



**ANTENA
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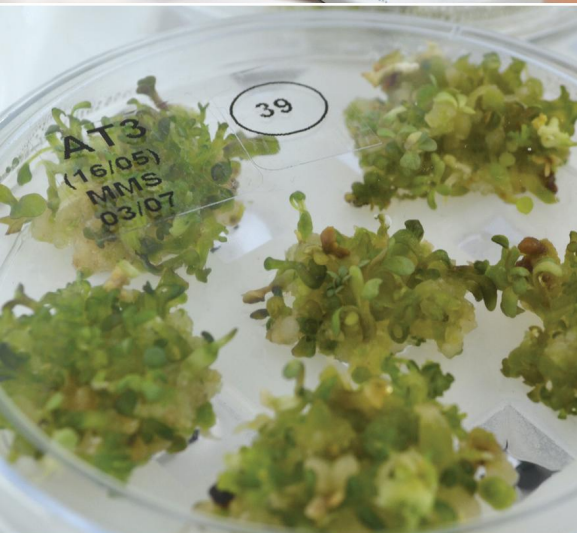
PLATAFORMA DE VIGILANCIA TECNOLÓGICA
E INTELIGENCIA COMPETITIVA



SECTOR BIOTECNOLOGÍA

BIOTECNOLOGÍA:

Octubre - Noviembre 2016



BOLETÍN DE NOVEDADES



**ANTENA
TECNOLÓGICA®**
PLATAFORMA DE VIGILANCIA TECNOLÓGICA
E INTELIGENCIA COMPETITIVA

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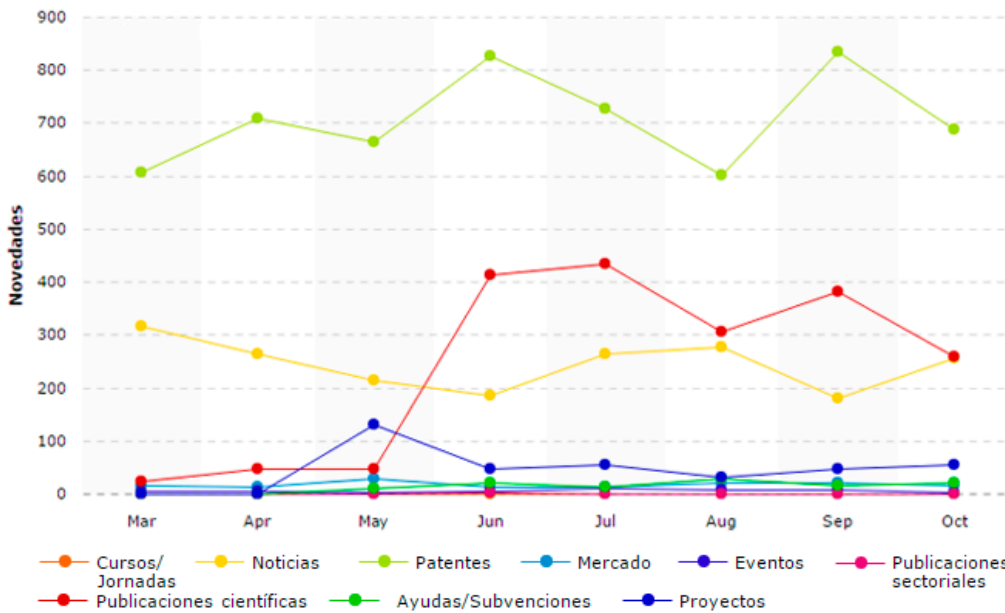
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Inteligencia Competitiva

