que puede ayudar a aumentar la confianza del público en las inyecciones.

La vacuna fabricada por Pfizer y su socio BioNTech ahora cuenta con el respaldo más fuerte de la Administración de Alimentos y Medicamentos (FDA). Ya se han administrado más de 200 millones de dosis de Pfizer en el país y cientos de millones más en todo el mundo, desde que comenzó el uso de emergencia en diciembre.

"El público puede estar muy seguro de que esta vacuna cumple con los altos estándares de inocuidad, eficacia y calidad de fabricación que la FDA exige de un producto aprobado", dijo la comisionada en funciones de dicha agencia, Janet Woodcock. "El hito de hoy nos acerca un paso más a alterar el curso de esta pandemia en Estados Unidos".

Estados Unidos es el primer país en aprobar completamente la vacuna, según Pfizer. El director general Albert Bourla dijo en un comunicado que esperaba que la decisión "ayude a aumentar la confianza en nuestra vacuna, ya que la vacunación sigue siendo la mejor herramienta que tenemos para ayudar a proteger vidas. "

La acción de la FDA también puede impulsar más mandatos de vacunas por parte de empresas, universidades y gobiernos locales. Este mes, la ciudad de Nueva York, Nueva Orleans y San Francisco impusieron requisitos de prueba de vacunación en restaurantes, bares y otros lugares cerrados. A nivel federal, el presidente Joe Biden exige que los trabajadores del gobierno firmen formularios que certifiquen que han sido vacunados o que se sometan a pruebas periódicas y otros requisitos.

La FDA, al igual que los reguladores en Europa y gran parte del mundo, inicialmente permitió el uso de emergencia de la vacuna de Pfizer basándose en un estudio que siguió a 44.000 personas de 16 años o más durante al menos dos meses, el período en el que suelen aparecer efectos secundarios graves.

Fuente: Local10.com. Disponible en https://cutt.ly/KWhf2Iy

La FDA advierte contra el uso no autorizado de la vacuna Pfizer/ BioNTech de covid-19 en niños menores de 12 años

24 ago. Aunque la Administración de Medicamentos y Alimentos de EE.UU. (FDA, por sus siglas en inglés) ha aprobado por completo la vacuna Pfizer/BioNTech contra el covid-19 para personas de 16 años o más, y sigue estando autorizada para personas de al menos 12 años, la agencia advierte contra el "uso fuera de indicación" de la vacuna en niños menores de 12 años. Dice que hacerlo "no sería apropiado".

El "uso fuera de indicación" se refiere a un producto aprobado que se usa de una manera o en un paciente para el que no fue necesariamente aprobado; ocurre comúnmente con algunos medicamentos, como cuando se usa una quimioterapia aprobada para un tipo de cáncer para tratar un tipo diferente.

La vacuna Pfizer/BioNTech contra el covid-19 no está actualmente aprobada ni autorizada para niños menores de 12 años, y aún no se ha determinado la dosis adecuada para este grupo de edad.

"No tenemos datos sobre la dosis adecuada ni tenemos datos completos sobre la seguridad en niños menores de lo que figura en la autorización de uso de emergencia", dijo la comisionada interina de la FDA, la Dra. Janet Woodcock, durante una conferencia telefónica el lunes.

"Por lo tanto, sería una gran preocupación que la gente vacunara a los niños porque no tenemos la dosis adecuada y no tenemos los datos de seguridad, ni tampoco todos los datos de eficacia", dijo Woodcock. "No recomendamos que los niños menores de 12 años se vacunen con esta vacuna. No sería apropiado".

Mientras tanto, la FDA y la Academia Estadounidense de Pediatría (AAP) recomiendan encarecidamente que todos los adolescentes elegibles, de entre 12 y 17 años, se vacunen lo antes posible, especialmente porque la variante delta del coronavirus altamente transmisible continúa circulando en todo el país.

Hasta la semana pasada, la AAP reportó 180.000 nuevos casos de covid-19 entre niños y adolescentes, según la Academia.

Hasta ahora, alrededor de 8,5 millones o el 34% de todos los adolescentes de 12 a 17 años están completamente vacunados contra el covid-19.

'No solo adultos pequeños'

Está claro que muchos padres están ansiosos por vacunar a los niños más pequeños, pero Woodcock dijo que los niños "no son solo adultos pequeños".

"Realmente tendríamos que tener los datos y la dosis apropiada antes de recomendar que los niños sean vacunados", agregó Woodcock el lunes.

La AAP también "desaconseja enérgicamente" el uso de la vacuna fuera de indicación en niños menores de 12 años, señalando que la dosis de la vacuna para adultos es mucho más alta que las dosis que se están probando en niños pequeños.

"Los ensayos clínicos para la vacuna contra el covid-19 en niños de 11 años o menos están en marcha, y necesitamos ver los datos de esos estudios antes de aplicar esta vacuna a los niños más pequeños", dijo el Dr. Lee Savio Beers, presidente de la AAP en un comunicado el lunes, tras la aprobación de la FDA.

"La dosis puede ser diferente para edades más jóvenes", dijo Beers. "La AAP recomienda no administrar la vacuna a niños menores de 12 años hasta que la FDA lo autorice".

La Dra. Yvonne Maldonado, presidenta del Comité de Enfermedades Infecciosas de la AAP, también instó a los médicos a esperar hasta que se completen los ensayos clínicos en niños pequeños antes de administrar la vacuna a los menores de 12 años.

"No queremos que los médicos individuales estén calculando las dosis y programas de dosificación uno por uno para los niños más pequeños según la experiencia con la vacuna en pacientes mayores", dijo Maldonado en un comunicado el lunes.

"Debemos hacer esto basándonos en toda la evidencia para cada grupo de edad, y para eso necesitamos que se completen los ensayos. Sé que los padres están ansiosos por proteger a sus hijos, pero queremos asegurarnos de que los niños tengan el beneficio completo de ensayos clínicos en curso".

Ensayos en curso de la vacuna de covid-19 en niños más pequeños

En una carta enviada a Woodcock a principios de este mes, la AAP pidió a la FDA que trabaje enérgicamente para autorizar una vacuna para niños menores de 12 años.

Pfizer ha dicho que espera tener datos de un ensayo de vacuna en niños de 5 a 11 años para fines de septiembre, y la compañía podría solicitar que se autorice su vacuna para las edades más jóvenes poco después. La compañía también ha dicho que los datos para niños aún más pequeños, de 2 a 5 años, podrían estar disponibles poco después.

Moderna y Johnson & Johnson también están trabajando en estudios en niños.

El mes pasado, la FDA pidió a Pfizer y Moderna que duplicaran la cantidad de niños de 5 a 11 años en los ensayos clínicos. La FDA también solicitó seis meses de datos de seguridad de seguimiento, en lugar de los dos meses que pidió con los adultos.

"Sabemos que los padres están ansiosos por poder brindarles a sus hijos la protección de esta vacuna, y la Academia Estadounidense de Pediatría comparte ese sentimiento de urgencia", dijo Beers el lunes. "La variante delta ha llevado a un aumento significativo en el número de niños y adultos infectados con el virus. Mientras esperamos que se autorice una vacuna para los niños más pequeños, es importante que todos los que sean elegibles ahora se vacunen. Eso ayudará a reducir la propagación del virus y proteger a aquellos que son demasiado jóvenes para ser vacunados".

Fuente: CNN en español. Disponible en https://cutt.ly/sWhKzeS

Vietnam says Cuba to supply COVID-19 vaccine, transfer technology

Aug 24. Cuba will supply large quantities of its home-grown COVID-19 vaccine, Abdala, to Vietnam and also transfer the production technology to the Southeast Asian country by the end of the year, the Vietnamese health ministry said on Tuesday.

After successfully containing the disease for much of the pandemic, Vietnam has been struggling to control its worst outbreak to date, with a spike in infections and deaths ramping up pressure on authorities to speed up vaccinations.

“Cuba will send a large number of COVID doses and a team to Vietnam to support technology transfer by the end of this year,” the health ministry said in a statement, without specifying the number of doses.

Cuba has said its three-shot Abdala vaccine was 92.28% effective against the coronavirus in last-stage clinical trials in June.

Vietnam has so far signed deals for recombinant DNA protein and mRNA vaccine technology transfer and is also in talk with U.S. company Pfizer about locating a vaccine plant in the country.

The Southeast Asian country has secured more than 23 million doses of COVID-19 vaccines and expects to receive at least 50 million doses in the fourth quarter, the health ministry said.

Vietnam’s inoculation programme, which started in March, is still at an early stage with just 1.9% of the country’s 98 million people fully vaccinated – one of the lowest rates in the region.

Fuente: WTVB. Disponible en https://cutt.ly/TWhFwS1

Destacan efectividad de las vacunas cubanas anti-COVID-19

24 ago. Las evidencias que existen hasta el momento sobre la efectividad de las vacunas cubanas, incluso en el escenario de circulación de la cepa Delta, son muy buenas y alentadoras, aseguró el doctor Eduardo Martínez Díaz, presidente del grupo empresarial BioCubaFarma.

