INULIN AND INULIN ACETATE FORMULATIONS

Nº publicación EP3586830A1 01/01/2020
Solicitantes SOUTH DAKOTA STATE UNIV [US]
Resumen The disclosure provides compositions that include microparticles or nanoparticles of beta inulin or inulin acetate and an active agent, where the active agent is contained within individual microparticles or nanoparticles. The active agent can be, for example, a vaccinating antigen, an antigenic peptide sequence, or an immunoglobulin. The compositions can be incorporated into various formulations for administration to a subject such as a human or animal. The invention further provides methods of using the compositions and formulations, including methods of stimulating an immune response in a subject, or enhancing an immune response in a subject, for the purposes of treating, preventing, or inhibiting an infectious disease, autoimmune disease, immunodeficiency disorder, neoplastic disease, degenerative disease, an aging disease, or a combination thereof.
INULIN AND INULIN ACETATE FORMULATIONS

Nº publicación EP3586829A1 01/01/2020
Solicitantes SOUTH DAKOTA STATE UNIV [US]
Resumen The disclosure provides compositions that include microparticles or nanoparticles of beta inulin or inulin acetate and an active agent, where the active agent is contained within individual microparticles or nanoparticles. The active agent can be, for example, a vaccinating antigen, an antigenic peptide sequence, or an immunoglobulin. The compositions can be incorporated into various formulations for administration to a subject such as a human or animal. The invention further provides methods of using the compositions and formulations, including methods of stimulating an immune response in a subject, or enhancing an immune response in a subject, for the purposes of treating, preventing, or inhibiting an infectious disease, autoimmune disease, immunodeficiency disorder, neoplastic disease, degenerative disease, an aging disease, or a combination thereof.

NANOSTRUCTURED FORMULATIONS FOR THE DELIVERY OF SILIBININ AND OTHER ACTIVE INGREDIENTS FOR TREATING OCULAR DISEASES

Nº publicación EP3587392A1 01/01/2020
Solicitantes DISTRETTO TECNOLOGICO SICILIA MICRO E NANO SISTEMI S C A R L [IT]
Resumen Formulations are described, containing silibinin or other active ingredients incorporated in lipid nanoparticle systems of the SLN and NLC type, and based on calixarenes, possibly mucoadhesive, or in micellar and nanoparticle systems based on amphiphilic inulin copolymers for use in the treatment of neurodegenerative ocular diseases. The versatility of the calixarene compound is also described, capable of charging and releasing active ingredients characterized by low water solubility, easy chemical and enzymatic degradation, low bioavailability, either of natural origin or not, to be used in the treatment of ocular diseases.
RNA INTERFERENCE MEDIATED INHIBITION OF HEPATITIS B VIRUS (HBV) GENE EXPRESSION USING SHORT INTERFERING NUCLEIC ACID (SINA)

Nº publicación EP3587574A1 01/01/2020
Solicitantes SIRNA THERAPEUTICS INC [US]
Resumen The present invention relates to compounds, compositions, and methods for the study, diagnosis, and treatment of traits, diseases and conditions that respond to the modulation of HBV gene expression and/or activity, and/or modulate a HBV gene expression pathway. Specifically, the invention relates to double-stranded nucleic acid molecules including small nucleic acid molecules, such as short interfering nucleic acid (siNA), short interfering RNA (siRNA), double-stranded RNA (dsRNA), micro-RNA (miRNA), and short hairpin RNA (shRNA) molecules that are capable of mediating or that mediate RNA interference (RNAi) against HBV gene expression.
Apparatus and methods are described for use with a heating device (26) configured to heat at least a portion of a subject's body. A nanoparticle (22) is configured to be administered to the subject, the nanoparticle including at least one inner core (30) that includes a magnetic material having a Curie temperature; a phase-change-material layer (31) that surrounds the inner core and that comprises a phase-change material that is configured to absorb latent heat of fusion by undergoing a phase change selected from the group consisting of: solid to liquid, and gel to liquid, the phase-change occurring at a phase-change temperature that is lower than the Curie temperature; and an outer layer (32) disposed around the phase-change-material layer, the outer layer comprising a plurality of nano-subparticles (34) that are separated from one another, such as to form a segmented layer. Other applications are also described.
COMPOSITIONS AND METHODS FOR NEUROPROTECTION UTILIZING NANOPARTICULATE SILVER

Nº publicación: EP3585401A1  01/01/2020
Solicitantes: AVALON NANOSILVER RX HK LTD [HK]
LAU JOHNSON YIU NAM [US]

Resumen: A preparation of silver nanoparticles has been found to be effective in improving functional and behavioral recovery from traumatic spinal cord injury. The silver nanoparticles are provided in a non-flowable gel vehicle, from which they are release at high efficiency, that is applied locally at the site of the spinal cord injury. Silver nanoparticle formulations described herein were found to modify the M1/M2 macrophage phenotype ratio and provides a synergistic effect in the combination with arginase to promote healing processes at the treated injury site, reducing postinjury inflammation.

PHARMACEUTICAL FORMULATION WITH IMPROVED SOLUBILITY AND BIOAVAILABILITY

Nº publicación: EP3586827A1  01/01/2020
Solicitantes: CONSEJO SUPERIOR INVESTIGACION [ES]
BIOINICIA S L [ES]
ZF POLPHARMA S A [PL]

Resumen: The present invention relates to a pharmaceutical formulation comprising at least one active pharmaceutical ingredient (API) having low aqueous solubility or a pharmaceutically acceptable salt thereof in the form of particles of a size between 1 and 800 nm, wherein said particles are encapsulated within a large microparticle of a size between 1 and 100 µm formed by a matrix comprising at least an excipient. Therefore, the API is entrapped or encapsulated in the microparticles of excipients. This pharmaceutical formulation contains the pharmaceutical active ingredient having improved solubility and subsequently supra-bioavailability.

COMPOSITIONS FOR ORAL ADMINISTRATION OF PENTOSAN POLYSULFATE AND CHITOSAN IN FORM OF NANOPARTICLES WITH IMPROVED INTESTINAL ABSORPTION

Nº publicación: EP3586851A1  01/01/2020
Solicitantes: NEXTRARESEARCH S R L [IT]

Resumen: The present invention relates to pharmaceutical composition for the oral delivery of Pentosan Polysulfate sodium (PPS). In particular, the invention discloses compositions of PPS in form of nanoparticles with a suitable polymer aimed to improve the PPS absorption in the small intestine and reduce or eliminate the side effects in the colon.
COMPOSITIONS AND METHODS FOR STABILIZING PROTEIN-CONTAINING FORMULATIONS

Nº publicación EP3586826A1 01/01/2020
Solicitantes HOFFMANN LA ROCHE [CH]
Resumen The present invention relates to use of certain alkylglycoside compositions for the prevention of aggregation and oxidation of antibodies and other proteins in therapeutically useful formulations thereof.

FIGURE 1

一种掺杂Mn的聚多巴胺纳米载体及其制备方法

Nº publicación CN110623941A 31/12/2019
Solicitantes  
Resumen 本发明涉及一种掺杂Mn的聚多巴胺纳米载体及其制备方法，通过在PLGA NPs表面聚合多巴胺并掺杂Mn而得。本发明纳米载体通过EPR效应聚集在肿瘤部位，通过Mn引发的类芬顿反应产生羟基自由基，为实现肿瘤微环境响应、仿生材料聚多巴胺长效循环的纳米体系奠定基础。

硒/二氧化硅/金纳米复合粒子及其制备方法与应用

Nº publicación CN110623940A 31/12/2019
Solicitantes  
Resumen 本发明涉及一种硒/二氧化硅/金纳米复合粒子及其制备方法与应用，先通过反相微乳液法合成主要由二氧化硅球以及散布在其中的Se量子点组成的硒/二氧化硅纳米球，再在其表面通过金种子生长法包覆介孔金壳制得硒/金纳米复合粒子；采用该方法制得的纳米复合粒子主要由硒/多孔二氧化硅纳米球和散布在其中的Se量子点组成，硒/二氧化硅/金纳米复合粒子的平均粒径为90~100nm；最终制得的硒/二氧化硅/金纳米复合粒子用于光热治疗、药物缓释以及CT成像。本发明的方法，反应条件温和，制得的纳米复合粒子光热转换效率高，应用前景广阔。