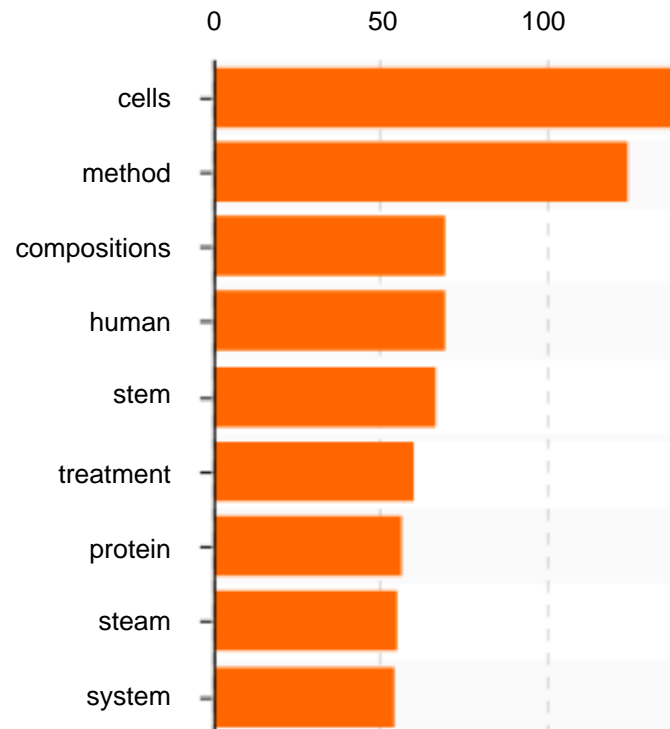


La gráfica de tendencias presenta la cantidad de novedades recolectadas en cada proceso de monitoreo de la Plataforma-Biotecnología, diferenciada por categoría/tipo de información, en un año. En este sentido, la gráfica siguiente muestra que entre marzo y octubre de 2016, la categoría más activa en el Sector Biotecnología corresponde a Patentes, con más de 600 novedades mensuales.

El análisis de grupos temáticos (Clúster) permiten determinar el énfasis o las relaciones internas que no son obvias, así desde los contenidos textuales es posible trabajar con un vocabulario que visualice las de mayor frecuencia. En este ámbito, las novedades identificadas en el periodo de análisis para del sector biotecnología se vinculan mayoritariamente con el concepto células, destacando entre otras cosas técnicas de ingeniería y regeneración de tejidos que combinan el uso de células madres con biomateriales obtenidos a partir quitosano.

El quitosano es un polímero natural bioactivo, biocompatible y posee propiedades mecánicas y funcionales que apoyan la regeneración del tejido. En los últimos años ha recibido una atención significativa debido a su versatilidad y gran potencial para la regeneración de tejidos cardíacos (<https://goo.gl/9hTDfx>), óseo y cartílago (<https://goo.gl/BExsRz>), entre otros.

(Ref: IALE Tecnología SpA)



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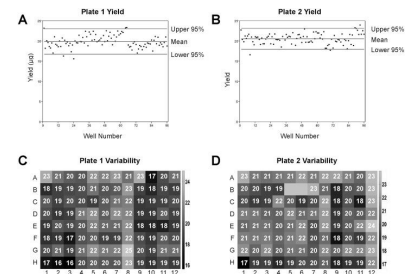
PUBLICACIONES CIENTÍFICAS

Purificación de alto rendimiento de proteínas recombinantes utilizando placas de inteína autoadherentes

Publicada el 24/10/2016

Publication date: 1 January 2017. Source: Analytical Biochemistry, Volume 516 Author(s): M.J. Coolbaugh, M.J. Shakalli Tang, D.W. Wood High throughput methods for recombinant protein production using *E. coli* typically involve the use of affinity tags for simple purification of the protein of interest. One drawback of these techniques is the occasional need for tag removal before study, which can be hard to predict. In this work, we demonstrate two high throughput purification methods for untagged protein targets based on simple and cost-effective self-cleaving intein tags. Two model proteins, *E. coli* beta-galactosidase (Gal) and superfolder green fluorescent protein (sfGFP), were purified using self-cleaving versions of the conventional chitin-binding domain (CBD) affinity tag and the nonchromatographic elastin-like-polypeptide (ELP) precipitation tag in a 96-well filter plate format.