En una entrevista concedida al diario Granma, Martínez Díaz señaló que aún se debe seguir midiendo la repercusión en la reducción de la gravedad y la muerte, en la medida en que avanza la inmunización de la población.

El titular de BioCubaFarma explicó a Granma que en los últimos meses ha existido en el país un incremento significativo de la incidencia de la enfermedad de la COVID-19, que a su vez ha llevado a un aumento de personas con enfermedad severa y fallecidas.

La causa fundamental de este fenómeno, detalló, está dada por la llegada a Cuba de la variante Delta del virus SARS-COV-2 y su rápida expansión; además, resaltó que esta nueva cepa tiene como características una mayor transmisibilidad, la más alta de todas las variantes surgidas hasta el momento.

En cuanto a los datos preliminares sobre la efectividad de las vacunas cubanas, destacó que según los datos que ha brindado el Ministerio de Salud, solo el 0,96 por ciento (%) de esas personas completamente vacunadas se habían infectado con el virus y la sobrevivencia era del 99,9956 %, o sea, solo el 0,0044 % habían fallecido.

Mientras, en la provincia de La Habana, donde más se ha podido avanzar en la vacunación, se ha encontrado que la mortalidad por cien mil habitantes entre las personas completamente vacunadas al cierre del 14 de agosto era de 2,7; y que entre los no vacunados era de 117, o sea, una reducción de la mortalidad de 43 veces.

Refirió que también luego de aplicadas más de diez millones de dosis se ha encontrado una baja tasa de efectos secundarios, lo que ratifica el alto nivel de seguridad de nuestros preparados vacunales.

Lea aquí: Mantienen efectividad inmunógenos cubanos anti COVID-19

Sobre el proceso de vacunación en la población, las edades pediátricas, los convalecientes y los alérgicos al Tiomersal, Martínez Díaz aseguró que lograr la inmunización en 2021 de toda la población es un compromiso que se va a cumplir.

En septiembre el ritmo de aplicación de vacunas debe ser mayor. Se prevé acelerar la vacunación de las personas de edad avanzada y con enfermedades crónicas, que las hacen más susceptibles a las complicaciones y la muerte. Ese mismo mes esperamos tener autorización para comenzar la vacunación masiva de la población pediátrica de tres años en adelante, indicó.

Agregó que entre septiembre y octubre también se suministrará vacuna sin Tiomersal para las personas alérgicas a este compuesto que se utiliza como preservante, y se vacunarán con una dosis los convalecientes de la COVID-19 en nuestro país.

Estimamos que en noviembre prácticamente toda la población cubana estará vacunada. Hemos tenido que superar grandes retos, fuertes obstáculos que impone el bloqueo económico para producir a gran escala los preparados vacunales, pero lo estamos logrando, resaltó.

Fuente: Agencia Cubana de Noticias. Disponible en https://cutt.ly/FWhLPmF

La vacuna covid-19 de refuerzo de Johnson & Johnson genera un gran aumento de la respuesta inmunitaria, según la empresa

25 ago. Las dosis de refuerzo de la vacuna contra el covid-19 de Johnson & Johnson generaron un gran aumento de los anticuerpos, la primera línea de defensa del sistema inmunitario contra la infección, informó la empresa este miércoles.

Las personas que recibieron una dosis de refuerzo entre seis y ocho meses después de las primeras inyecciones de J&J vieron cómo los anticuerpos se multiplicaban por nueve en comparación con los 28 días posteriores a la primera inyección, dijo Johnson & Johnson.

Los datos proceden de dos estudios de fase 2 llevados a cabo en Estados Unidos y Europa, dijo la empresa en un comunicado. Algunas de las aproximadamente 2.000 personas que participaron en los estudios recibieron dosis de refuerzo seis meses después de sus primeras dosis de la vacuna Janssen de J&J.

"Los nuevos datos provisionales de estos estudios demuestran que una dosis de refuerzo de la vacuna covid-19 de Johnson & Johnson generó un aumento rápido y robusto de los anticuerpos anti-spike, nueve veces mayor que 28 días después de la vacunación primaria de una sola dosis", dijo la compañía en su declaración.

"Hemos establecido que una sola inyección de nuestra vacuna covid-19 genera respuestas inmunitarias fuertes y robustas que son duraderas y persistentes durante ocho meses. Con estos nuevos datos, también vemos que una dosis de refuerzo de la vacuna covid-19 de Johnson & Johnson aumenta aún más las respuestas de anticuerpos entre los participantes del estudio que habían recibido previamente nuestra vacuna", dijo en un comunicado el Dr. Mathai Mammen, jefe global de investigación y desarrollo de Janssen.

Diálogo con autoridades e incertidumbre en los vacunados

J&J dijo que estaba en conversaciones con la Administración de Alimentos y Medicamentos de EE.UU. (FDA, por sus siglas en inglés), los Centros para el Control y la Prevención de Enfermedades de EE.UU. (CDC), la Agencia Europea de Medicamentos, la Organización Mundial de la Salud y otras autoridades sanitarias sobre la necesidad de ofrecer una dosis de refuerzo de la vacuna Janssen.

"Esperamos discutir con las autoridades de salud pública una posible estrategia para nuestra vacuna Johnson & Johnson covid-19, reforzando ocho meses o más después de la vacunación primaria de una sola dosis", añadió Mammen.

Muchas personas que recibieron la vacuna de J&J han estado pidiendo información sobre si necesitarán una dosis de refuerzo. Los funcionarios del gobierno federal de EE.UU. han dicho que se están preparando para empezar a ofrecer una dosis de refuerzo a las personas que recibieron la vacuna covid-19 de Moderna o Pfizer.

Es luego de que los datos mostraran que los refuerzos pueden aumentar la

respuesta de los anticuerpos, y después de que los estudios empezaran a mostrar un aumento de las infecciones tanto en las personas vacunadas como en las no vacunadas. Los expertos afirman que la variante delta, más transmisible, tiene parte de la culpa, así como la disminución de la respuesta inmunitaria.

La vacuna de Janssen se autorizó a finales de febrero, más de dos meses después de que se autorizaran las vacunas de Moderna y Pfizer. Unos 14 millones de estadounidenses han recibido la vacuna de J&J, según los CDC.

El Dr. Dan Barouch, investigador de vacunas del Centro Médico Beth Israel Deaconess y de la Facultad de Medicina de Harvard, que no participa en los dos estudios clínicos pero que colabora en el estudio de las vacunas de J&J, dijo que los resultados apoyan la aplicación de una vacuna de refuerzo, pero sólo después de un retraso.

"El refuerzo a los seis meses va a parecer muy impresionante y sustancialmente mayor que lo que ya se ha informado en términos de refuerzo a los dos meses. Eso es significativo porque, en mi opinión, el refuerzo no debería ser a los dos meses, sino que realmente debería ser a los seis meses o más tarde", dijo Barouch a CNN.

Investigadores, optimistas sobre una protección inmunitaria

Ninguno de los estudios analizó la eficacia de la vacuna en el mundo real. Por eso, la empresa no ha demostrado que las personas que reciben refuerzos tengan menos probabilidades de infectarse o de desarrollar una enfermedad grave. Pero los investigadores están empezando a coincidir en que los niveles de anticuerpos indican una protección inmunitaria.

La vacuna de Johnson & Johnson se fabrica de forma diferente a la de Pfizer y Moderna. Esas dos vacunas utilizan ARN mensajero o ARNm, encerrado en pequeñas partículas de lípidos, para llevar las instrucciones al cuerpo para iniciar una respuesta inmunitaria.

La vacuna covid-19 de Janssen utiliza un virus del resfriado común lisiado, llamado adenovirus, para transmitir instrucciones similares. Se temía que una dosis de refuerzo de este tipo de vacunas con vectores víricos no fuera eficaz debido a la posibilidad de que el organismo generara una respuesta inmunitaria también contra el vector.

"Existía la preocupación teórica de que la generación de anticuerpos antivectoriales por la primera inyección pudiera impedir su uso de nuevo", dijo Barouch. "Creo que estos datos acaban con eso", afirmó.

Las autoridades sanitarias federales han dicho que creen que en algún momento será necesaria una dosis de refuerzo de la vacuna de Janssen.

"Estoy bastante seguro de que la FDA, los CDC, los NIH y la Casa Blanca utilizarán estos datos para justificar o recomendar probablemente un refuerzo para las personas vacunadas con J&J, probablemente con una segunda inyección de J&J", dijo Barouch.

Fuente: CNN en español. Disponible en https://cutt.ly/vWhXh4U

Cómo el primer virus descubierto por la ciencia puede contribuir a luchar contra el SARS-CoV-2

26 ago. Todo el mundo ya conoce la utilidad de los test de diagnóstico de COVID-19. Unos detectan directamente los componentes del virus, por ejemplo el genoma (PCR), o antígenos (test de Ag) y otros detectan anticuerpos (Ac).

