Transferencia

FUNDACIÓN BOTÍN

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Flashes Transferencia

Cuatro investigadores del CNIO reciben un total de casi un millón de euros en financiación de la AECC para desarrollar sus proyectos de investigación del cáncer

Con casi 300.000 euros cada uno, los jefes de grupo Óscar Fernández-Capetillo, Ana Losada y Sandra Rodríguez Perales llevarán a cabo proyectos en tumores pediátricos y para la eliminación de genes de fusión –específicos de las células tumorales– con la técnica de edición genética CRISPR.

La AECC otorga a la investigadora Cristina Rodríguez-Antona una Ayuda Idea Semilla con 20.000 euros, para desarrollar un proyecto en el que se tratará de mejorar la respuesta a la inmunoterapia, una de las estrategias más prometedoras contra el cáncer pero que todavía muestra una eficacia limitada en algunos tumores.

Además, la Asociación también apoya este año a Sara García-Alonso, Cristina Segovia y Auba Gayà, tres jóvenes investigadoras que están en el inicio de sus carreras, para estudiar nuevas estrategias terapéuticas en cáncer de pulmón y cáncer de vejiga, y la relación que hay entre asma y cáncer de páncreas.

Más info:
cnio.es/noticias/noticias-cnio/cuatro-investigadores-cnio-reciben-casi-un-millon-de-euros-financiacion-aecc/

Descubren un tipo de células responsables de la reparación cardíaca tras el infarto

Investigadores del Cima y de la Clínica Universidad de Navarra han liderado un estudio internacional en el que han identificado a las células del corazón que son las encargadas de reparar el daño ocurrido en este órgano tras el infarto. Estas células "reparadoras" son una subpoblación de fibroblastos cardíacos que juegan un papel fundamental en la generación de la cicatriz de colágeno necesaria para evitar la ruptura de la pared ventricular. La investigación revela además los mecanismos moleculares implicados en la activación de estas células y en la regulación de su función.

Este hallazgo, en el que han participado investigadores básicos y clínicos, permitirá identificar nuevas diana terapéuticas y desarrollar tratamientos dirigidos que permitan controlar el proceso de reparación del corazón tras el infarto.

El estudio se publica en el último número de la revista Circulation, principal revista científica de la Asociación Americana del Corazón.

Más info:
cima.unav.edu/detalle-seccion-noticia/2020/09/29/descubren-un-tipo-de-celulas-responsables-de-la-reparacion-cardiaca-tras-el-infarto/-/asset_publisher/CR3o/content/2020-09-29-noticia-cima-cthrc1/10174

Científicos del CSIC participan en el descubrimiento de causas genéticas e inmunitarias que agravan la Covid-19

Un estudio internacional con participación del Consejo Superior de Investigaciones Científicas (CSIC) ha descubierto la existencia de causas genéticas e inmunológicas que agravan la Covid-19. Más del 10 % de pacientes que desarrollan Covid-19 grave, algunos de ellos jóvenes y sanos, tienen anticuerpos erróneos –o autoanticuerpos- que atacan al propio sistema inmunitario. Al menos otro 3,5% son portadores de mutaciones genéticas que afectan a su respuesta inmunitaria. En ambos grupos el resultado es básicamente el mismo: los pacientes presentan un defecto de la inmunidad mediada por los interferones tipo I, un grupo de 17 proteínas cruciales para la protección de nuestras células frente a las infecciones virales. El hallazgo podría contribuir a identificar personas con riesgo de sufrir una infección grave y a personalizar los tratamientos.

Estos descubrimientos, publicados en dos artículos en la revista Science (1 y 2), ayudan a explicar por qué algunos individuos desarrollan una infección por SARS-CoV-2, el virus causante de la Covid-19, mucho más grave que otros de la misma edad (incluyendo individuos entre 20 y 30 años sanos que requieren ingreso en UCI). Los hallazgos pueden también ayudar a comprender las bases moleculares que explicarían por qué la mortalidad es mayor en hombres que en mujeres.

“Los resultados demuestran que diferencias genéticas que existen en la población pueden explicar por qué personas sanas sin enfermedades previas que se infectan con SARS-CoV2 pueden llegar a desarrollar Covid-19 muy grave”, explica la investigadora del CSIC Anna Planas, del Instituto de Investigaciones Biomédicas de Barcelona (IIBB-CSIC), que ha participado en el estudio.