[ver más...](#)



Células madre mesenquimales implantadas en andamios biofuncionalizados para ingeniería de tejidos

Publicada el 26/09/2016

Publication date: 2017 Source: Current Developments in Biotechnology and Bioengineering Author(s): K.A.T. Carvalho Regenerative medicine has been looking for newer alternative biomaterials to develop new tissue repair approaches. In such a scenario, the mesenchymal stem cells emerge as promising for tissue regeneration through cell replacement, gene transfer, or paracrine effects, because mesenchymal stem cells are the majority of isolated cells and because of their presence in all derived mesenchymal tissues in adult solid organs as well as in mesoderm from embryonic tissue. This chapter discusses some of the related aspects. restoration of function.

[ver más...](#)



Biología

Principios de la ingeniería genética

Publicada el 26/09/2016

Publication date: 2017. Source: Current Developments in Biotechnology and Bioengineering Author(s): C. Oliveira, T.Q. Aguiar, L. Domingues The field of genetic engineering has revolutionized many scientific fields, from fundamental sciences to medicine and engineering. The genetic engineering applications are wide ranging, but herein emphasis is given to its application in the biotechnology and bioengineering fields. Since their appearance in the early 1970s, the techniques used for modifying living organisms have evolved significantly. This chapter compiles information on the principles of genetic engineering, not only describing the basic techniques used in molecular biology and the basics of recombinant DNA technology, but also presenting more recent developments in these techniques, as well as up-to-date in silico tools.

[ver más...](#)

De la ingeniería de tejidos a la ingeniería de órganos

Publicada el 16/09/2016

Publication date: 2017 Source: Reference Module in Materials Science and Materials Engineering Author(s): M. Varkey, A. Atala Novel therapies resulting from tissue engineering and regenerative medicine offers new hope to patients suffering from injuries, end-stage organ failure, and other diseases. Currently, treatment modalities for patients suffering from diseased or injured organs involve organ transplantation. However, there is a huge shortage of donor organs, which is worsening annually as the population ages and the cases of organ failure increases. Scientists in the field of tissue engineering and regenerative medicine apply principles of cell transplantation, material science and bioengineering to construct biological substitutes that can restore and maintain normal function in diseased and injured tissues.

[ver más...](#)

Biología

Proteínas recombinantes como biomateriales emergentes

Publicada el 13/09/2016

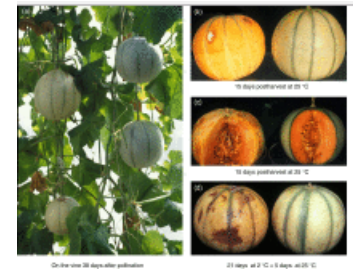
Publication date: 2017 Source: Reference Module in Materials Science and Materials Engineering Author(s): J.A.M. Ramshaw, J.A. Werkmeister The emergence of recombinant technology provides a method for production of new protein-based biomedical materials. Compared to naturally derived animal proteins, which show variation in quality, purity and predictability of performance and the risk of transmission of infectious agents, recombinant proteins provide uniform, defined products that eliminate disease risk.

[ver más...](#)

Ingeniería genética para la calidad postcosecha

Publicada el 07/09/2016

Publication date: 2017 Source: Encyclopedia of Applied Plant Sciences, Volume 1 Author(s): B. Thomas The appearance of fresh fruit and vegetables has long been the major criterion in making purchasing decisions by consumers, but there is nowadays growing emphasis on sensory properties such as texture, taste, and aroma and on nutritive value. The advances made in isolating and characterizing genes involved in either the overall regulation of the ripening–senescence process (biosynthesis and action of the plant hormone ethylene) or in individual pathways (cell wall degradation, chlorophyll breakdown, aroma volatiles production, synthesis of pigments, etc.) have opened up a wide range of opportunities for the control of quality traits through biotechnological methods.