La importancia de estas pruebas para controlar los contagios ha quedado muy clara durante la pandemia. Saber si alguien ha sido infectado para, mediante el aislamiento, prevenir contagios se ha convertido en la estrategia básica de control, junto con la vacunación.

Los test de detección de anticuerpos son útiles en cribados serológicos, para conocer el estatus inmunológico de la población, estimar su grado de protección frente a la infección, etc. A nivel individual pueden ayudar a establecer un juicio clínico en pacientes con COVID-19.

Detección de antígenos

Para detectar anticuerpos frente al SARS-CoV-2 es necesario disponer de un antígeno derivado del virus. Un antígeno es una molécula distintiva del virus a la cual se unen los anticuerpos que intervienen en la respuesta inmune frente a la infección.

Los antígenos más útiles y, por tanto, más empleados en el diagnóstico de la COVID-19 son los derivados de la proteína S (espícula) y de la N (nucleocápsida). Numerosos test se basan en la utilización de estas dos proteínas, completas o diferentes fragmentos derivados de ellas.

La tecnología del ADN recombinante permite obtener versiones de estas proteínas (versiones "recombinantes") utilizando sistemas heterólogos, independientes del virus que originalmente las produce. Por ejemplo, se pueden utilizar bacterias, levaduras, células de insecto, de mamífero, etc.

La ventaja más importante de estos sistemas es que permiten el cultivo a gran escala. Además, lo hacen independiente de la producción de virus in vitro, un procedimiento que plantea serios riesgos de bioseguridad. De este modo es posible obtener cantidades de antígenos a escala industrial, apropiada para las aplicaciones diagnósticas mencionadas.

Plantas para obtener proteínas del SARS-CoV-2

Un interesante sistema heterólogo de expresión de proteínas recombinantes lo constituyen las plantas. Estas presentan ciertas ventajas respecto a los sistemas ya mencionados, como por ejemplo su fácil escalado, lo que abarata la producción considerablemente.

Hace unos meses, nuestro grupo en el Centro de Investigación en Sanidad Animal (CISA) del INIA-CSIC comenzó una colaboración con biotecnólogos del Centro de Biotecnología y Genómica de Plantas (CBGP), también del INIA-CSIC, y de la empresa biotecnológica AGRENVEC, que ha terminado felizmente en la publicación de un artículo en Frontiers in Plant Science.

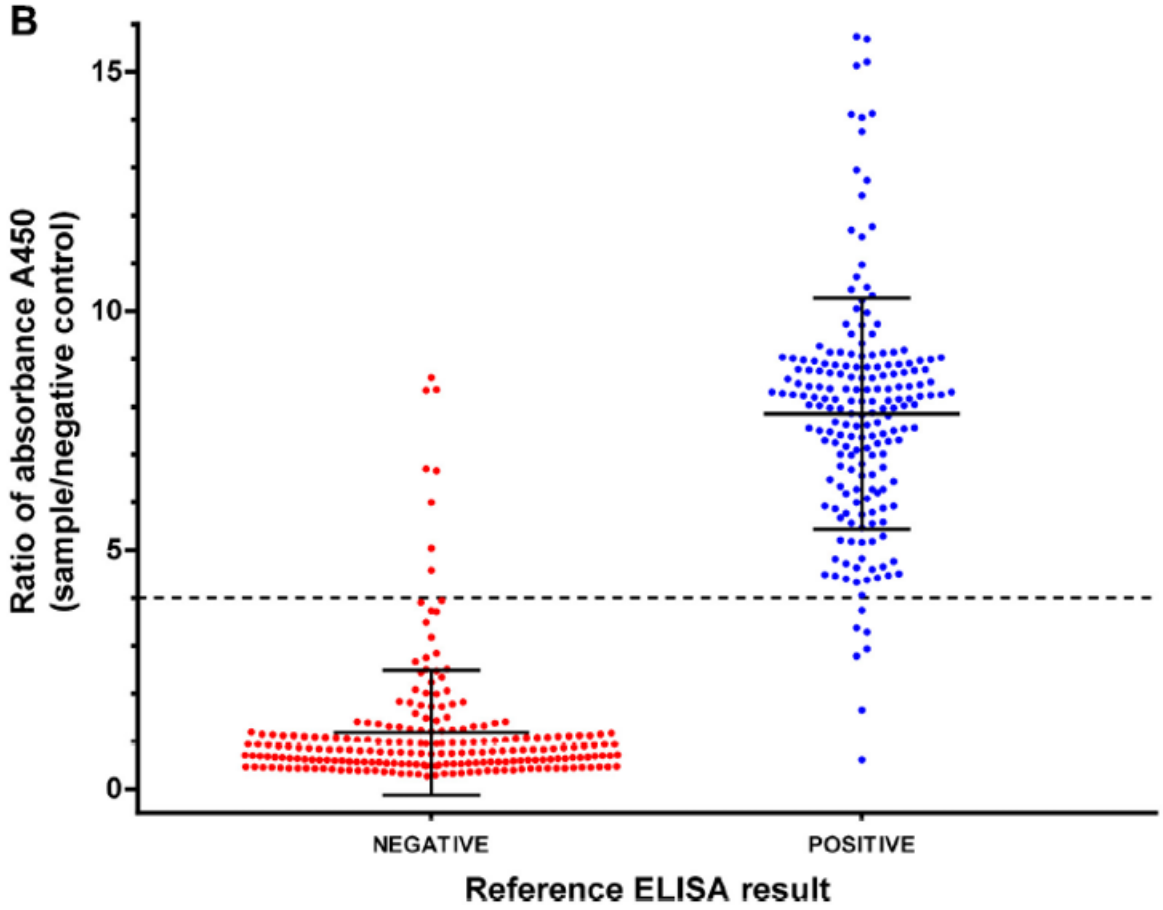
El trabajo describe cómo se ha logrado expresar y producir, a escala industrial, una parte (mitad C-terminal) de la proteína N del SARS-CoV-2 en plantas de Nicotiana benthamiana, una especie muy empleada como biofactoría, del mismo género que la planta del tabaco.

Es aquí donde el primer virus descubierto por la ciencia, el virus del mosaico del tabaco o TMV (Beijerinck,

1892), viene a echar una mano. Empleamos este virus como vector o vehículo para promover la expresión de la proteína N en las plantas. Estas fueron "infectadas" por una versión modificada genéticamente del ARN del TMV que contenía las instrucciones para sintetizar la región C-terminal de la proteína N del SARS-CoV-2.

Después de comprobar que la N recombinante se estaba expresando correctamente en la planta, se purificó separándola de los componentes propios de las plantas, y analizamos su antigenicidad, es decir, su capacidad para ser reconocida por anticuerpos específicos. Para ello desarrollamos un ELISA indirecto empleando la proteína N recombinante obtenida en plantas como antígeno.

Probamos con un extenso panel de muestras de sueros (procedente de estudios en colaboración con Madrid Salud) cuya especificidad ya había sido determinada en un ensayo comercial. Para los análisis de los datos contamos con especialistas del Centro Nacional de Epidemiología-ISCIII/CIBERESP y de Madrid Salud. Como puede verse en la figura, la proteína N obtenida en plantas funcionó muy satisfactoriamente como antígeno en un inmunoensayo de detección de anticuerpos frente al SARS-CoV-2 (sensibilidad: 96,41 %, especificidad: 96,37 %).



Resultados del ELISA de anticuerpos frente a SARS-CoV-2 desarrollado para probar la antigenicidad de la proteína N recombinante obtenida en plantas.

El ELISA indirecto desarrollado para este trabajo es un formato muy básico de inmunoensayo. Hay diversas maneras de mejorarlo, y con ello mejorar aun más las cifras de sensibilidad y especificidad observadas. Lo importante era comprobar que la proteína recombinante producida en plantas es reconocida en inmunoensayo, como punto de partida para generar diversas aplicaciones relacionadas con el diagnóstico de esta enfermedad, que esperamos que vayan surgiendo en un futuro próximo.

En definitiva, un equipo interdisciplinar formado por virólogos (CISA/INIA-CSIC), biotecnólogos de plantas (CBGP/INIA-CSIC, AGRENVEC) y epidemiólogos (CNE-ISCIII; CIBERESP; Madrid Salud) hemos obtenido en plantas un antígeno útil y económico para el diagnóstico del SARS-CoV-2.

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

Hallan el "talón de Aquiles" del SARS-CoV-2: ¿Se abre la puerta a un tratamiento contra la COVID-19?

27 ago. Desde el comienzo de la pandemia por COVID-19, la ciencia realizó enormes esfuerzos para hallar un tratamiento antiviral seguro y efectivo para combatir el SARS-CoV-2.

Y si bien hubo avances impensados en el desarrollo de vacunas, y se están aplicando activamente enfoques experimentales en la reutilización de fármacos autorizados para otros fines, el medicamento específico contra este nuevo virus aún no pudo ser desarrollado.