一种MPC修饰的树状大分子包裹纳米金颗粒及其制备和应用

Nº publicación CN110623938A 31/12/2019
Solicitantes  
Resumen 本发明涉及一种MPC修饰的树状大分子包裹纳米金颗粒及其制备和应用，包括将MPC溶于溶剂中，加入溶于溶剂中的聚酰胺-胺树状大分子反应，再先后加入氯金酸溶液和硼氢化钠溶液，经透析、冷冻干燥，即得。本发明制备工艺周期短，操作便捷；且材料在使用剂量下毒性较低，生物相容性好，可压缩CpG基因，负载CpG基因的复合物可有效刺激免疫细胞进而杀伤肿瘤细胞，这为非病毒性载体在肿瘤免疫治疗上的应用提供了参考。
### Resumen

本发明提出一种负载斑蝥素的肿瘤细胞膜包封碲单质纳米颗粒的制备方法，属于纳米生物医药领域。所述的纳米颗粒以碲单质为核心、斑蝥素为模型药物、肿瘤细胞膜做为外层包衣。纳米颗粒中的肿瘤细胞膜将对机体有毒副作用的碲纳米材料和斑蝥素包封在内，提高纳米颗粒的生物相容并有效避免免疫细胞的清除，具有同源靶向的能力；在静脉注射后，纳米颗粒会通过EPR效应和同源靶向性大量聚集在肿瘤部位，碲单质在近红外刺激下迅速升温，导致外层细胞膜破裂，外泄的斑蝥素抑制肿瘤细胞的热休克反应，增强碲单质光热治疗效果，杀伤肿瘤细胞。本发明方法设计合理，制备工艺简单，具有广阔的应用前景，为相应给药系统的设计和发展打下基础。

### Resumen

本发明公开一种仿细胞膜聚合物的制备方法，包括以下步骤：(1)制备2-溴-2-甲基丙酸-4-甲酰基苯酯；(2)制备仿细胞膜聚合物；同时，本发明还公开所述仿细胞膜聚合物修饰壳聚糖-金自组装载药纳米粒子的制备方法及其应用，制备方法包括以下步骤：将壳聚糖溶于醋酸-氨水缓冲溶液中，然后向其中加入氯金酸和药物，混合搅拌；在匀速搅拌状态下，将其中滴加交联剂，搅拌；再加入所述仿细胞膜聚合物，搅拌；离心，将离心得到的沉淀用超纯水洗涤，然后超声分散，冷冻干燥，得到仿细胞膜聚合物修饰壳聚糖-金自组装载药纳米粒子。本发明提供的仿细胞膜聚合物，能修饰制备壳聚糖-金自组装载药纳米粒子，兼具诊断、治疗肿瘤的双功能。

### Resumen

本发明公开了一种具有氧化还原响应的T1/T2双模态纳米造影剂空心MCO的制备方法。其步骤为：通过控制不同的反应条件制备不同尺寸的空心纳米MCO粒子，通过氨基在空心纳米MCO粒子表面修饰上氨基化聚乙二醇，得到具有优异生物相容性和氧化还原响应的T1/T2双模态一体的空心纳米MCO粒子。本发明合成步骤简单，操作方便，可以改变加工条件来改变空心纳米MCO尺寸，此外空心纳米MCO本身具有较好的生物相容性，同时，空心纳米MCO具有优秀的氧化还原响应效果，从而使得空心纳米MCO能够在癌症环境分解释放包裹药物，定向杀死癌细胞。空心纳米MCO也在T1/T2双模态生物成像材料方面展现出广阔的应用前景。

### Resumen

本发明属于医药领域，具体涉及一种全反式维甲酸纳米药物制剂、其制备方法及应用。全反式维甲酸纳米药物制剂包括如式I所示的全反式维甲酸药物分子、包载所述全反式维甲酸药物分子的纳米载体以及附着于纳米载体表面的PD-L1单克隆抗体：本发明的全反式维甲酸纳米药物制剂一方面全反式维甲酸可抑制口腔异常增生或口腔鳞癌细胞增殖，促进细胞凋亡；另一方面，由于纳米粒具有高通透性和滞留效应，全反式维甲酸通过纳米载体的包载，可靶向到达肿瘤部位。相比全反式维甲酸原药，纳米药制剂起效更快，毒副作用更小，效果更好。

### Resumen

本发明公开了一种可在动物体皮肤富集的发光纳米粒子及其制备方法。所述纳米粒子为表面经白蛋白修饰的，由苯乙烯-马来酸共聚物、稀土离子和有机敏化稀土发光配体构成的复合物纳米粒子，其数均粒径为8~100纳米。本发明提供的纳米粒子在皮肤给药、药物的可控释放以及活体成像领域具有应用价值。
**茶多酚基多功能纳米复合物及其制备方法与应用**

Nº publicación **CN110623937A** 31/12/2019

Solicitantes  

Resumen 本发明公开了一种茶多酚基多功能纳米复合物及其制备方法与应用。在醛基化合物存在下，茶多酚与氨基化合物/巯基化合物快速发生组装反应，形成茶多酚基多功能纳米复合物。由于反应温度低、时间短，极大降低了对茶多酚、氨基化合物/巯基化合物等功能分子的活性影响，能够最大限度发挥茶多酚所具有的自由基清除能力，且引入的氨基化合物或巯基化合物可以使所得纳米复合物的荧光性、还原响应性及靶向性，从而使得到的纳米复合物表现出多种优异性能。

**一种柔性空心介孔有机氧化硅的载药应用**

Nº publicación **CN110623943A** 31/12/2019

Solicitantes  

Resumen 本发明的一种柔性空心介孔有机氧化硅的载药应用属于纳米材料载药技术领域，具有制备载体、配制药物的有机溶液、超声分散、恒温振摇24小时、离心再分散等步骤。本发明具有载药步骤简单、药物负载量大、包封率高等优点，在纳米生物医药领域有很大的应用价值。

**一种具有治疗肝细胞癌功效的药物**

Nº publicación **CN110613724A** 27/12/2019

Solicitantes  

Resumen 本发明提供一种具有治疗肝细胞癌功效的药物，所述药物为人参皂苷Rg2或以人参皂苷Rg2为主要活性物质的组合物。人参皂苷Rg2或以人参皂苷Rg2为主要活性物质的组合物可浓度依赖地抑制肝细胞癌生长并促进其凋亡，并且体外干预可抑制H22肝细胞系的活力，调控肝细胞癌PI3K/Akt信号转导。

**一种具有预防和/或治疗冠状动脉微血管病变功效的药物组合物**

Nº publicación **CN110613722A** 27/12/2019

Solicitantes  

Resumen 本发明提供一种具有预防和/或治疗冠状动脉微血管病变(CMVD)功效的药物组合物。该组合物包含单体化合物红景天苷和丹参乙酸镁，其可提高CMVD时冠状动脉前降支血流储备(CFR)，以及升高CMVD时左室血管密度，改善心肌微循环，用于预防和/或治疗CMVD。

**MEMBRANE LIPID COATED NANOPARTICLES AND METHOD OF USE**

Nº publicación **CN110621306A** 27/12/2019

Solicitantes  

Resumen Disclosed is a nanoparticle comprising an inner core comprising a virus; and an outer surface comprising a cellular membrane derived from a cell, and process of making thereof. The virus is an oncolytic virus and cellular membrane is derived from for example red blood cells.
ENCAPSULATED DIAGNOSTICS AND THERAPEUTICS IN NANOPARTICLES - CONJUGATED TO TROPIC CELLS AND METHODS FOR THEIR USE

Nº publicación US2019388474A1 26/12/2019
Solicitantes HOPE CITY [US]
Resumen A therapeutic or diagnostic delivery vehicle is provided. The delivery vehicle may include one or more particles, such as microparticles, nanoparticles and stimuli-responsive particles, conjugated to a tropic cell that targets at least one pathological entity or site. In addition, a pharmaceutical composition is provided. The pharmaceutical composition may include, among other things, a particle conjugated to a tropic cell such as those discussed above and at least one diagnostic or therapeutic agent, such as those described herein. In some aspects, the tropic cell may target at least one pathological entity or site. Further, methods for diagnosing, monitoring or treating a pathological condition in a subject are provided. Such methods may include administering a therapeutically effective amount of the pharmaceutical composition to a subject.