[ver más...](#)

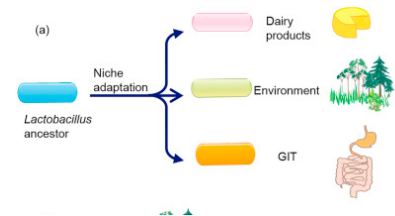


Biología

Avances en genómica y metabólica de lactobacilos

Publicada el 04/09/2016

Publication date: February 2017 Source: Food Microbiology, Volume 61
Author(s): Ewelina Stefanovic, Gerald Fitzgerald, Olivia McAuliffe The Lactobacillus genus represents the largest and most diverse genera of all the lactic acid bacteria (LAB), encompassing species with applications in industrial, biotechnological and medical fields. The increasing number of available Lactobacillus genome sequences has allowed understanding of genetic and metabolic potential of this LAB group. Pangenome and core genome studies are available for numerous species, demonstrating the plasticity of the Lactobacillus genomes and providing the evidence of niche adaptability.



[ver más...](#)



Biología

PROYECTOS

Nuevo paradigma a base de nanotecnología para diseñar tejido de hígado vascularizado para transplantes

Publicada el 10/10/2016

Organ transplantation is often the only life saving medical approach for several diseases, in spite of many associated problems (lack of organ donors, rejection, life-long heavy medication). The innovative therapeutic approach of the 21th century is focusing on bioartificial organs as an alternative solution.

[ver más...](#)

Dilucidando el rol de la actina nuclear en la estabilidad genómica

Publicada el 26/09/2016

Nuclear actin-related proteins (ARPs) are stoichiometric subunits of chromatin remodelers and specifically recognize and bind to (modified) histone proteins. In the case of the chromatin modifiers INO80, SWR1 and NuA4, canonical monomeric actin is also an important constituent of these large macromolecular complexes and actively takes part in the remodeling reaction.

[ver más...](#)

Biología

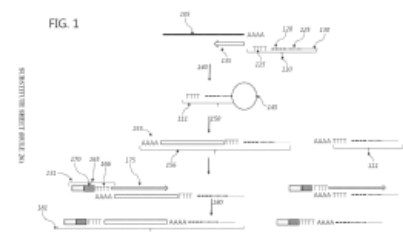
PATENTES

Métodos y composiciones para la amplificación transcriptómica

Publicada el 28/10/2016

The disclosure provides for methods, compositions, systems, devices, and kits whole transcriptome amplification using stochastic barcodes.

[ver más...](#)

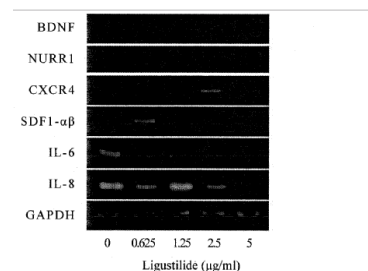


Método para mejorar el efecto terapéutico de células madre

Publicada el 21/10/2016

A method for enhancing the therapeutic effect of a stem cell is provided. The method comprises treating the stem cell with ligustilide, wherein the treatment is conducted in a culture medium of the stem cell. A method of stem cell treatment is also provided, comprising administering to a subject in need an effective amount of a stem cell or a combination of ligustilide and a stem cell, wherein the stem cell has been treated with ligustilide.

[ver más...](#)





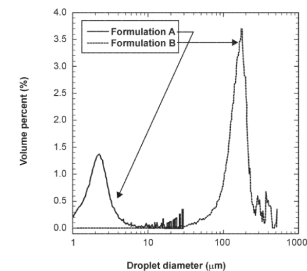
Biotecnología

Agentes ultrasonido para ingeniería de tejidos

Publicada el 30/09/2016

The present invention is directed to compositions and methods for delivering a tissue scaffold comprising ultrasound-triggerable agents to an individual.

[ver más...](#)



Sistemas y métodos para el análisis de patrones genómicos

Publicada el 10/09/2016

The invention provides methods for analyzing sequence data in which a large amount and variety of reference data are efficiently modeled as a reference graph, such as a directed acyclic graph (DAG). The method includes determining positions of k-mers, within a reference graph that represents a genomic sequence and known variation, storing the positions of each k-mer in a table entry indexed by a hash of that k-mer, and identifying a region within the reference graph that includes a threshold number of the k-mers, by reading from the table entries indexed by hashes of substrings of a subject sequence. The subject sequence may subsequently be mapped to the candidate region.