Los expertos creen que "ciertas regiones del genoma del SARS-CoV-2 podrían ser un objetivo adecuado para futuros medicamentos" (Efe).

¿Hasta ahora?

Según una revisión recientemente publicada, "ciertas regiones del genoma del SARS-CoV-2 podrían ser un objetivo adecuado para futuros medicamentos". Esto es lo que ahora descubrieron investigadores de la Universidad Goethe, junto con sus colaboradores en el consorcio internacional COVID-19 -NMR.

Con la ayuda de bibliotecas de sustancias dedicadas, identificaron varias moléculas pequeñas que se unen a ciertas áreas del genoma del SARS-CoV-2 y que casi nunca se alteran por mutaciones.

Se sabe que cuando el SARS-CoV-2 infecta una célula, introduce su ARN en ella y lo reprograma de tal manera que la célula primero produce proteínas virales y luego partículas virales completas. En la búsqueda de moléculas efectivas contra el SARS-CoV-2, los investigadores hasta ahora se habían concentrado principalmente en las proteínas virales y en la manera de bloquearlas, ya que ese mecanismo podría prevenir, o al menos ralentizar, la replicación viral.

Hasta ahora, la mayoría de los esfuerzos se centraron en las proteínas dirigidas a inhibir la propagación viral, mientras que se informaron pocos intentos por dirigirse directamente al genoma del ARN viral grande.

Pero al parecer, atacar el genoma del coronavirus, una molécula de ARN larga, también podría detener o ralentizar la replicación viral.

Los científicos del consorcio COVID-19-NMR, coordinado por el profesor Harald Schwalbe del Instituto de Química Orgánica y Biología Química de la Universidad de Goethe, en Frankfurt, Alemania, completaron un importante primer paso en el desarrollo de una nueva clase de drogas contra el SARS-CoV-2 al identificar

15 segmentos cortos del genoma del virus que son muy similares en varios coronavirus y se sabe que realizan funciones reguladoras esenciales.

Por otra parte, resaltaron que en el transcurso de 2020, estos segmentos rara vez se vieron afectados por mutaciones.

Para el trabajo, los investigadores permitieron que una biblioteca de sustancias de 768 moléculas pequeñas y químicamente simples interactuaran con los 15 segmentos de ARN y analizaron el resultado mediante espectroscopía de RMN. En la espectroscopia de RMN, las moléculas se marcan primero con tipos especiales de átomos (isótopos estables) y luego se exponen a un fuerte campo magnético.

Los núcleos atómicos se excitan mediante un pulso corto de radiofrecuencia y emiten un espectro de frecuencias, con la ayuda del cual es posible determinar la estructura del ARN y de las proteínas y cómo y dónde se unen las moléculas pequeñas.

Esto permitió al equipo de investigación dirigido por el profesor Schwalbe identificar 69 moléculas pequeñas que se unían a 13 de los 15 segmentos de ARN.

“Tres de las moléculas incluso se unen específicamente a un solo segmento de ARN. A través de esto, pudimos demostrar que el ARN del SARS-CoV-2 es muy adecuado como una posible estructura diana de fármacos -precisó el investigador-. En vista de la gran cantidad de mutaciones del SARS-CoV-2, estos segmentos de ARN conservadores, como los que hemos identificado, son particularmente interesantes para desarrollar inhibidores potenciales. Y dado que el ARN viral representa hasta dos tercios de todo el ARN en una célula infectada, deberíamos poder interrumpir la replicación viral a una escala considerable mediante el uso de moléculas adecuadas”.

“Los resultados, así como el enfoque metodológico presentado aquí, afectarán los enfoques de la química médica, pero también la focalización celular del ARN de SARS-CoV-2”, concluyeron esperanzados los investigadores.

Fuente: infobae. Disponible en https://cutt.ly/EWkSFE0

EEUU considera adelantar la tercera dosis de la vacuna contra el COVID-19 a los cinco meses

28 ago. El presidente Joe Biden dijo este viernes que las autoridades sanitarias del país están considerando administrar vacunas de refuerzo del coronavirus cinco meses después de que las personas completaron el proceso de inmunización, tres meses antes de lo planeado recientemente.

Biden aseguró que los funcionarios de salud federales estaban considerando seguir el ejemplo de Israel en cuanto al refuerzo de la vacuna a los cinco meses.

"Estamos considerando el consejo que ha dado de que deberíamos comenzar antes", dijo Biden tras la reunión que sostuvo este viernes con el primer ministro israelí Naftali Bennett en la Casa Blanca, y agregó que los funcionarios están debatiendo si el cronograma debería ser más corto. "¿Debería ser tan solo cinco meses? Eso se está discutiendo".

El anuncio se da solo 10 días después de que el gobierno de Biden diera luz verde a una dosis de refuerzo de las vacunas contra la COVID-19 para personas que hayan cumplido ocho meses desde que completaron el proceso de vacunación.

La Casa Blanca aclaró que el gobierno no ha tomado ninguna decisión al respecto y que cualquier cambio

sobre este tema se haría basado a las recomendaciones de los expertos y de las autoridades de salud.

"Israel ha dado el paso de hacer refuerzos a los seis meses y es el consejo del primer ministro israelí [Naftali Bennett]. Obviamente hacemos nuestras propias evaluaciones basándonos en nuestros expertos médicos y de salud aquí en los Estados Unidos y nada ha cambiado en ese frente", afirmó Jen Psaki, secretaria de prensa de la Casa Blanca.

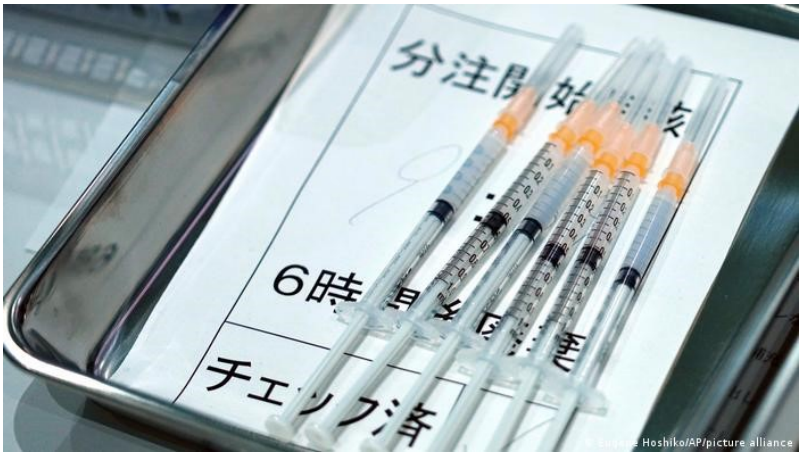
La tercera dosis comenzará a aplicarse a partir del 20 de septiembre entre quienes ya hayan alcanzado ese lapso de tiempo desde su segunda dosis de las vacunas de Pfizer o Moderna, según informó en un comunicado el Departamento de Salud y Servicios Humanos de Estados Unidos (HHS, por sus siglas en inglés).

Recientemente, los funcionarios de salud de EEUU recomendaron refuerzos para algunas personas con sistemas inmunitarios debilitados, citando su mayor riesgo de contraer el virus y la evidencia de que la efectividad de las vacunas disminuyó con el tiempo.

Durante meses, los funcionarios estadounidenses habían dicho que los datos aún indicaban que las personas permanecían altamente protegidas de la COVID-19, incluida la variante Delta, después de recibir el régimen de dos dosis de Pfizer o Moderna o la vacuna de una sola inyección de Johnson & Johnson.

Fuente: Telemundo 40. Disponible en https://cutt.ly/iWkDS7y

Regiones de Japón suspenden el uso de vacuna de Moderna



29 ago. La región japonesa de Okinawa suspendió este domingo (29.08.2021) el uso de la vacuna de Moderna tras detectar "sustancias extrañas en algunos" lotes del fármaco, indicó el gobierno local, los cuales son diferentes a los que se suspendieron anteriormente, según medios locales.

Esta decisión tiene lugar el día siguiente que el Ministerio de Salud anunciara que estaba investigando la muerte de dos hombres que habían sido vacunados con viales de Moderna procedentes de 1,63 millones de dosis que contenían impurezas en algunos frascos.

La prefectura de Okinawa, en el sur, decidió este domingo "suspender el uso de las vacunas de Moderna porque se detectaron sustancias extrañas en algunos" lotes, según un comunicado.

Por su parte, la prefectura de Gunma, al norte de Tokio, también suspendió el uso de lotes contaminados.

Con respecto a las muertes de los hombres de 30 y 38 años, que habían recibido una segunda dosis de Moderna procedente de uno de los tres lotes bloqueados el 26 de agosto por el gobierno, se abrió una investigación para determinar la causa, aunque las autoridades precisaron que por ahora "el vínculo causa efecto con la vacunación se desconocía".

"No tenemos ninguna prueba de que estos decesos fueran causados por la vacuna de Moderna y es importante efectuar una investigación para determinar si hay una relación", declararon el sábado en un comunicado conjunto Moderna y Takeda, el laboratorio que la importa y distribuye en Japón.