MAGNETIC NANOPARTICLE DELIVERY SYSTEM FOR PAIN THERAPY

Nº publicación US2019388541A1 26/12/2019
Solicitantes UNIV WYOMING [US]
Resumen Embodiments disclosed herein relate to magnetic nanoparticles having a non-narcotic analgesic, as well as methods of preparation and use thereof. A magnetically response pharmaceutical can include a core region having magnetic nanoparticles (MNPs) and a protein-based analgesic. Further, an exterior coating comprising a polymer can be formed around the core region. The magnetically responsive pharmaceutical can be administered to a recipient and directed to a target region using an external magnetic field.
DELIVERY OF THERAPEUTIC COMPOUNDS WITH IRON OXIDE NANOPARTICLES

Nº publicación US2019388542A1 26/12/2019
Solicitantes MEMORIAL SLOAN KETTERING CANCER CENTER [US]
Resumen The present invention relates to the field of drug delivery, in particular the delivery of unmodified cargo molecules (such as doxorubicin and Taxol®) using iron oxide nanoparticles as therapeutic delivery agents. Specifically described are methods to entrap cargo (i.e. known therapeutics (drugs) and other types of molecules) into the exterior coating of iron oxide nanoparticles, including iron oxide nanoparticles approved for use in humans. Additionally, methods describe the use of such drug-loaded nanoparticles as therapeutic delivery agents. Further, methods include quantifying and visualizing the amount of cargo molecule loading levels when preparing these therapeutic agents and then quantifying and visualizing the amount of delivery (i.e. unloading) of these cargo molecules from these nanoparticles using compact magnetic relaxometers, common NMR instruments and magnetic resonance imaging (MRI) instruments.

ENCAPSULATION OF METAL OXIDE NANOMATERIALS FOR CONTROLLED RELEASE AND TARGETED DELIVERY

Nº publicación US2019388559A1 26/12/2019
Solicitantes BOISE STATE UNIV [US]
Resumen The present invention is directed to micro and nanosized capsule compositions and methods of using and making the capsule compositions. The capsule compositions comprise an outer layer of lipids and/or polymers and inner contents comprising semiconductor nanoparticles. The nanoparticles are either metal oxides or quantum dots and will produce reactive oxygen species when irradiated with either electromagnetic radiation or ultrasound. The reactive oxygen species will degrade the outer layer of the capsule and cause the release of the contents, including the reactive oxygen species, into the local environment. The contents may optionally include cancer treating agent, water treating agents, antimicrobials, imaging and/or contracting agents. The outer layer may be further coated to protect it from environmental factors and/or be conjugated with a targeting molecule to increase delivery to a target.
SUBSTANCE AND METHOD FOR USING THE SUBSTANCE MENTIONED FOR MODULATING THE ACTIVITY OF AN AGENT IN AN ORGANISM

Nº publicación US2019388556A1  26/12/2019
Solicitantes NIKITIN PETR IVANOVICH [RU]
Resumen The invention relates to biomedicine and nanomedicine, and makes it possible to enhance the diagnostic or therapeutic efficiency of an agent administered to the organism. The invention can be used to enhance methods of diagnostics and therapy of various diseases due to a more effective (passive or active) delivery of the agent to cell-targets, improved pharmacokinetic parameters of the agent (circulation time), etc. The essence of the invention consists in a substance for enhancing the diagnostic or therapeutic efficiency of an agent administered to the organism, this substance comprising a component that, upon administration of the substance to the organism, enables elimination from the bloodstream by the reticuloendothelial system of at least the objects, which circulate in the bloodstream but do not represent artificially created nanoparticles or microparticles, or opsonins that non-specifically bind to said component, and said elimination of said objects causes blockade, at least partial, of the reticuloendothelial system. The technical result of application of the invention consists in creation of the method for blockade of the cells of reticuloendothelial system by means of administration of a small amount of a foreign substance or a safe biocompatible substance, and also the result consists in enhancement (boosting) of the blockade effect.

MAGNETIC CELLS FOR LOCALIZING DELIVERY AND TISSUE REPAIR

Nº publicación US2019388560A1  26/12/2019
Solicitantes EMMETROPE INC [US]
Resumen Normal or genetically modified cell(s) having magnetic nanoparticle(s) bound (affixed) to their surfaces and methods of delivery to target tissues, e.g. for treatment of disease and/or injury.
IONIZABLE CATIONIC LIPID FOR RNA DELIVERY

Nº publicación US2019388562A1 26/12/2019
Solicitantes ARCTURUS THERAPEUTICS INC [US]
Resumen consisting of a compound in which R1 is a branched chain alkyl consisting of 10 to 31 carbons; R2 is a linear alkyl, alkenyl, or alkynyl consisting of 2 to 20 carbons; L1 and L2 are the same or different, each a linear alkylene or alkenylene consisting of 2 to 20 carbons; X1 is S or O; R3 is a linear or branched alkylene consisting of 1 to 6 carbons; and R4 and R5 are the same or different, each a hydrogen or a linear or branched alkyl consisting of 1 to 6 carbons; or a pharmaceutically acceptable salt thereof.

SILICONE MATERIALS HAVING ANTIMICROBIAL EFFICIENCY

Nº publicación US2019388466A1  26/12/2019
Solicitantes KAUNO TECHNOLOGIJOS UNIV [LT]
Resumen Disclosed are antimicrobial silicone substances, which are obtained by using multifunctional cellulose/silver and silicon matrix nanocomposites. Using environmentally friendly, simple deposition techniques, Ag particles were deposited on cellulose. Silicone was filled with the obtained composites of cellulose and silver particles. The created modified cellulose/silver and silicone composite is characterized by good physical and chemical properties, as well as strong antimicrobial effect on both Gram-positive and Gram-negative bacteria.

TUMOR TREATMENT METHOD

Nº publicación US2019388702A1  26/12/2019
Solicitantes OLYMPUS CORP [JP]
Resumen A tumor treatment method for treating a tumor in a subject, the method includes: a step I of administering a therapeutically effective amount of one or a plurality of antibody-IR 700 molecules to the subject, in which the antibody specifically binds to a cell surface protein of the tumor; a step II of inserting an optical probe into the subject; a step III of applying light having a wavelength in a range from 660 nm to 740 nm from the optical probe, to supply energy of at least 1 J/cm² to at least a part of the tumor; a step IV of waiting for a time until an immune response is elicited in the tumor; a step V of inserting an energy device into the subject; and a step VI of resecting tissues of the subject including the tumor using the energy device.
Targeted Protease Compositions and Uses Related Thereto

Nº publicación: US2019388549A1 26/12/2019
Solicitantes: UNIV EMORY [US]
Resumen: This disclosure relates to targeted protease compositions and uses related thereto. In certain embodiments, the disclosure relates to nanoparticles wherein a targeting molecule is linked to the nanoparticle and wherein a catalytic domain of a protease is linked to the nanoparticle. In certain embodiments, the targeting molecule and the catalytic domain are within a single polypeptide sequence. In certain embodiments, the targeting molecule binds a molecule more highly expressed on cancer cells than non-cancerous cells, and the nanoparticles disclosed herein are used for the treatment of cancer by further attaching an anti-cancer agent to the nanoparticle or incorporating an anticancer agent within the nanoparticle.