[ver más...](#)

Biotecnología

Anticuerpo monoclonal que reconoce específicamente el linfoma de células B y uso del mismo

Publicada el 09/09/2016

Provided is a monoclonal antibody which specifically recognizes B cell lymphoma cells and a use thereof. More specifically, provided are the monoclonal antibody; a pharmaceutical composition for preventing or treating B cell lymphoma including the monoclonal antibody; a composition for diagnosing B cell lymphoma including the monoclonal antibody; a method for providing information for diagnosing B cell lymphoma using the monoclonal antibody; a chimeric antigen receptor (CAR) protein including i) the antibody, ii) a transmembrane domain, and iii) an intracellular signaling domain; a recombinant vector which expresses the CAR protein; a CAR-modified T cell transformed with the recombinant vector; a pharmaceutical composition for preventing or treating B cell lymphoma including the CAR-modified T cell; and an antibody-drug conjugate wherein the monoclonal antibody and a drug are conjugated.

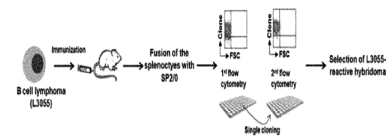


FIG. 1

[ver más...](#)

Optimización de bioproceso y medio para cultivo de células

Publicada el 02/09/2016

The invention provides a chemically defined cell culture media and methods of using the media. The invention also provides an inverse screen to identify small molecules and synergies stimulating proliferation in a chemically defined medium. In this chemical-genetics approach, a compound-protein interaction data-base is used to systematically score genetic targets on a screen-wide scale to extract further information about cell growth. Validated factors were investigated for their ability to maintain cell growth over multiple passages in the chemically defined medium (CDM).

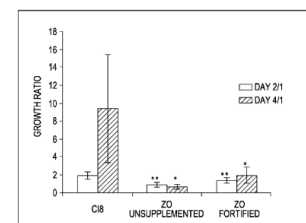


Figure 1A

[ver más...](#)



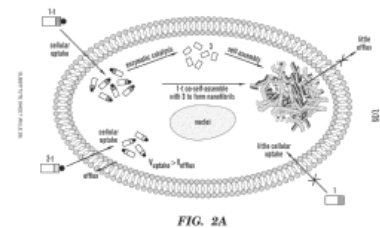
Biología

Péptidos sintéticos y formación enzimática de hidrogeles intracelulares

Publicada el 02/09/2016

The invention relates to a peptide that includes a plurality of amino acid residues and an enzymatically cleavable moiety including taurine or hypotaurine, the enzymatically cleavable-moiety being linked to the peptide via covalent bond, wherein the peptide is capable of self-assembly to form nanofibrils in the presence of an enzyme that hydrolyzes the enzymatically cleavable-moiety. Compositions containing the enzymatically responsive peptide, and the use thereof for forming a nanofibril network internally of cells, for treating a cancerous condition, and imaging cells are also disclosed.

[ver más...](#)





Biología

NOTICIAS

Las células madre también se oxidan

Publicada el 24/10/2016

Oxygen in the air is well known to cause damaging rust on cars through a process known as oxidation. Similarly, a research group at Lund University in Sweden, has now identified that certain cells during embryonic development also are negatively affected by oxidation. This oxidation is capable of leading to a block in cellular function.

[ver más...](#)

Plugin para explorar datos públicos sobre espectrometría de masas para la proteómica dirigida

Publicada el 14/10/2016

Biologists often envision their hypotheses within a set of protein interactions, networks, and pathways. In turn, their experiments may focus on measuring an explicit subset of these proteins, corresponding to a targeted proteomics experiment. To date, however, designing a targeted proteomics experiment is very time-consuming, and is typically done only by mass spectrometry specialists.

[ver más...](#)

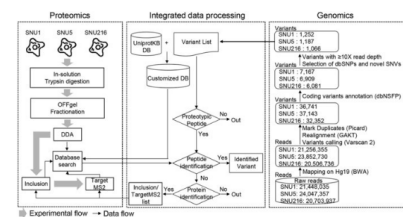
Biotecnología

Un enfoque proteogenómico para evidenciar proteínas de las variantes genómicas en células cancerígenas

Publicada el 13/10/2016

Variations in protein coding sequence may sometimes play important roles in cancer development. However, since variants may not express into proteins due to various cellular quality control systems, it is important to get protein-level evidence of the genomic variations.