Fuente: DW. Disponible en https://cutt.ly/nWkFFV6

Nueva vacuna china contra COVID-19 empieza ensayo clínico de fase III en Filipinas

29 ago. Una vacuna de proteína recombinante de fusión contra la COVID-19 (V-01), desarrollada y fabricada por China, ha sido aprobada para ensayos clínicos de fase III en Filipinas.

La vacuna V-01 fue desarrollada por el Instituto de Biofísica de la Academia de Ciencias de China y Livzon Pharmaceutical Group Inc. (LivzonBio) en la provincia de Guangdong, en el sur de China.

V-01 es una vacuna de proteína recombinante de fusión con el dominio de unión al receptor (RBD, por sus siglas en inglés) como antígeno, que es la parte más importante de la unión de la proteína del pico del virus con un receptor en las células humanas ACE2. El proceso de unión otorga al virus acceso a las células del huésped y conduce a la infección.

La Administración de Alimentos y Medicamentos de Filipinas había aprobado el ensayo clínico de fase III de la vacuna V-01 para evaluar su seguridad y eficacia. El ensayo ha comenzado a reclutar participantes en adultos mayores de 18 años en el país. El primer participante se inscribió el 25 de agosto y se le inoculó con la primera dosis.

Hu Zhenxiang, vicepresidente de LivzonBio, dijo a Xinhua que los ensayos de fase I y fase II de la vacuna V-01 habían producido resultados satisfactorios.

Fuente: CGTN en español. Disponible en https://cutt.ly/2WkJ6dt

Egypt's coronavirus vaccine VACSERA plant to serve local and African needs: Health minister

Aug 30. Health Minister Hala Zayed said on Monday that the coronavirus vaccines plant at the Holding Company for Biological Products and Vaccines (VACSERA) complex is planned to produce up to 24,000 packs per hour.

The plant is set to be the biggest in the Middle East and North Africa for the production of COVID-19 vaccines, Zayed said during a tour of the complex with Prime Minister Mostafa Madbouly.

Zayed expects the plant to become a regional hub for the production of vaccines planned for export to African countries.

The factory is built over 6,000 square metres as part of the VACSERA complex – 10-fold the size of the plant – located in the industrial zone of Giza's 6 October City, Zayed added.

The plant is expected to open by the end of the year, she noted.

The VACSERA complex will work with leading international companies to produce different types of vaccines. This cooperation aims to transfer the technologies of manufacturing seasonal flu and pneumococcal conjugate vaccines to Egypt, Zayed said.

Madbouly said the complex is a giant edifice that aims at producing eight vital types of vaccines, noting that

Egypt had been previously producing these vaccines but their production was halted.

At a press conference following his tour in the complex, Madbouly said it will be ready by the end of November and will be operational after sealing an agreement with a company to run it.

The complex is set up on an area of 15 feddans and is meant to revive the local production of vaccines, which is an issue of national security to Egypt, the premier added.

Madbouly urged citizens to adhere to the coronavirus preventive measures, especially during the coming period, in light of the latest surge in coronavirus cases.

Egypt has set a strict plan to secure coronavirus vaccine doses to the largest possible number of people before the end of the year, Madbouly affirmed.

Egypt has been reporting over 200 new coronavirus cases on a daily basis since 25 August, for the first time since 2 July.

The Ministry of Health in August said the fourth coronavirus wave is expected to hit Egypt around the end of September or the beginning of October.

Zayed announced on 23 August that the first case of the new Delta Plus coronavirus variant was recorded in July.

To date, Egypt's vaccination campaign has included the use of the imported version of the Sinovac vaccine along with the Sputnik V, AstraZeneca, Johnson & Johnson, and Sinopharm vaccines.

Egypt also plans to produce millions of Sinovac and Sputnik shots annually to cover local and African needs.

The government has set a goal to vaccinate 40 million citizens by the end of the year, representing around 40 percent of the population, a step hailed by the World Health Organisation.

Last week, Egypt released the first one million doses of its locally-produced Sinovac/VACSERA vaccine after the completion of the required evaluation tests, the Ministry of Health announced.

The one million doses were distributed among coronavirus vaccination centres nationwide, totalling 657 so far, including 145 centres for those traveling abroad, health ministry spokesman Khaled Megahed said in a statement.

Fuente: ahramonline. Disponible en https://cutt.ly/mWkXgu4

Researchers identify biomarkers for rare, serious complication in children with COVID-19

Aug 31. The study focused on multisystem inflammatory syndrome in children (MIS-C), an inflammatory response involving multiple organs that can occur weeks after infection with SARS-CoV-2, the virus that causes COVID-19. Although most patients improve with medical care, more than half the MIS-C cases in the U.S. require ICU admission, and the condition can be deadly.

A total of 4,404 MIS-C cases and 37 fatalities in the U.S. had been reported to the federal Centers for Disease Control and Prevention as of Aug. 15. The median age of MIS-C patients was 9 years, and more than 60% of the cases were in Black or Latinx children, according to the report.

It is crucial to improve our understanding of MIS-C in the current environment, given reports of rising rates of

children being hospitalized with COVID-19 in the U.S. and the return of many students to school for the fall term. The disproportionate impact of MIS-C related to race and ethnicity is especially troubling."

Moshe Arditi, MD, Director, Pediatric Infectious Diseases Division, Cedars-Sinai

Arditi, professor of pediatrics and the GUESS?/Fashion Industries Guild Chair in Community Child Health, is co-senior author of the new study, published in the peer-reviewed Journal of Clinical Investigation. The other co-senior authors are Jennifer Van Eyk, PhD, director of the Advanced Clinical Biosystems Research Institute in the Smidt Heart Institute at Cedars-Sinai, and Mascha Binder, MD, from Martin Luther University Halle-Wittenberg in Germany.

The investigators examined a small group of patients to identify an array of pathogenic pathways culminating in MIS-C, along with proteins in the blood with potential to act as biomarkers to forecast the severity of the syndrome and help drive treatment decisions.

A picture is emerging of MIS-C as an autoimmune disease in which the immune system becomes overactive and mistakenly attacks the body's own organs, Arditi explained. This process may be triggered by widespread tissue damage caused by the SARS-CoV-2.

Children with MIS-C often present symptoms similar to those observed in the so-called cytokine storm, an inflammatory response that can be fatal in COVID-19 patients. These symptoms may include persistent fever and gastrointestinal, respiratory, neurological and cardiovascular problems, such as shock and heart muscle inflammation.

Research co-led by Arditi and his team and colleagues at the University of Pittsburgh School of Medicine, published last year, uncovered similar biological processes involved in MIS-C, the cytokine storm and toxic shock syndrome-;a rare, life-threatening complication of bacterial infections. These findings were further elucidated earlier this year in two peer-reviewed studies co-authored by Arditi.

For the new Journal of Clinical Investigation study, the research team adopted an interdisciplinary approach, marshaling specialists across Cedars-Sinai and five other institutions.

"We deployed an array of advanced techniques, including proteomics, RNA sequencing and analyses of antibodies and immune system signaling," said Van Eyk, professor of Cardiology, Biomedical Sciences and Pathology and Laboratory Medicine and an expert on proteomics-;the study of proteins at the molecular and genetic levels. "By combining forces, we are better able to accelerate scientific discoveries to keep pace with the rapidly evolving pandemic and to inform clinical decisions."

The investigators noted that their study was limited by its small size. They examined 69 children, including those with and without MIS-C and seven with another pediatric inflammatory disorder-;Kawasaki disease. Future investigations are needed to validate the findings in a larger patient group, Arditi said.

Fuente: News Medical Life Sciences. Disponible en https://cutt.ly/BWk6KyD

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Patentes registradas en Patentscope

Estrategia de búqueda: *Vaccine in the title or abstract AND 20210821:20210831 as the publication date 35 records.*

1.WO/2021/165312VACCINE ADJUVANT COMPRISING AN INVERSE MICROLATEX
WO - 26.08.2021
Int.Class A61K 9/00 Appl.No PCT/EP2021/053873 Applicant SOCIÉTÉ D'EXPLOITATION DE PRODUITS POUR LES INDUSTRIES CHIMIQUES - SEPPIC Inventor PLISZCZAK, Dorothee
Vaccine adjuvant comprising at least one inverse microlatex, the inverse microlatex comprising at least one oil, at least one surfactant, at least one polymer such as, for example, a polyacrylate that is totally or partially neutralized in the form of alkali metal salts or ammonium salt, the vaccine adjuvant being entirely sterilizable by filtration or by passing through the heat of an autoclave and emulsifiable in one step with the aqueous phase comprising only a vaccine antigen.