Compositions and Methods for Oral Delivery of Therapeutic Cargo

Nº publicación: US2019388550A1 26/12/2019
Solicitantes: APPLIED MOLECULAR TRANSP INC [US]
Resumen: The present disclosure relates to pharmaceutical compositions comprising a non-naturally occurring fusion molecule and one or more pharmaceutically acceptable carriers, formulated for oral delivery to a subject, and designed to provide for improved, effective therapies for treatment of, e.g., inflammatory diseases, autoimmune diseases, cancer, metabolic disorders, and growth deficiency disorders. The present disclosure relates to a non-toxic mutant form of the Vibrio cholera Cholix gene (ntCholix), a variant of Cholix truncated at amino acid A386 (Cholix386) and the use of other various Cholix-derived polypeptide sequences to enhance intestinal delivery of biologically-active therapeutics. The systems and methods described herein provide for: the ability to deliver macromolecule doses without injections; the ability to deliver cargo such as siRNA or antisense molecules into intracellular compartments where their activity is required; and the delivery of nanoparticles and dendrimer-based carriers across biological membranes.
Two-Stage Microparticle-Based Therapeutic Delivery System and Method

Nº publicación US2019388356A1  26/12/2019
Solicitantes PRIVO TECH INC [US]

Resumen A system for delivery of a therapeutic agent to a site in mucosal tissue is provided. The system includes a porous, mucoadhesive polymeric matrix having a first and a second opposed surfaces. The matrix is formed by a composition including chitosan. The composition may also include any or all of a hydration promoter, a microparticle adhesion inhibitor, and a microparticle aggregation inhibitor. A plurality of microparticles having an average diameter between 500 nm and 2000 nm are embedded within the matrix. The microparticles contain a therapeutic agent and have a coating around the therapeutic agent. The first surface of the matrix is configured to be attached to the site in the mucosal tissue and the matrix is configured to provide controlled release of the microparticles through the first surface. The coating of the microparticles includes chitosan so as to provide controlled release of the agent from the microparticles.
FUSION PEPTIDE COMPRISING THROMBUS-TARGETING PEPTIDE, FERRITIN FRAGMENT AND THROMBOLYTIC PEPTIDE, AND USE THEREOF

Nº publicación US2019389936A1 26/12/2019
Solicitantes KYUNGPOOK NAT UNIV IND ACADEMIC COOP FOUND [KR]
KOREA INST SCI & TECH [KR]
Resumen The present invention relates to: a fusion peptide comprising a thrombus-targeting peptide, ferritin fragment and a thrombolytic peptide; and a use thereof and, more specifically, to: a fusion peptide in which a thrombus-targeting peptide, ferritin fragment and a thrombolytic peptide are sequentially linked; a composition for preventing or treating thrombotic disorders, containing the same as an active ingredient; a method for treating thrombotic disorders; and a therapeutic use. According to the present invention, CLT-sFt-μPn DCNC as a novel plasmin-based thrombolytic nanocage has: an effect of targeting a site at which thrombus is present; a low sensitivity to inhibitors present in the circulatory system; pharmacological activity strongly destroying both arterial and venous thrombi; and no side effects of bleeding, and thus can be very useful in developing an agent for preventing or treating thrombotic disorders.
Polynucleotides Encoding Lipoprotein Lipase for the Treatment of Hyperlipidemia

Nº publicación: US2019390181A1  26/12/2019
Solicitantes: MODERNATX INC [US]
Resumen: The invention relates to mRNA therapy for the treatment of hyperlipidemia. mRNAs for use in the invention, when administered in vivo, encode human lipoprotein lipase (LPL), isoforms thereof, functional fragments thereof, and fusion proteins comprising LPL. mRNAs of the invention are preferably encapsulated in lipid nanoparticles (LNPs) to effect efficient delivery to cells and/or tissues in subjects, when administered thereto, mRNA therapies of the invention increase and/or restore deficient levels of LPL expression and/or activity in subjects. mRNA therapies of the invention further decrease levels of triglycerides associated with deficient LPL activity in subjects.

NANO-VESICLES DERIVED FROM GENUS CUPRIAVIDUS BACTERIA AND USE THEREOF

Nº publicación: US2019390284A1  26/12/2019
Solicitantes: MD HEALTHCARE INC [KR]
Resumen: Provided are vesicles derived from bacteria belonging to the genus Cupriavidus, a composition and a use thereof, wherein the vesicles or composition may be usefully used for the purpose of developing a method of diagnosing a malignant diseases such as gastric cancer, colon cancer, pancreatic cancer, cholangiocarcinoma, breast cancer, ovarian cancer, bladder cancer, prostate cancer, head and neck cancer, lymphoma, and the like, heart diseases such as cardiomyopathy, atrial fibrillation, variant angina, and the like, chronic obstructive pulmonary disease, stroke, diabetes, kidney failure, dementia, Parkinson's disease, or depression.
METHODS AND COMPOSITIONS FOR VAULT NANOPARTICLE IMMOBILIZATION OF THERAPEUTIC MOLECULES AND FOR VAULT TARGETING

Nº publicación EP3582761A1  25/12/2019
Solicitantes AUKERA INC [US]
Resumen Described herein are compositions and methods for the immobilization of passenger molecules in a dense matrix of ADP-ribose within the vault particle. The present disclosure also describes a method for altering the physicomechanical properties (e.g. density, compressive strength, electrostatic properties, etc.) of packaged vaults for enhanced stability and/or downstream functionality. In addition, the present disclosure also describes compositions and methods for altering amino acid sequence of the vault protein in the vault particle by amino acid mutation, amino acid insertion and/or amino acid deletion to package passenger molecules and/or to target vault particles to specific receptors or ligands.

AYURVEDIC ENCAPSULATED GOLD NANOPARTICLES, FABRICATION METHODS AND CANCER THERAPEUTIC METHODS

Nº publicación EP3582757A1  25/12/2019
Solicitantes UNIV MISSOURI [US]
Resumen Ayurvedic encapsulated gold nanoparticles, methods of fabrication and methods of treatment are provided. A method of fabrication includes mixing dried gooseberry product or mango peel product or phytochemical existent therein, into a liquid medium to form a reducing agent solution. Gold salts are mixed into the reducing agent solution. Reaction of the gold salts proceeds, in the absence of any other reducing agent, to form a nanoparticle solution of stabilized, biocompatible Ayurvedic encapsulated gold nanoparticles. An Ayurvedic medicine consists of a non-radioactive gold nanoparticle encapsulated with phytochemical existent in mango peel or gooseberry in a capsule with curcumin extract and gum Arabic.
EXOSOME-BASED NANOPARTICLE COMPOSITE AND METHOD FOR PREPARING SAME

Solicitantes: KOREA UNIV RESEARCH AND BUSINESS FOUNDATION SEJONG CAMPUS [KR]

Resumen: The present invention relates to an exosome-based nanoparticle composite and a method for preparing the same. More specifically, the present invention relates to an exosome-based nanoparticle composite that uses exosomes isolated from cells and a biocompatible polymer to achieve improved in vivo stability and redispersibility, and a method for preparing the nanoparticle composite. The nanoparticle composite of the present invention exhibits a stable and continuous drug release pattern irrespective of the solubility of the drug and has excellent tumor targeting due to its good in vivo stability and improved redispersibility in aqueous solution.

NANODISPERSIONS OF BIRCH BARK EXTRACT, ELECTROSPUN FIBERS CONTAINING SUCH NANODISPERSIONS AND THEIR USE FOR THE TREATMENT OF WOUNDS

Solicitantes: NEUBOURG SKIN CARE GMBH [DE]

Resumen: The present invention relates to a nanodispersion of a birch bark extract characterized in that the nanodispersion is stabilized with at least one phospholipid, whereby such nanodispersion is preferably mixed with a polymer and electrospun to fibers which are useful for treating wounds.