Más info:
csic.es/es/actualidad-del-csic/cientificos-del-csic-participan-en-el-descubrimiento-de-causas-geneticas-e

Un estudio muestra que los modelos tradicionales no pueden predecir con certeza la evolución de una epidemia

Un nuevo estudio muestra que los modelos epidemiológicos tradicionales, como los de tipo SIR empleados para pronosticar el comportamiento de epidemias, no pueden predecir con certeza la evolución de una epidemia, ni el pico ni el final, mientras la epidemia está teniendo lugar. "A lo más que podemos aspirar es a obtener predicciones probabilísticas, como las del tiempo, donde se nos informe de con qué probabilidad se puede alcanzar el pico antes de una fecha dada, por ejemplo", explica la investigadora Susanna Manrubia, del Centro Nacional de Biotecnología (CNB-CSIC), que ha coordinado el estudio, publicado en Proceedings of the National Academy of Sciences (PNAS). El trabajo es fruto de la colaboración de los investigadores Susanna Manrubia y Saúl Ares, del CNB-CSIC; José A. Cuesta, de la Universidad Carlos III; y Mario Castro, de la Universidad Pontificia Comillas.

"Este problema que presentan los modelos tradicionales se puede atenuar con más y mejores datos, y con modelos testados en distintos contextos, pero no se puede resolver completamente", añaden los autores. En los modelos tradicionales de la epidemiología se divide a la población en cierto número de clases o "compartimentos": individuos susceptibles, infectados, recuperados, y varias otras dependiendo de cada caso particular. Estos "modelos de tipo SIR", por las iniciales de las clases básicas anteriores, capturan las características fundamentales de la dinámica de un proceso de propagación de infecciones. "Pero en este estudio hemos mostrado que los datos empíricos no pueden predecir el curso futuro de la epidemia, cuándo llegará a su máximo, si habrá o no un repunte, cuál será el número final de fallecidos o si el confinamiento tendrá el efecto deseado", detallan.

Más info:
csic.es/es/actualidad-del-csic/un-estudio-muestra-que-los-modelos-tradicionales-no-pueden-predecir-con-certeza

Top US, UK, and EU universities working together to help economies fuel post-COVID recovery

TenU, the transatlantic collaboration of ten top technology transfer offices, has held its inaugural event bringing together university and government leaders.

Ten world-leading US, UK, and EU universities are discussing with leaders in national governments and funding bodies how to harness the enormous potential of research and commercialisation for the urgent economic recovery in the wake of the COVID-19 pandemic. University researchers contributed to alleviating the COVID-19 crisis, helping to save lives by engineering new breathing devices and testing appliances and working tirelessly to develop effective vaccines. The economic challenges ahead present an opportunity to build on innovations in research to stimulate economies with wealth and jobs.

Researchers and technology transfer offices of the TenU universities have been at the forefront of the fight against COVID-19 and again demonstrated during this pandemic that they have the expertise, networks and systems in place to respond to an emergency quickly and effectively and find the solutions that save lives.

In the early stages of the pandemic, several TenU members supported the quick design and production of breathing devices for COVID-19 patients. UCL worked on designs of a new breathing aid developed by engineers at UCL, Mercedes-AMG HPP and clinicians at UCLH. The breathing aid was produced within 100 hours from the initial meeting to production of the first device, leading to a UK Government order for up to 10,000 devices.

TenU members advanced at least four of the most widely used rapid testing devices. DnaNudge, a scale up based at Imperial's White City campus, received an order of £161 million to deploy 5000 devices across the UK. TenU members also advanced four different vaccines and received £130 million from governments to continue trials. By July, Oxford researchers had entered into a partnership with Astra Zeneca to develop and manufacture vaccines, and are now trialling the vaccine with 30,000 patients around the world.

Más info:
innovation.ox.ac.uk/news/top-us-uk-eu-universities-working-together-help-economies-fuel-post-covid-recovery/

MIT researchers and collaborators work to prepare manufacturers for future crises

At the beginning of the Covid-19 crisis, the state of Massachusetts assembled a manufacturing emergency response team as part of its efforts to respond to the desperate need for personal protective equipment (PPE), particularly masks and gowns. The Massachusetts Emergency Response Team (M-ERT) — aided by MIT faculty, students, staff, and alumni — helped local manufacturers produce more than 9 million pieces of PPE as well as large volumes of hand sanitizer, disinfectants, and test swabs.