2.WO/2021/165786TRACING OF COVID-19 VACCINE VIALS
WO - 26.08.2021
Int.Class G06N 20/00 Appl.No PCT/IB2021/051044 Applicant WILIOT, LTD. Inventor ZELMAN, Ido
A system and method for tracing vaccine vials are provided. The method includes receiving, from a gateway of a plurality of gateways, frequency words from tags attached to vaccine vials, wherein each tag is configured to transmit a plurality of frequency words; extracting at least one data feature from the plurality of frequency words, wherein each data feature changes in response to a change in a state of a vaccine vial; classifying the extracted data feature based on a machine learning model trained with

respect to a location of the gateway, wherein the classifier is trained to label a trace parameter indicative of a state of a vaccine vial; and sending a semantic event indicating a value of the trace parameter.

3.3868874RECOMBINANT RSV LIVE VACCINE STRAIN AND PRODUCTION METHOD THEREFOR
EP - 25.08.2021
Int.Class C12N 7/00 Appl.No 19870535 Applicant SK BIOSCIENCE CO LTD Inventor SEO KI-WEON
The present invention provides a gene recombinant respiratory syncytial virus (RSV) in which genes encoding the envelope proteins of an RSV are rearranged, wherein in the RSV, a gene encoding the fusion protein (F protein) derived from a heterologous virus belonging to the family Paramyxoviridae or the family Pneumoviridae is inserted between the genes respectively encoding the glycoprotein (G protein) and the F protein of the RSV, or the gene encoding the F protein of the RSV is substituted with a gene encoding the F protein of a heterologous virus belonging to the family Paramyxoviridae or the family Pneumoviridae. The recombinant RSV of the present invention can be used as an RSV vaccine strain, and can be used as a vaccine due to having excellent stability and safety.

4.WO/2021/164563PD1-BASED VACCINATION COMPOSITION AND METHODS THEREOF
WO - 26.08.2021
Int.Class C12N 15/62 Appl.No PCT/CN2021/075254 Applicant THE UNIVERSITY OF HONG KONG Inventor CHEN, Zhiwei
Provided herein is DNA vaccine and composition comprising PD1-based TWIST1. Also provided is a method for inducing TWIST1-specific T cell response by administering a PD1-based TWIST1 vaccine. Also provided is a method for inducing TWIST1-specific T cell response by administering a PD1-based TWIST1 vaccine and an immune checkpoint inhibitor.

5.WO/2021/164097BIOLOGICAL PRODUCT FOR PREVENTING NOVEL CORONAVIRUS
WO - 26.08.2021
Int.Class C07K 19/00 Appl.No PCT/CN2020/080861 Applicant SYNO (SHENZHEN) BIOMEDICAL RESEARCH CO., LTD. Inventor ZHANG, Shuyuan
Provided is a biological product for preventing a novel coronavirus (COVID-19). The biological product can be a gene vaccine or a gene medicine. The gene vaccine adopts a human adenovirus type 5 with deletion of E1 and E3 genes as a vector for carrying an S1 protein antigen expressing a Spike S1 subunit of the novel coronavirus or simultaneously carrying the S1 protein antigen and an N protein antigen, generating an immune response, and preventing novel coronavirus infection and transmission.

6.11097001Composition and method against tuberculosis
US - 24.08.2021
Int.Class A61K 39/04 Appl.No 15421689 Applicant MicroVAX, LLC Inventor Albert B. Deisseroth

A composition/vaccine to intensify and expand the magnitude of the host immune response against the Ag 85 and ESAT6 proteins thereby blocking the inhibitory effect of these two classes of secreted proteins, and thus promoting the clearing or control of the MTb infection. Fusion proteins are created between immunogenic fragments of the soluble secreted MTb proteins Ag 85 and ESAT6 (which are inhibitors of the immune response) and the extracellular domain (ecd) of the immunostimulatory protein ecdCD40 ligand (ecdCD40L). Fusion proteins are created using both Ag85 and ESAT-6 immunogenic peptides and ecdCD40L, to induce a more potent immune response against the MTb than would the use of either protein (Ag85 or ESAT-6) alone. Both a humoral and cellular immune response are induced. The composition/vaccine further avoids the requirement for use of attenuated strains of the tubercle bacillis, to induce an immune response to the Ag85 and ESAT6 proteins.

7.3866847VIRUS VACCINE
EP - 25.08.2021

Int.Class A61K 39/12 Appl.No 19873703 Applicant UNIV GRIFFITH Inventor MAHALINGAM SURENDRAN
This invention relates to a vaccine comprising live attenuated Zika virus comprising a partly codon deoptimized viral genome, a Zika virus comprising a partly codon deoptimized viral genome, as well as their use in methods of treatment and prevention of viral infection. is deoptimized along the nonstructural ZIKV coding region. In some embodiments, the non-structural region of the viral genome is codon deoptimized, and preferably one or more of the genes NS1, NS2A, NS2B, NS3, NS4A, NS4B and NS5 are codon deoptimized.

8.WO/2021/164186PCR PRIMERS AND METHOD FOR IDENTIFYING SWINE PSEUDORABIES VIRUS VARIANT
WO - 26.08.2021
Int.Class C12Q 1/70 Appl.No PCT/CN2020/100609 Applicant NANJING AGRICULTURAL UNIVERSITY Inventor BAI, Juan
Disclosed are PCR primers and a method for identifying a swine pseudorabies virus variant. The method comprises the following steps: extracting viral DNA to be identified, performing first-step amplification by using the primers designed in the present invention, wherein viral DNA with two amplified bands is a variant or an HB98 vaccine strain and viral DNA with one amplified band is a classical strain, and then subjecting the viral DNA with two amplified bands to second-step amplification, wherein an amplification product with a molecular weight of 211 bp is the variant and an amplification product with a molecular weight of 293 bp is the HB98 vaccine strain. The sensitivity of first-step PCR can reach a virus amount of 10TCID50 or a plasmid amount of 0.01 ng/ml and the sensitivity of second-step PCR can reach a virus amount of 10TCID50 or a plasmid amount of 0.1 ng/ml. The sensitivity can be used for effectively detecting whether a pseudorabies virus infection is present in clinical cases and distinguishing pseudorabies virus classical virus strain infections from variant infection.

9.WO/2021/165992COMPOSITIONS AND THERAPEUTIC USES OF CANNABIDIOL
WO - 26.08.2021
Int.Class A61P 9/10 Appl.No PCT/IN2021/050159 Applicant DR. MERCHANT, Shreema Inventor PATEL, Manit
The invention provides various pharmaceutical composition comprising the new therapeutic agent cannabidiol that rescues the adversely affected sodium channels Nav1.5 and thus serves as a potential therapeutic agent for treating several cardiac disorders. The invention also provides various pharmaceutical composition employing the new therapeutic agent cannabidiol for abolishing or minimizing side effects of other therapeutic agents / drugs which induce, or which are likely to induce Long QT. The invention further provides pharmaceutical composition of cannabidiol for treating or avoiding inflammation induced by any other therapeutic agent or inflammation induced in any diseases or ailment such as Covid-19 and also inflammation induced by any vaccine such as Covid-19 vaccine.

10.20210261627RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINE
US - 26.08.2021
Int.Class C07K 14/005 Appl.No 17316834 Applicant CureVac AG Inventor Thomas KRAMPS

The present invention relates to an mRNA sequence, comprising a coding region, encoding at least one antigenic peptide or protein of RSV infections Respiratory syncytial virus (RSV) or a fragment, variant or derivative thereof. Additionally the present invention relates to a composition comprising a plurality of mRNA sequences comprising a coding region, encoding at least one antigenic peptide or protein of RSV infections Respiratory syncytial virus (RSV) or a fragment, variant or derivative thereof. Furthermore it also discloses the use of the mRNA sequence or the composition comprising a plurality of mRNA

sequences for the preparation of a pharmaceutical composition, especially a vaccine, e.g. for use in the prophylaxis or treatment of RSV infections Respiratory syncytial virus (RSV) infections. The present invention further describes a method of treatment or prophylaxis of RSV infections using the mRNA sequence.

11.3866843EMULSION VACCINE FOR FISH
EP - 25.08.2021
Int.Class A61K 39/02 Appl.No 19786574 Applicant INTERVET INT BV Inventor JANSEN THEODORUS
The present invention discloses the new and advantageous properties of an emulsion of water and oil that can be used to prepare an emulsion vaccine for fish which has improved safety properties. The emulsion employs a specific class of polymeric emulsifiers instead of prior art emulsifiers. When used in fish, vaccines based on this adapted emulsion induced a smaller drop in appetite after vaccination, and the vaccinated fish showed a faster recovery to normal apetite. This while providing equal or better immune-protection as compared to current emulsion vaccines. The polymeric emulsifier is a block copolymer having a general formula A-B-A in which component B is the divalent residue of a water-soluble polyalkylene glycol and component A is the residue of an oil-soluble complex monocarboxylic acid. Preferred emulsifier is a PEG-30-di-(polyhydroxystearate).