AUTOASSOCIATIVE ACRYLIC FUNCTIONAL COPOLYMERS AND TERPOLYMERS AND THEIR USE AS VEHICLES OF BIOACTIVE COMPOUNDS


Resumen: The present invention relates to a family of amphiphilic copolymers and terpolymers forming nanometric-sized bioactive polymeric multi-micellar nanoparticles, consisting of synthetic polymer systems derived from acrylic functional monomers containing α-tocopherol (vitamin E) as a bioactive and hydrophobic component, and hydrophilic monomers with a highly variable composition, preferably consisting of N-vinylpyrrolidone, N-vinyl caprolactam, N-vinyl imidazole, as well as mixtures of vitamin E methacrylate and N-vinyl pyrrolidone copolymers with the corresponding terpolymers. These compounds can be used as controlled release systems for the administration of bioactive compounds.
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<td><strong>NANOPARTICLES FOR CONTROLLED RELEASE OF SORAFENIB AND SORAFENIB DERIVATIVES</strong></td>
<td>EP3582762A1</td>
<td>25/12/2019</td>
<td>DISTRETTO TECNOLOGICO SICILIA MICRO E NANO SISTEMI S C A R L [IT]</td>
<td>The present invention relates to loaded nanoparticles of Sorafenib (Sorafenib PBB) or Sorafenib derivatives (Sorafenib PBB derivatives), wherein said nanoparticles are polymeric PBB nanoparticles, (PHEA-BiB-pButMA, α, β-poly (N-2-hydroxyethyl) -co- (N-2-ethylene- [2- (poly (butylmethacrylate) -isobutyrate ]) -D, L- aspartamide, and to a method for obtaining them. The present invention further relates to a controlled release formulation of Sorafenib or Sorafenib derivatives which comprises Sorafenib PBB or Sorafenib PBB derivatives, and to the use of said formulation in the treatment of tumor diseases of the kidney, liver, thyroid, colon, breast, pancreas, lungs and/or recurrent glioblastoma.</td>
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<td><strong>NANOPARTICLES FOR CONTROLLED RELEASE OF SORAFENIB AND SORAFENIB DERIVATIVES</strong></td>
<td>CN110585237A</td>
<td>20/12/2019</td>
<td>意大利特雷托技术研究院微纳米系统有限公司 [IT]</td>
<td>本发明提供了一种纳米诊疗剂及其制备方法、应用，其中，所述纳米诊疗剂包括蛋白质以及与所述蛋白质相互掺杂的相硫化锰纳米颗粒。本发明的纳米诊疗剂易降解，具有pH响应的特点，能够在肿瘤部位释放更多硫化氢气体，起到硫化氢气体治疗的作用，而硫化锰释放出的锰离子在肿瘤环境下具有类芬顿反应的特点，能够分解肿瘤部位的双氧水产生强氧化性的羟基自由基，用于肿瘤的化学动力学治疗，克服单一的气体治疗或肿瘤的化学动力学治疗有的局限性，实现更高效的肿瘤治疗效果。</td>
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<td><strong>替莫唑胺核磁共振可视化可注射水凝胶、制备方法及用途</strong></td>
<td>CN110585121A</td>
<td>20/12/2019</td>
<td>替莫唑胺核磁共振可视化可注射水凝胶、制备方法及用途</td>
<td>本发明涉及一种替莫唑胺核磁共振可视化可注射水凝胶、制备方法及其用途。本发明将替莫唑胺固体脂质纳米粒加载到核磁共振可视化水凝胶基质中，制备成负载替莫唑胺脂质纳米粒的水凝胶。该体系结合了替莫唑胺固体脂质纳米粒、可注射水凝胶、修饰的羟丙基壳聚糖的优点，使其缓释性能显著高于替莫唑胺固体脂质纳米粒和替莫唑胺原药；本发明的水凝胶可用于脑胶质瘤术后局部治疗，增加了载药的纳米粒子在病灶部位的滞留时间，提高了局部药物浓度，相较于目前采取的口服给药剂型，本发明提供的含有替莫唑胺组合物的原位凝胶能在术后立即实施给药，在手术腔内持续缓释，并实现对病灶部位实时监控，提高了药物的生物利用度，有助于延长术后生存期。</td>
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NANOPARTICLES FOR DELIVERY OF CHEMOPREVENTIVE AGENTS

Nº publicación CN110603057A 20/12/2019
Solicitantes \u4fca\u4eac\u4fca\u5dde\u65b0\u91d1\u4f1a, \u5bc6\u6b47\u6839\u5927\u4f1a
Resumen Disclosed herein are nanoparticle compositions and methods of use such as for chemoprevention of cancer, for example oral squamous cell carcinoma (OSCC). The nanoparticle composition comprises a Janus particle comprising at least two chemopreventive agents, wherein at least one of the chemopreventive agents is selected from freeze-dried black raspberries (BRB), a synthetic vitamin A analogue, N-acetylcysteine (NAC), and an anti-interleukin 6 agent. Methods for improving oral health comprising administering to a subject the nanoparticle compositions are also disclosed.

Resumen

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Acute and chronic mitochondrial electron transport chain dysfunction treatments and graphenic materials for use thereof

Nº publicación AU2018256963A1 19/12/2019
Solicitantes UNIV RICE WILLIAM M
UNIV TEXAS
BAYLOR COLLEGE MEDICINE
HOUSTON METHODIST RES INSTITUTE
THE US GOV AS REPRESENTED BY THE DEPARTMENT OF VETERANS AFFAIRS
Resumen Modified hydrophilic carbon clusters (HCCs), poly(ethylene glycol)-hydrophilic carbon clusters (PEG-HCCs) and similarly structured materials like graphene quantum dots (GQDs), PEGylated GQDs, small molecule antioxidants, and PEGylated small molecule antioxidants. These materials have been modified with an iron chelating moiety, deferoxamine, or a similar chelating moiety. By exploiting common binding sites, the carbon nanostructure facilitates intracellular transport including in mitochondria, reduces oxidative breakdown of the chelator moiety prior to treatment, and reduces both the cause and consequences of metal induced oxidative stress within the body thus providing a novel form of therapy for a range of oxidative and metal-related toxicities. Graphene materials can be used for the treatment of acute and chronic mitochondrial electron transport chain dysfunction.

Genetically attenuated nucleic acid vaccine

Nº publicación AU2018275790A1 19/12/2019
Solicitantes SHACKELTON LAURA
KERNER MATTHEW
Resumen The disclosed compositions and methods provide an approach for the rational development of a nucleic acid vaccine. Methods are disclosed to deliver a viral genome, and/or a representative or derivative of such, that is attenuated but can, when co-delivered with unreplicable compensatory translational tools to a host cell, initially generate phenotypically wild-type, genetically attenuated viruses which infect subsequent cells and elicit a relevant and robust immune response. However, progeny of this initial generation, lacking the compensatory tools delivered to the initial host cells, are both phenotypically and genetically attenuated, thereby compromised in their ability to induce disease.
CORE-SHELL ZEIN NANOPARTICLES FOR THE ENCAPSULATION OF COMPOUNDS, PROCESS FOR THEIR PREPARATION AND USES THEREOF

Nº publicación WO2019238684A1 19/12/2019
Solicitantes UNIV NAVARRA [ES]
Resumen The present invention relates to a core-shell nanoparticle, wherein the core is solid and comprises a zein matrix and a basic amino acid; and the shell comprises a conjugate obtained by reaction of a poly (methyl vinyl ether-co-maleic anhydride) copolymer with a compound having a reactive primary amine group. It also relates to a process for their preparation as well as their use in immunotherapy and in the treatment of disease, such as diabetes.

KERATIN NANOFIBERS AS DELIVERY VEHICLES OF ACTIVE INGREDIENTS, METHODS FOR THE PRODUCTION AND USES THEREOF

Nº publicación WO2019238610A1 19/12/2019
Solicitantes KERLINE S R L [IT]
Resumen Nanofibers comprising a water-soluble keratin polypeptide, at least one active ingredient and optionally at least one supporting polymer, wherein the nanofiber is obtained by electrospinning an aqueous solution comprising the keratin polypeptide, the active ingredient and optionally a supporting polymer, such as for example polycaprolactone, polylactic acid, polyglycolic acid and poly(lactic-co-glycolic acid); a method for preparing such nanofibers, and pharmaceutical and cosmetic formulations containing them are also described.
The present invention relates to a family of amphiphilic copolymers and terpolymers forming nanometric-sized bioactive polymeric multi-micellar nanoparticles, consisting of synthetic polymer systems derived from acrylic functional monomers containing α-tocopherol (vitamin E) as a bioactive and hydrophobic component, and hydrophilic monomers with a highly variable composition, preferably consisting of N-vinylpyrrolidone, N-vinyl caprolactam, N-vinyl imidazole, as well as mixtures of vitamin E methacrylate and N-vinyl pyrrolidone copolymers with the corresponding terpolymers. These compounds can be used as controlled release systems for the administration of bioactive compounds.
REPEATED ADMINISTRATION OF NON-IMMUNOSUPPRESSIVE ANTIGEN SPECIFIC IMMUNOTHERAPEUTICS