Building on the experiences and knowledge gained through the work of M-ERT, a new project, which was recently awarded funding from the National Science Foundation (NSF), is developing a network collaboration model designed to help ecosystems organize and enable manufacturers to rapidly "pivot," in an emergency, from producing their standard products to producing PPE or other urgently needed goods. Elisabeth Reynolds, executive director of the MIT Task Force on the Work of the Future and the MIT Industrial Performance Center, John Hart, professor of mechanical engineering and director of the Laboratory for Manufacturing and Productivity, Ben Linville-Engler, industry and certificate director of the System Design and Management program, and Haden Quinlan, program manager for MIT's Center for Additive and Digital Advanced Production Technologies, are collaborating with researchers from the University of Massachusetts at Lowell and the Worcester Polytechnic Institute, as well as the Massachusetts Technology Collaborative.

"The Massachusetts manufacturing ecosystem proved to be extremely valuable in response to Covid-19," says Reynolds, "and it was activated in an important way because of the M-ERT collaboration."

The NSF grant will allow researchers to gather and learn from the data from the recent emergency manufacturing effort, and also design a network and collaboration model applicable to manufacturing in future crises. The RESPOND network (Rapid Execution for Scaling Production Of Needed Designs) will support the establishment of a multidisciplinary, diverse stakeholder ecosystem that can help support the production of new products in large volumes during times of crises.

Más info:
news.mit.edu/2020/mit-researchers-collaborators-work-prepare-manufacturers-future-crises-1002

NIH funds first nationwide network to study rare forms of diabetes

A nationwide study funded by the National Institutes of Health will seek to discover the cause of several unusual forms of diabetes. For years, doctors and researchers have been stymied by cases of diabetes that differ from known types. Through research efforts at 20 U.S. research institutions, the study aims to discover new forms of diabetes, understand what makes them different, and identify their causes.

The Rare and Atypical Diabetes Network(link is external), or RADIANT, plans to screen about 2,000 people with unknown or atypical forms of diabetes that do not fit the common features of type 1 and type 2 diabetes.

A person with atypical diabetes may be diagnosed and treated for type 1 or type 2 diabetes, but not have a history or signs consistent with their diagnosis. For example, they may be diagnosed and treated for type 2 diabetes but may not have any of the typical risk factors for this diagnosis, such as being overweight, having a family history of diabetes, or being diagnosed as an adult. Alternately, a person with atypical diabetes may respond differently than expected to the standard diabetes treatments.

“It’s extremely frustrating for people with atypical diabetes when their diabetes seems so different and difficult to manage,” said the study’s project scientist, Dr. Christine Lee of NIH’s National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). “Through RADIANT, we want to help patients and the broader healthcare community by finding and studying new types of diabetes to shed light on how and why diabetes can vary so greatly.”

RADIANT researchers will build a comprehensive resource of genetic, clinical, and descriptive data on previously unidentified forms of diabetes for the scientific and healthcare communities.

The study’s researchers will collect detailed health information using questionnaires, physical exams, genetic sequencing, blood samples, and other tests. People found to have unknown forms of diabetes may receive additional testing. Some participant family members may also be invited to take part in the study.

Más info:
nih.gov/news-events/news-releases/nih-funds-first-nationwide-network-study-rare-forms-diabetes

Dewpoint Therapeutics raise $77m in Series B financing

Dewpoint Therapeutics Inc, a spin-off from the German Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, and Whitehead Institute, Boston, kicked-off in January 2019 with a $60m Series A financing. The follow-on financing was led by Arch Venture Partners and co-financed by new investors Maverick Ventures and Bellco Capital along with existing investors Polaris Partners, Samsara Biocapital, 6 Dimensions Capital, EcoR1 Capital and the venture capital vehicle Leaps by Bayer.

Dewpoint Therapeutics pioneers a completely new approach to treat cancer or neurological conditions such as amyotrophic lateral sclerosis by targeting biomolecular condensates. Biomolecular condensates are like cell organelles without a cell membrane - they compartmentalise certain biochemical processes and the necessary macromolecules simply by phase transfer.

Company co-founders Anthony Hyman from the Dresden-based MPI of Molecular Cell Biology and Genetics and Richard Young from Whitehead Institute, MIT, have discovered that the previously underexplored activation domains of transcription factors are brought into proximity by phase transfer in aqueous cell compartments, thereby initiating and maintaining the transcription of specific genes. A handful of activation domains such as "mediator" or "p300" regulate the transcription of hundreds of different transcription factors. The researchers want to take advantage of this, in order to specifically influence the disturbed transcription in pathological processes - an approach that does not target the genetic level, but aims at correcting disturbed biological functions. Fields of application for addressing the molecular condensates with drugs are found in almost all important indications.

The company has partnerships with Merck in HIV and with Bayer in women's health and cardiology.

Más info:
european-biotechnology.com/up-to-date/latest-news/news/dewpoint-therapeutics-raise-77m-in-series-b-financing.html