12.WO/2021/168318VACCINE COMPOSITIONS FOR PREVENTING CORONAVIRUS DISEASE
WO - 26.08.2021
Int.Class A61K 39/12 Appl.No PCT/US2021/018869 Applicant INTERNATIONAL AIDS VACCINE INITIATIVE INC. Inventor PARKS, Christopher Lee
The present disclosure provides Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) vaccines, recombinant vesicular stomatitis virus (VSV) vectors encoding the SARS-CoV-2 spike (S) protein or an immunogenic variant thereof, recombinant replicable VSV particles having a SARS-CoV-2 S protein or an immunogenic variant thereof on the surface of the particles, and immunogenic recombinant proteins comprising a SARS-CoV-2 S protein or a variant thereof. Immunogenic compositions comprising the SARS-CoV-2 vaccines, the recombinant VSV vectors, the recombinant replicable VSV particles and/or the immunogenic recombinant proteins may be used for inducing an immune response to the SARS-CoV-2, preventing infection by the SARS-CoV-2, vaccinating against the SARS-CoV-2 and/or producing adaptive mutants of the recombinant replicable VSV particles.

13.20210261614NOVEL IMMUNOTHERAPY AGAINST SEVERAL TUMORS INCLUDING NEURONAL AND BRAIN TUMORS
US - 26.08.2021
Int.Class C07K 7/06 Appl.No 17238787 Applicant IMMATICS BIOTECHNOLOGIES GMBH Inventor Toni WEINSCHENK

The present invention relates to peptides, 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 cytotoxic T cell (CTL) peptide epitopes, alone or in combination with other tumor-associated peptides that serve as active pharmaceutical ingredients of vaccine compositions that stimulate anti-tumor immune responses. The present invention relates to 30 peptide sequences and their variants derived from HLA class I and class II molecules of human tumor cells that can be used in vaccine compositions for eliciting anti-tumor immune responses.

14.20210260182RECOMBINANT POXVIRUS BASED VACCINE AGAINST SARS-CoV-2 VIRUS
US - 26.08.2021
Int.Class A61K 39/215 Appl.No 17187678 Applicant Scott J. Goebel Inventor Seth Lederman

The invention relates in various aspects to a recombinant poxvirus comprising a nucleic acid encoding a SARS-CoV-2 virus protein, methods for producing such viruses and the use of such viruses. The recombinant poxviruses are well suited, among others, as protective virus vaccines against SARS-CoV-2 virus.

15.20210261647LAMP CONSTRUCTS COMPRISING ALLERGENS
US - 26.08.2021
Int.Class C07K 14/705 Appl.No 17053784 Applicant IMMUNOMIC THERAPEUTICS, INC Inventor Teri HEILAND

The present invention provides improved LAMP Constructs comprising specific fragments of the LAMP lumenal domain to deliver allergens to immune cells for enhanced processing. These LAMP Constructs can be used for the treatment of disease and in particular allergic reactions and/or allergies. The improved LAMP Constructs allow for presentation of properly configured three dimensional epitopes for production of an immune response when administered to a subject. The improved LAMP Constructs can be multivalent molecules, and/or can be provided as part of a multivalent vaccine containing two or more LAMP Constructs.

16.3866760SIV ENVELOPE TRIMER
EP - 25.08.2021
Int.Class A61K 9/00 Appl.No 19872424 Applicant SCRIPPS RESEARCH INST Inventor ANDRABI RAIEES
The present application relates to epitope-targeted SIV and HIV vaccines. The invention provides novel envelope glycoproteins which may be utilized as HIV-I vaccine immunogens, antigens for crystallization, and for identification of broadly neutralizing antibodies, The invention encompasses preparation and purification of immunogenic compositions which are formulated into vaccines of the present invention.

17.WO/2021/163874RECOMBINANT VIRAL VECTOR, IMMUNOGENIC COMPOSITION COMPRISING SAME, AND USES
WO - 26.08.2021
Int.Class A61K 31/7088 Appl.No PCT/CN2020/075677 Applicant VACDIAGN BIOTECHNOLOGY CO., LTD. Inventor XU, Jianqing
A recombinant viral vector, an immunogenic composition comprising same, and uses. The recombinant viral vector comprises a polynucleotide for coding a cytokine, the cytokine being one or more selected from IL-7, IL-15, IL-21 or GM-CSF. The recombinant viral vector is applicable in preparing an antitumor vaccine.

18.2021212132NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST AML AND OTHER CANCERS
AU - 26.08.2021
Int.Class C07K 7/06 Appl.No 2021212132 Applicant Immatics Biotechnologies GmbH Inventor
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.

19.3868398METHODS AND COMPOSITIONS FOR INDUCING PROTECTIVE IMMUNITY AGAINST HUMAN IMMUNODEFICIENCY VIRUS INFECTION
EP - 25.08.2021
Int.Class A61K 39/21 Appl.No 21157436 Applicant BETH ISRAEL DEACONESS MEDICAL CT INC Inventor BAROUCH DAN
Compositions, vaccines and methods for inducing protective immunity against Human Immunodeficiency Virus (HIV) infection are described. Heterologous vaccine combinations of one or more viral expression vectors and an isolated antigenic polypeptide induced strong protective immunity against infections by one or multiple clades of HIV.

20.3866830VACCINE POLYPEPTIDE COMPOSITIONS AND METHODS
EP - 25.08.2021
Int.Class A61K 38/16 Appl.No 19873436 Applicant UNIV ARIZONA Inventor STULL TERRANCE
Immunogenic peptides, fusion polypeptides, and carrier molecules which include the immunogenic peptides, and immunogenic compositions which include these immunogenic peptides, fusion heterologous polypeptides, and/or carrier molecules bearing the peptides, and which are able to elicit antibody production against infectious organisms, are disclosed. Also disclosed are methods of making and their use in causing an antibody response against one or more strains of infectious organism, such as *B. pertussis* (Bp).

21.20210260184MULTIVALENT CMV VACCINE AND USES THEREOF
US - 26.08.2021
Int.Class A61K 39/295 Appl.No 17261554 Applicant Duke University Inventor Sallie PERMAR

The invention is directed to multivalent HCMV immunogenic compositions and their use.

22.WO/2021/1656672019-NCOV (SARS-COV-2) VACCINE
WO - 26.08.2021
Int.Class A61K 39/12 Appl.No PCT/GB2021/050383 Applicant VAXBIO LTD Inventor GUPTA, Gaurav
The present invention relates to Coronavirus 2019-nCoV spike protein, polynucleotides encoding said spike protein, antibodies and vaccines for treatment or prevention of 2019-nCoV infection. One embodiment refers to isolated polynucleotide encoding a spike protein from 2019-nCoV having at least 90% identity with SEQ ID NO: 1, or a fragment thereof that has a common antigenic cross- reactivity with said spike protein, wherein said polynucleotide is optimised for recombinant expression. In a particular embodiment the polynucleotide is optimised for expression in a host cell selected from: (a) Escherichia coli; (b) yeast, preferably Komagataella or Saccharomyces; and/or (c) mammalian cells, preferably human cells.

23.2021902500Vaccine Antigen
AU - 26.08.2021
Int.Class Appl.No 2021902500 Applicant Macfarlane Burnet Institute for Medical Research and Public Health Limited Inventor

24.20210260120PEPTIDES AND COMBINATION OF PEPTIDES OF NON-CANONICAL ORIGIN FOR USE IN IMMUNOTHERAPY AGAINST DIFFERENT TYPES OF CANCERS
US - 26.08.2021
Int.Class A61K 35/17 Appl.No 17229447 Applicant Immatics Biotechnologies GmbH Inventor Heiko SCHUSTER

The present invention relates to peptides, proteins, nucleic acids and cells for use in immunotherapeutic methods. In particular, the present invention relates to the immunotherapy of cancer. The present

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

25.3866846METHOD OF ENHANCING ANTIBODY-DEPENDENT CELL-MEDIATED CYTOTOXICITY (ADCC)
EP - 25.08.2021
Int.Class A61K 39/12 Appl.No 19872716 Applicant ALBERT EINSTEIN COLLEGE OF MEDICINE Inventor HEROLD BETSY
Methods of preferentially enhancing in a subject an antibody-dependent cell-mediated cytotoxicity (ADCC) antibody response over a neutralizing antibody response to a vaccine for an infectious agent using herpesvirus entry mediator (HVEM) agonists, and related compositions.

26.2021902530Vaccine Antigen
AU - 26.08.2021
Int.Class Appl.No 2021902530 Applicant Macfarlane Burnet Institute for Medical Research and Public Health Limited Inventor

27.3868741PYRIMIDINE COMPOUND
EP - 25.08.2021
Int.Class C07D 239/49 Appl.No 21164640 Applicant SUMITOMO DAINIPPON PHARMA CO LTD Inventor KIMURA HIDENORI
The present invention provides a compound of the formula (1) :wherein X, R^1, R^2, R^3, R^4, R^5, R^6, Y^1, Y^2, L, and m are as defined in the description, and a pharmaceutically acceptable salt thereof, which are useful as a vaccine adjuvant.