Nº publicación **AU2019272021A1** 19/12/2019
Solicitantes **SELECTA BIOSCIENCES INC**
Resumen This invention relates to repeated administration of antigen-specific immunotherapeutics using protocols, or elements thereof, that do not induce immunosuppression. In some embodiments, the protocol has been previously shown not induce immunosuppression in a subject. See Fig. WO 2014/197616 PCT/US2014/040938 pOVA i.m. pOVA i. +fMTX i.p. KLH+CpG S.C. 0 7 14 21 28 5000 I I I I I 50000-- ns 4000-40000 _Md19 Ln El d34 UU E d40 S3000- 09 30000 ,L2000 *i 20000 1 000-- 10000 Fig. 2 C T TTI C 'TrmPT Tmr C T T7 T7 U'/T' T'T' T7

A pharmaceutical composition comprising stable, amorphous hybrid nanoparticles of at least one protein kinase inhibitor and at least one polymeric stabilizing and matrix-forming component

Nº publicación **AU2019275513A1** 19/12/2019
Solicitantes **XSPRAY MICROPARTICLES AB**
Resumen Abstract The present invention relates to the field of methods for providing pharmaceutical compositions comprising poorly water-soluble drugs. In particular the present invention relates to compositions comprising stable, amorphous hybrid nanoparticles, comprising at least one protein kinase inhibitor and at least one polymeric stabilizing and matrix-forming component, useful in pharmaceutical compositions and in therapy.
### Amorphous nanostructured pharmaceutical materials

**Nº publicación**: AU2018283777A1 19/12/2019  
**Solicitantes**: NOVARTIS AG  
**Resumen**: Embodiments of the invention relate to a process for enhancing the bioavailability of poorly soluble active ingredients, and to formulations of powders made by such process. Embodiments of the invention comprise a spinodal decomposition method by which low, sparingly or poorly-soluble materials are converted to amorphous materials with, improved or enhanced solubility suitable for therapeutic use. The powder formulations are useful for the treatment of diseases and conditions, especially respiratory diseases and conditions.

![FIG. 1](image)

### SUPERPARAMAGNETIC NANOPARTICLES FOR HYPERTHERMIA THERAPY

**Nº publicación**: WO2019240329A1 19/12/2019  
**Solicitantes**: SEOUL NAT UNIV R&DB FOUNDATION [KR]  
**Resumen**: The present invention relates to a composition for hyperthermia therapy, comprising MnxZn1-xFe2O4 (0≤X≤1) superparamagnetic nanoparticles as an active ingredient. Superparamagnetic nanoparticles according to the present invention exhibit high magnetically-induced heat generation ability and biocompatibility, thereby enabling tumor growth to be effectively inhibited.
NANOPARTICLES FOR CROSSING THE BLOOD BRAIN BARRIER AND METHODS OF TREATMENT USING THE SAME

Nº publicación WO2019241327A1 19/12/2019
Solicitantes CALIFORNIA INST OF TECHN [US]
Resumen The present application discloses nanoparticles carrying therapeutic agents, including chemotherapeutic agents, and targeting ligands suitable for delivering these therapeutic agents through the blood brain barrier and methods of using these patients on those patients in need of such treatment.

THERAPEUTIC AGENT FOR ALZHEIMER’S DISEASE

Nº publicación WO2019240145A1 19/12/2019
Solicitantes MITSUYAMA FUYUKI [JP]
Resumen [Problem] To provide: an actually effective therapeutic method which is for dementia of Alzheimer's disease, and which is a causal treatment rather than a symptomatic treatment; and a therapeutic substance for dementia of Alzheimer's disease. [Solution] This substance alleviates symptoms such as dementia of Alzheimer's disease by overexpressing a microtubule-associated protein 1B gene in intracerebral neurons. In addition, as methods to solve the problem above, there are mainly two methods: a method for intracerebral administration of a gene therapy vector bound to a microtubule-associated protein 1B gene; and a method for binding a microtubule-associated protein 1B gene to a blood-brain barrier (BBB) permeable nanomachine and administering intravascularly.
Nanoparticulate Meloxicam Formulations

Nº publicación US2019381062A1 19/12/2019
Solicitantes RECRO PHARMA INC [US]
Resumen The present invention is directed to nanoparticulate compositions comprising meloxicam particles having an effective average particle size of less than about 2000 nm.

Hydrogel Composition and Method for Producing Same

Nº publicación US2019382538A1 19/12/2019
Solicitantes SHIMADZU CORP [JP]
Resumen The hydrogel composition of the present invention includes an amphiphilic block polymer having a hydrophilic block chain having 20 or more sarcosine units and a hydrophobic block chain having 10 or more lactic acid units, and water as a dispersion medium. In the hydrogel composition, the amphiphilic block polymer is preferably present as hydrogel nano-particles having a particle diameter of 100 nm or less. The hydrogel can be prepared by mixing an amphiphilic block polymer with an aqueous liquid. The hydrogel is preferably substantially free of an organic solvent.
CATIONIC POLYMER COATED MESOPOROUS SILICA NANOPARTICLES AND USES THEREOF

Resumen
A submicron structure having a silica body defining a plurality of pores is described. The submicron body may be spherical or non-spherical, and may include a cationic polymer or co-polymer on the surface of said silica body. The submicron structure may further include an oligonucleotide and be used to deliver the oligonucleotide to a cell. The submicron structure may further include a therapeutic agent and be used to deliver the therapeutic agent to a cell. An oligonucleotide and therapeutic agent may be used together. For example, when the oligonucleotide is an siRNA, the composition may be used to decrease cellular resistance to the therapeutic agent by decreasing translation of a resistance gene.

ZIKA AS A CELL PENETRATING PEPTIDE FOR DELIVERY TO THE BRAIN

Resumen
In various embodiments constructs are provided for the delivery of an effector molecule into a cell. In certain embodiments the construct comprises a cell penetrating peptide (CPP) attached to an effector that is to be delivered into a cell, where the said cell penetrating peptide comprises a Zika cell penetrating peptide (Zika CPP); and the effector is selected from the group consisting of a protein, a nucleic acid, an organic compound, a nanoparticle, a viral particle, and the like.

Nanoparticles For Crossing The Blood Brain Barrier And Methods Of Treatment Using The Same

Resumen
The present application discloses nanoparticles carrying therapeutic agents, including chemotherapeutic agents, and targeting ligands suitable for delivering these therapeutic agents through the blood brain barrier and methods of using these patients on those patients in need of such treatment.
CERIA NANOCOMPOSITE FOR BIOMEDICAL TREATMENT AND PHARMACEUTICAL COMPOSITION CONTAINING SAME

Nº publicación: US2019381187A1  19/12/2019
Solicitantes: CENYX BIOTECH INC [KR]
Resumen: Disclosed are a ceria nanocomposite for biomedical treatment, including a ceria nanoparticle; and a pharmaceutical composition. The disclosed ceria nanocomposite for biomedical treatment includes a ceria nanoparticle and a surface modification layer arranged on the surface of the ceria nanoparticle, wherein the surface modification layer includes a polyethylene glycol residue, and in the ceria nanoparticle, the content of Ce³⁺ is greater than the content of Ce⁴⁺.

HYBRID CARRIERS FOR NUCLEIC ACID CARGO

Nº publicación: US2019381180A1  19/12/2019
Solicitantes: CUREVAC AG [DE]
Resumen: The invention relates to carrier compositions for nucleic acid delivery which comprise a cationic peptide or polymer in combination with a cationic lipid. The peptide or polymer comprises a disulfide linkage or an —SH moiety capable of forming a disulfide linkage. In a further aspect, the invention relates to nanoparticles comprising a complex of a bioactive cargo material with the peptide or polymer and the lipid. The invention further relates to the preparation and the uses of the nanoparticles.
AEROSOLIZED FLUOROQUINOLONES AND USES THEREOF

Nº publicación US2019381057A1 19/12/2019
Solicitantes HORIZON ORPHAN LLC [US]
Resumen Disclosed herein are formulations of fluoroquinolones suitable for aerosolization and use of such formulations for aerosol administration of fluoroquinolone antimicrobials for the treatment of pulmonary bacterial infections. In particular, inhaled levofloxacin specifically formulated and delivered for bacterial infections of the lungs is described. Methods include inhalation protocols and manufacturing procedures for production and use of the compositions described.