[ver más...](#)

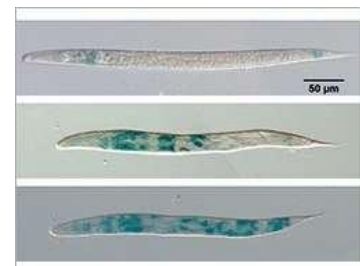


Represión epigenética suprime la inestabilidad genómica

Publicada el 10/10/2016

Susan Gasser and her group at the FMI have found the pathway through which eukaryotic organisms protect their genomes from rearrangements and deletions that arise from repetitive DNA. Human genomes, like those of simple animals like worms, are filled with repeat sequences, many being remnants of viral infections of the distant past. This repetitive DNA is usually kept silent. The transcription of these repeats into RNA was shown by the Gasser laboratory to generate toxic hybrids between RNA and DNA.

[ver más...](#)

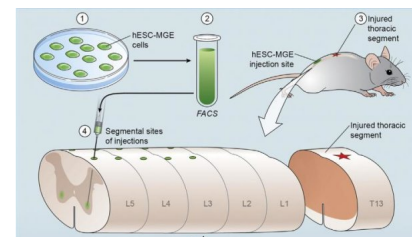


Biotechnología

Tratamiento con células madre humanas alivian efectos secundarios de lesiones de la médula espinal en ratas

Publicada el 04/10/2016

People with spinal cord injuries suffer from many complications in addition to paralysis and numbness. Some of these problems are caused by a lack of the neurotransmitter GABA in the injured spinal cord. Now research in mice is showing that human embryonic stem cells differentiated into medial ganglionic eminence (MGE)-like cells, which produce GABA, may help alleviate two of the most severe side effects — chronic neuropathic pain and bladder dysfunction.



[ver más...](#)

Científicos develan método para tratamientos de células madre más seguros

Publicada el 03/10/2016

Because they can develop, or differentiate, into basically any tissue type, pluripotent stem cells (PSC) could be the key to a host of regeneration therapies. But those PSCs in a culture dish that remain undifferentiated could form teratomas, a kind of tumor, if transplanted into patients. This week in ACS Central Science, researchers report a new light-based technology that could remove this risk.

[ver más...](#)



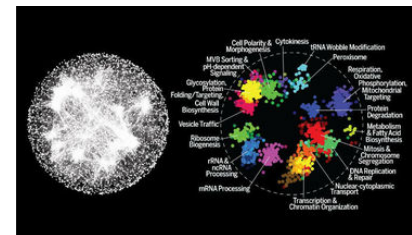
Biología

Elaboran primer mapa global de la diversidad genética en el planeta

Publicada el 29/09/2016

El estudio, que publica hoy la revista Science, se basa en el análisis de casi 93 mil secuencias genéticas de más de cuatro mil 500 especies de mamíferos terrestres y anfibios, sacadas de las bases de datos públicos, y otorgándoles coordenadas geográficas.

[ver más...](#)



Microbioma saludable ayuda a la regeneración de tejidos

Publicada el 25/09/2016

The immune system is traditionally viewed as a protector, defending the host from bacterial intruders. But it also plays a controversial role in tissue repair, with data suggesting that it both promotes wound healing and hinders repair. Now, a new study published in the journal eLife shows that changes in the bacterial composition of the microbiome trigger differential immune responses that ultimately affect regenerative processes.

[ver más...](#)



Biotecnología

Remoción de marcadores celulares allana el camino hacia células madre

Publicada el 20/09/2016

In reading, a bookmark tells where you stopped. Cells use bookmarks too, specific proteins that help the cell remember what collection of genes needs to be turned on again after the brief halt of gene expression during cell division. University of Alabama at Birmingham researchers are exploring the implications removing those bookmarks has on the promise of stem cells.