28.3866815TRANSPLANT TOLERANCE INDUCTION WITH CARBODIIMIDE TREATED TOLERIZING VACCINE
EP - 25.08.2021
Int.Class A61K 35/17 Appl.No 19872805 Applicant UNIV MINNESOTA Inventor HERING BERNHARD J
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.

29.3866848TELEOST INVARIANT CHAIN CANCER VACCINE
EP - 25.08.2021
Int.Class A61K 39/385 Appl.No 19786631 Applicant NOUSCOM AG Inventor NICOSIA ALFREDO
The present invention relates to polypeptides comprising a fragment of a teleost invariant chain optionally fused to one or more antigens or a teleost invariant chain fused to one or more antigens or antigenic fragments thereof, a polynucleotide encoding such polypeptides, vectors comprising such polynucleotides, collection of vectors comprising such polynucleotides and use of such polypeptides, polynucleotides, vectors for treating or preventing diseases, in particular tumor diseases. The teleost invariant chain polypeptides or fragments thereof act as "T cell enhancer" converting non-immunogenic antigenic sequences into immunogenic T cell antigens.

30.WO/2021/165543PROPIONIBACTERIUM ACNES PROPHYLACTIC AND THERAPEUTIC IMMUNE TREATMENT
WO - 26.08.2021
Int.Class A61K 39/00 Appl.No PCT/EP2021/054346 Applicant ORIGIMM BIOTECHNOLOGY GMBH Inventor SELAK, Sanja

The present invention discloses a vaccine comprising one or more of Dermatan sulfate-binding adhesin 1 of P. acnes (DsA1 polypeptide), Dermatan sulfate-binding adhesin 2 of P. acnes (DsA2 polypeptide), and putative iron-transport protein (PITP) polypeptide of P. acnes, and/or a fragment and/or derivative of DsA1 and/or DsA2 and/or PITP, wherein the DsA1 polypeptide and the DsA2 polypeptide comprise from N- to C-terminus an N-terminal swapping region ("NSR"), a first conserved sub-domain ("CSD1"), a first swapping region ("SR1"), a second conserved sub-domain ("CSD2"), a second swapping region ("SR2"), a third conserved sub-domain ("CSD3"), a Pro-Thr repeat containing region ("PT repeat region"), and a C-terminal region ("CTR"), and wherein the PITP polypeptide comprises from N- to C-terminus an extended neocarzinostatin family domain ("ENFD"), a first swapping region ("SR1"), a heme¬ binding domain ("HbD"), a second swapping region ("SR2") including the C-terminal LPXTG motif, and a hydrophobic C-terminal region ("hLAR").

31.20210260122NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST EPITHELIAL OVARIAN CANCER AND OTHER CANCERS
US - 26.08.2021
Int.Class A61K 35/17 Appl.No 17245031 Applicant Immatics Biotechnologies GmbH Inventor Heiko SCHUSTER

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

32.20210260123NOVEL PEPTIDES AND COMBINATION OF PEPTIDES FOR USE IN IMMUNOTHERAPY AGAINST EPITHELIAL OVARIAN CANCER AND OTHER CANCERS
US - 26.08.2021
Int.Class A61K 35/17 Appl.No 17245105 Applicant Immatics Biotechnologies GmbH Inventor Heiko SCHUSTER

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

33.20210261947METHOD OF DETECTING NEW IMMUNOGENIC T CELL EPITOPES AND ISOLATING NEW ANTIGEN-SPECIFIC T CELL RECEPTORS BY MEANS OF AN MHC CELL LIBRARY
US - 26.08.2021
Int.Class C12N 15/10 Appl.No 17313761 Applicant MAX-DELBRÜCK-CENTRUM FÜR MOLEKULARE MEDIZIN IN DER HELMHOLTZ-GEMEINSCHAFT Inventor Felix LORENZ

The present invention relates to the field of immunotherapy, in particular, to adoptive T cell therapy, T cell receptor (TCR) gene therapy and vaccination. The invention provides a method for preparing a nucleic acid encoding the TCR alpha chain construct (TRA) and TCR beta chain construct (TRB) of a TCR

construct specific for an epitope from an antigen presented on major histocompatibility complex (MHC), comprising contacting T cells isolated from a donor with a library of artificial antigen presenting cells (APC) comprising cells expressing all MHC I or MHC II alleles present in the donor, preferably, in K562 cells. The TCR construct can be expressed in a T cell, which is useful for adoptive T cell therapy, e.g., of cancer, viral infections or autoimmune diseases. The invention further provides a method for identifying the epitope recognized by said TCR. Immunogenic epitopes recognized by said TCRs can be used to develop vaccine formulations to induce antigen-specific T cell immunity in patients. The invention further provides pairs of two TCR constructs and respective immunogenic epitopes obtained by the method of the invention, wherein the epitopes are from human papillomavirus (HPV) 16 (also designated alphapapillomavirus 9) oncoprotein E5 and human cytomegalovirus (CMV) protein pp65.

34.WO/2021/168305DESIGNER PEPTIDES AND PROTEINS FOR THE DETECTION, PREVENTION AND TREATMENT OF CORONAVIRUS DISEASE, 2019 (COVID-19)
WO - 26.08.2021
Int.Class C07K 16/10 Appl.No PCT/US2021/018855 Applicant UBI IP HOLDINGS Inventor WANG, Chang Yi
The present disclosure is directed to a relief system for the effective detection, prevention, and treatment of COVID-19, including (1) serological diagnostic assays for the detection of viral infection and epidemiological surveillance, (2) high-precision, site-directed peptide immunogen constructs for the prevention of infection by SARS-CoV-2, (3) receptor-based antiviral therapies for the treatment of the disease in infected patients, and (4) designer protein vaccine containing S1-RBD-sFc. The disclosed relief system utilizes amino acid sequences from SARS-CoV-2 proteins as well as human receptors for the design and manufacture of optimal SARS-CoV-2 antigenic peptides, peptide immunogen constructs, CHO-derived protein immunogen constructs, long-acting CHO-derived ACE2 proteins, and formulations thereof, as diagnostics, vaccines, and antiviral therapies for the detection, prevention, and treatment of COVID-19.

35.20210261644PD-1-BASED VACCINES AGAINST CORONAVIRUS INFECTION
US - 26.08.2021
Int.Class C07K 14/705 Appl.No 17186822 Applicant The University of Hong Kong Inventor Zhiwei Chen

Disclosed soluble PD-1 (sPD-1) proteins and nucleic acids, and therapeutic compositions comprising sPD-1 proteins and nucleic acids, for enhancing immunity of a subject against coronavirus infection. Disclosed are soluble PD-1 fusion proteins that include a soluble PD-1 protein fragment and an antigenic protein fragment, preferably where the antigenic protein fragment comprises a coronavirus protein fragment. In some forms, the coronavirus protein fragment is derived from a coronavirus receptor binding domain (RBD) or a coronavirus nucleoprotein (N). In some forms, the sPD-1 proteins, nucleic acids, and compositions are formulated as a vaccine composition. Also disclosed are methods for treating a subject at risk of or suffering a coronavirus infection.

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

Results Search in US Patent Collection db for: (ABST/vaccine AND ISD/20210821->20210831), 17 records.

	PAT. NO.	Title
1	11,104,916	Compositions and methods for alphavirus vaccination
2	11,104,884	Vaccinia virus vectors related to MVA with extensive genomic symmetries
3	11,104,722	Immunogenetic restriction on elicitation of antibodies
4	11,103,574	Infectious disease vaccine using non-infectious paramyxovirus particle
5	11,103,572	Thermal inactivation of rotavirus
6	11,103,571	Edible vaccines expressed in yeast for preventing and treating infectious diseases in animals and human
7	11,103,570	Recombinant modified vaccinia virus Ankara (MVA) foot and mouth disease virus (FMDV) vaccine
8	11,103,569	Vaccine for protection against Streptococcus suis
9	11,103,567	Glycoconjugate vaccines, preparation method and uses thereof
10	11,103,535	Peptides and combination of peptides of non-canonical origin for use in immunotherapy against different types of cancers
11	11,103,534	Peptides and combination thereof for use in the immunotherapy against cancers
12	11,103,453	Rhinovaccination system of influenza vaccine
13	11,098,125	Fc.gamma.RIIB-specific antibodies and methods of use thereof
14	11,098,086	Multivalent HIV vaccine boost compositions and methods of use
15	11,097,002	Nanoparticle vaccines with novel structural components
16	11,097,001	Composition and method against tuberculosis
17	11,096,962	Nanoparticles for use as a therapeutic vaccine

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Edición: Annia Ramos Rodríguez aramos@finlay.edu.cu
Ma. Victoria Guzmán Sánchez mguzman@finlay.edu.cu
Randelys Molina Castro rmolina@finlay.edu.cu
Irina Crespo Molina icrespo@finlay.edu.cu
Yamira Puig Fernández yamipuig@finlay.edu.cu
Rolando Ochoa Azze ochoa@finlay.edu.cu

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