HYPERBRANCHED POLYGLYCEROL-COATED PARTICLES AND METHODS OF MAKING AND USING THEREOF

Nº publicación US2019380921A1 19/12/2019
Solicitantes UNIV YALE [US]
Resumen Core-shell particles and methods of making and using thereof are described herein. The core is formed of or contains one or more hydrophobic materials or more hydrophobic materials. The shell is formed of or contains hyperbranched polyglycerol (HPG). The HPG coating can be modified to adjust the properties of the particles. Unmodified HPG coatings impart stealth properties to the particles which resist non-specific protein absorption and increase circulation in the blood. The hydroxyl groups on the HPG coating can be chemically modified to form functional groups that react with functional groups and adhere the particles to tissue, cells, or extracellular materials, such as proteins.
**PROTECTING TISSUE AND MITIGATING INJURY FROM RADIATION-INDUCED IONIZING EVENTS**

Nº publicación: **US2019380972A1**  19/12/2019

Solicitantes: **HUMANETICS CORP [US]**

Resumen: Materials and methods for reducing, preventing, or mitigating the effects of exposure to ionizing radiation are provided herein.

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**METHODS AND COMPOSITIONS FOR MAKING AND USING NANTHERAPEUTIC DRUG DELIVERY VEHICLES**

Nº publicación: **US2019380964A1**  19/12/2019

Solicitantes: **GEORGE MASON UNIV [US]**

Resumen: Disclosed herein are method and compositions for making and using liposomes having small diameters and low polydispersity.

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**NANOCOMPLEXES OF POLYANION-MODIFIED PROTEINS**

Nº publicación: **US2019381189A1**  19/12/2019

Solicitantes: **TUFTS COLLEGE [US]**

Resumen: A nanocomplex, 50 to 1000 nm in size, containing a lipid-like nanoparticle formed of a cationic lipid-based compound and a modified protein formed of a protein and an anionic polymer that includes a plurality of polar groups, the lipid-like nanoparticle and the modified protein being non-covalently bonded to each other. Also disclosed are a method of preparing the above-described nanocomplex and use thereof for treating a medical condition. Further disclosed is a pharmaceutical composition containing a nanocomplex.

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**CORE-SHELL ZEIN NANOPARTICLES FOR THE ENCAPSULATION OF COMPOUNDS, PROCESS FOR THEIR PREPARATION AND USES THEREOF**

Nº publicación: **EP3581176A1**  18/12/2019

Solicitantes: **UNIV NAVARRA [ES]**

Resumen: The present invention relates to a core-shell nanoparticle, wherein the core is solid and comprises a zein matrix and a basic amino acid; and the shell comprises a conjugate obtained by reaction of a poly (methyl vinyl ether-maleic anhydride) copolymer with a compound having a reactive primary amine group. It also relates to a process for their preparation as well as their use in immunotherapy and in the treatment of disease, such as diabetes.
SOL-GEL/HYDROGEL THERAPEUTIC DELIVERY SYSTEM AND METHODS THEREOF

Nº publicación EP3579861A1  18/12/2019
Solicitantes ALBERT EINSTEIN COLLEGE MEDICINE INC [US]
Resumen Disclosed herein is a delivery platform for the preparation of versatile sol-gel/hydrogel based nano and micro particles that can be loaded with small molecules. The delivery platform is suitable for topical, transdermal, IV, IP and aerosol drug delivery. Also disclosed herein are methods of treatment using the aforementioned particles.

NANOEMULSION COMPRISING IMIDAZOQUINOLINE-BASED MATERIAL AND USE THEREOF

Nº publicación EP3581170A1  18/12/2019
Solicitantes DANDI BIOSCIENCE INC [KR]
Resumen The present invention relates to a nanoemulsion comprising an oil layer comprising imidazoquinoline-based toll-like receptor 7 or 8 agonist and oil, and a use thereof as an adjuvant and vaccine. According to the present invention, it is possible to provide a vaccine adjuvant in the form of a nanoemulsion that can dissolve an insoluble imidazoquinoline-based material in oil using a dispersion helper and disperse the oil solution easily and reproducibly in a water-soluble manner.
**VASCULAR ULCER TREATMENT**

**Nº publicación** EP3579821A1  18/12/2019  
**Solicitantes** BOSTON SCIENT SCIMED INC [US]  
**Resumen** A patch for treating vascular ulcers caused by excessive enzymatic activity may include a substrate configured to span a vascular ulcer as well as a linking material that is disposed relative to the substrate and has an affinity for an enzyme involved in causing the vascular ulcer. A magnetic material may be coupled to the linking material. In some cases, the enzymes involved in causing the vascular ulcer may become coupled to the linking material and thus become coupled to the magnetic material so that the enzymes can be removed by applying a magnetic field in the proximity of the vascular ulcer. The enzymes may include matrix metalloproteinases.

**GEMCITABINE DERIVATIVES FOR CANCER THERAPY**

**Nº publicación** CN110573166A  13/12/2019  
**Solicitantes** 美国波士顿科学公司，美国波士顿科学公司  
**Resumen** The present invention provides pharmaceutical compositions comprising the chemotherapy drug gemcitabine (GEM) and certain derivatives, a taurocholic acid (TCA) formulation, and a Histidine-Lysine Polymer (HKP) conjugate, for enhancement of RNAi cancer therapeutics.
**Resumen**

本发明涉及一种纳米药物及其制备方法和应用，所述纳米药物包括两亲性花菁染料和治疗革兰氏阳性菌的药物；所述制备方法包括：将所述两亲性花菁染料和治疗革兰氏阳性菌的药物加入至缓冲溶液中，得到所述纳米药物。本发明提供的纳米药物中两亲性花菁染料可以形成稳定的囊泡，包载治疗革兰氏阳性菌的药物，靶向富集革兰氏阳性菌感染部位后聚集解聚导致荧光信号增强，可以有效标记细菌感染部位，并对其进行有效治疗，这种结合诊疗一体化功能和基于纳米技术开发的新材料将在临床上有广阔的应用前景。

**Resumen**

本发明涉及医用材料领域，公开了一种叶酸修饰纳米MOF-AI具有靶向功能的响应性药物载体的制备方法，本发明以对还原环境敏感的DTBA为有机配体，其二硫键对癌细胞内过表达的谷胱甘肽具有还原响应性，以Al离子为金属离子。同时加入1-(3-二甲氨基丙基)-3-乙基碳二亚胺盐酸盐和氮-羟基琥珀酰亚胺对DTBA进行活化，叶酸的靶向性很好，将DOX负载在MOF-AI上得到DOX@FA-MOF-AI。通过酰氨反应得到目标产物。该方法制备的纳米微粒不会在后期的实验过程中对细胞产生显著影响，不影响实验结果的科学性，实验流程简单、操作方便、不需要苛刻的反应条件和特殊的反应装置。

**Resumen**

本发明涉及巨型艾美耳球虫(E.maxima)重组蛋白亚单位疫苗EmMIC3和纳米亚单位疫苗PLGA-EmMIC3，属于生物兽药技术领域。该纳米亚单位疫苗为用PLGA纳米材料包裹重组蛋白亚单位疫苗EmMIC3制成。经动物免疫保护性试验证实，上述重组蛋白亚单位疫苗EmMIC3和纳米亚单位疫苗PLGA-EmMIC3均能够有效抵抗巨型艾美耳球虫感染。本发明用纳米材料PLGA包裹重组蛋白EmMIC3形成了一个全新的疫苗形式，不同于单独EmMIC3重组蛋白，二者组分不同。并且EmMIC3重组蛋白与纳米材料PLGA包被以后，其免疫保护效果得到明显的提升，保护效果从一般提升到优秀。