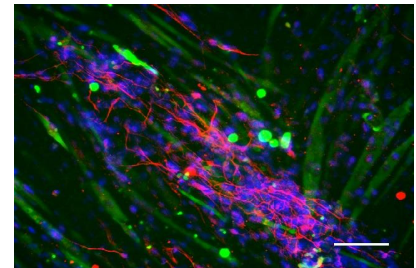
[ver más...](#)

Nueva técnica genera células madre neuronales de humanos para ingeniería de tejidos

Publicada el 19/09/2016

Grantee News Researchers have discovered a new technique for generating rapidly-differentiating human neural stem cells for use in a variety of tissue engineering applications, including a three-dimensional model of the human brain, according to a new report.

[ver más...](#)





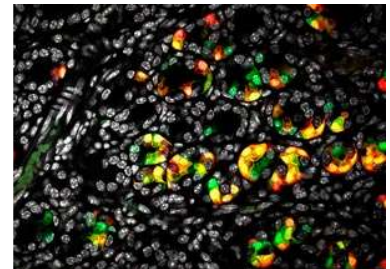
Biología

Comportamiento de células madre revelado a través de una combinación de modelado y microscopía

Publicada el 09/09/2016

The renewal of cells in a healthy stomach is being studied by A*STAR researchers through a multidisciplinary approach that combines cell lineage tracing experiments and mathematical modeling¹. The models provide a valuable baseline for studying gastric diseases, and the approach can be used to investigate the developmental dynamics of other organs.

[ver más...](#)





Biología

MERCADO

Mercado de bioinformática por sector, producto y aplicación - Pronóstico global al 2022

Publicada el 26/10/2016

The global bioinformatics market is projected to reach USD 16.18 billion by 2021 from USD 6.21 billion in 2016, growing at a CAGR of 21.1% during the forecast period. In this report, the bioinformatics market is broadly segmented on the basis of sector, products and services, application, and region. Factors such as the growing demand for nucleic acid and protein sequencing, increasing initiatives from government and private organizations, growing application of bioinformatics, and improved collaborative ties between companies and research institutes are driving the growth of the bioinformatics market.

[ver más...](#)

Mercado global de transcriptómica 2016-2020

Publicada el 22/09/2016

Transcriptomics involves the collection and analysis of transcriptomes of different types of cells or tissues present in an organism. The transcriptome characterizes the set of all RNA molecules, which is a part of the genetic code. The difference in genetic expression symbolizes the wide-ranging biochemical and physical differences present among various cells and tissues that may cause genetic disorders.

[ver más...](#)



Biología

Mercado global de anticuerpos monoclonales para el cáncer mamario 2016-2020

Publicada el 06/09/2016

Breast cancer is characterized by the malignancy of cells in the tissues of the breast. HER-2 breast cancer is the most common type of breast cancer. The HER-2 protein, present on the surface of normal breast cells, affects the growth of the malignant cells. The uncontrolled synthesis of this protein stimulates the growth and division of malignant cells. Antibodies are the proteins produced by B-cells (in the bone marrow) in the immune system. These proteins attach themselves to antigens, which act as markers, and are then destroyed by phagocytes. B-cells produce different antibodies, which attach themselves to different sites of an antigen. mAbs are monospecific, as they are the clones of a single parent cell.

[ver más...](#)

Biología

EVENTOS

Conferencia Internacional BIO Asia

Publicada el 29/09/2016

March 14-15, 2017. Grand Hyatt Tokyo, Japan. The BIO Asia International Conference, co-hosted by the Biotechnology Innovation Organization (BIO), BioCentury and the Japan Bioindustry Association (JBA), brings together the global biotechnology and pharmaceutical industry to explore licensing and research collaborations in the current Asia-Pacific business and policy environments. Gain insights into the changes, challenges, and opportunities key opinion and policy leaders foresee for the Japanese biotech market.



[ver más...](#)

Para más información:

Programa Nacional de Vigilancia Tecnológica e Inteligencia Competitiva (VINTEC)
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