**Resumen**

本发明公开了一种堆型艾美耳球虫纳米亚单位疫苗及其制备方法和应用。一种堆型艾美耳球虫纳米亚单位疫苗，所述的堆型艾美耳球虫纳米亚单位疫苗是由PLGA包裹重组蛋白EaMIC3形成的纳米粒子，所述的重组蛋白EaMIC3为堆型艾美耳球虫微线蛋白3，其氨基酸序列如SEQ ID NO.1所示。本发明将EaMIC3重组蛋白包被于纳米材料PLGA形成了一个全新的疫苗形式，得到免疫保护效果较高的堆型艾美耳球虫PLGA纳米亚单位疫苗。

**Resumen**

本发明所要解决的技术问题是提供一种核磁共振成像引导的光热和光动诊疗一体化试剂及其制备方法

通过在纳米金颗粒表面生长二维片层硫化钼，由于纳米金颗粒与硫化钼片层的复合，能使该纳米粒子能够促进双氧水的分解，产生具备细胞毒性的活性氧(ROS)，达到PDT与PTT联合的治疗效果。然后，在硫化钼表面修饰Gd，赋予该纳米粒子的核磁共振成像(MRI)造影功能，达到诊疗一体化的目的。最后使用壳聚糖包覆纳米粒子，使其不仅具备良好分散性，而且拥有优良的生物相容性。
COMPOSITION, FOR PREVENTING OR TREATING DRY EYE SYNDROME, CONTAINING POLYETHYLENE GLYCOL AND FLAVONOID NANOCOMPOSITE AS ACTIVE INGREDIENT

Nº publicación US2019374531A1  12/12/2019
Solicitantes UNIV INJE IND ACAD COOP FOUND [KR]
Resumen A composition for preventing or treating dry eye syndrome includes nanocomposite of a polyethylene glycol and a flavonoid as an active ingredient, and in the present invention, a catechin/PEG nanocomposite having increased catechin bioavailability is prepared by using catechins which are an antioxidant and polyethylene glycol which is a hydrophilic polymer used in a drug delivery system, and an increase in tear generation, stabilization of corneal epithelial cells, an increase in conjunctival goblet cells and enhanced anti-inflammatory effects accordance to a PEG dosage by the catechin/PEG nanocomposite are confirmed in a mouse model with dry eye syndrome.

APTAMER BIOCONJUGATE DRUG DELIVERY DEVICE

Nº publicación US2019374469A1  12/12/2019
Solicitantes GREENMARK BIOMEDICAL INC [US]
Resumen A delivery device for an active agent comprises nanoparticles based on a biopolymer such as starch. The delivery device may also be in the form of an aptamer-biopolymer-active agent conjugate wherein the aptamer targets the device for the treatment of specific disorders. The nanoparticles may be made by applying a high shear force in the presence of a crosslinker. The particles may be predominantly in the range of 50-150 nm and form a colloidal dispersion of crosslinked hydrogel particles in water. The biopolymer may be functionalized. The aptamer may be conjugated directly to the cross-linked biopolymers. The active agent may be a drug useful for the treatment of cancer. The delivery device survives for a period of time in the body sufficient to allow for the sustained release of a drug and for the transportation and uptake of the conjugate into targeted cells. However, the biopolymer is biocompatible and resorbable.
**Multifuncional Degradable Nanoparticles with Control over Size and Functionalities**

**Nº publicación** US2019375891A1  12/12/2019  
**Solicitantes** UNIV VANDERBILT [US]  
**Resumen** In one aspect, the invention relates to polymers, crosslinked polymers, functionalized polymers, nanoparticles, and functionalized nanoparticles and methods of making and using same. In one aspect, the invention relates to degradable polymers and degradable nanoparticles. In one aspect, the invention relates to methods of preparing degradable nanoparticles and, more specifically, methods of controlling particle size during the preparation of degradable nanoparticles. In one aspect, the degradable nanoparticles are useful for complexing, delivering, and releasing payloads, including pharmaceutically active payloads. This abstract is intended as a scanning tool for purposes of searching in the particular art and is not intended to be limiting of the present invention.

**HELICAL POLYCARBODIIMIDE POLYMERS AND ASSOCIATED IMAGING, DIAGNOSTIC, AND THERAPEUTIC METHODS**

**Nº publicación** US2019374661A1  12/12/2019  
**Solicitantes** MEMORIAL SLOAN KETTERING CANCER CENTER [US]  
**Resumen** Described herein are suspensions of helical polycarbodiimide polymers that ‘cloak’ nanotubes, thereby effecting control over nanotube emission, providing a new mechanism of environmental responsivity, and enabling precise control over sub-cellular localization. The helical polycarbodiimide polymers described herein are water soluble, easily modifiable, and have unique architectures that facilitate their application in radiopharmaceutical delivery and imaging methods, in therapeutics and therapeutic delivery methods, and their use as sensors—both in conjunction with carbon nanotubes, and without nanotubes.
Ultrastable Gold Nanoparticles For Drug Delivery Applications And Synthesis Thereof

Nº publicación: US2019374478A1  12/12/2019
Solicitantes: UNIV LAVAL [CA]
Resumen: Herein presented are gold nanoparticles (AuNPs) used for the transport of medications to mucous membranes. The AuNPs are ultra-stable in that they withstand freeze-drying and heating treatments without noticeable change in their structure. In addition, they interact with mucous membranes, and therefore allow transport of certain drugs to these mucous membranes, allowing higher exposure time of the drugs, hence decreased dosing schedule of administration.

Liposomal Formulations for Allosteric AKT Inhibitors

Nº publicación: US2019374468A1  12/12/2019
Solicitantes: MERCK SHARP & DOHME [US]
Resumen: Disclosed herein is a lipid nanoparticle (LNP) composition comprising (a) an Akt inhibitor; (b) DSPC; (c) cholesterol; and (d) PEG-DMG. Also disclosed herein is a method for preparing the lipid composition using a scalable tangential flow micro-mixing technology.
POLYMERIZABLE QUANTUM DOT NANOPARTICLES AND THEIR USE AS THERAPEUTIC, ABLATION AND TATTOOING AGENTS

Nº publicación  JP2019535805A  12/12/2019
Solicitantes  ナノコ テクノロジー リミテッ
Resumen  The present disclosure relates to quantum dot nanoparticles conjugated to ligands, and in particular quantum dot nanoparticles wherein each nanoparticle is conjugated to a polymerizable ligand. The present disclosure also relates to methods of making such conjugated quantum dot nanoparticles, and the use of such conjugated quantum dot nanoparticles as therapeutic agents, ablation agents and tattooing agents.

COPOLYMER CONTAINING CYCLIC NITROXIDE RADICAL AND TRIALKOXYSILYL IN SIDE CHAIN, AND USE THEREOF

Nº publicación  JPWO2018135592A1  12/12/2019
Solicitantes  国立大学法人 筑波大学
Resumen  [Problem] To provide a copolymer that contains hydrophilic and hydrophobic blocks and that can form nanoparticles which can efficiently package a physiologically active substance and are stable under acidic conditions. [Solution] Provided is a copolymer in which the hydrophilic part comprises polyethylene glycol (PEG) and the hydrophobic part comprises polystyrene, wherein trialkoxysilane and a cyclic nitroxide radical having a radical scavenging capability are each covalently bonded in a side chain position in the hydrophobic part.
Lipid nanoparticle for inhibiting antisense oligonucleotide of bcl-2 and preparation method of lipid nanoparticle

Nº publicación: JP2019535808A 12/12/2019

Solicitantes: \u5357\u4EAC\u25B2\u7DD1\u25BC\u53F6\u25B2\u85AC\u25BC\u6709\u9650, \u5357\u4EAC\u25B2\u611B\u25B2\u8CFD\u25BC\u514B\u25B2\u7D0D

Resumen: The invention discloses a lipid nanoparticle for inhibiting antisense oligonucleotide of bcl-2, and belongs to the field of bio-technology. The lipid nanoparticle for inhibiting the antisense oligonucleotide of bcl-2 is prepared by covering a section of antisense oligonucleotide by virtue of a membrane material, wherein the nucleotide sequence of the lipid nanoparticle is 5’-TCTCCCAGCGTGCGCCAT-3’ or 5’-UCUCCCAGCGTGCGCCAU-3’. The invention also discloses a preparation method of the lipid nanoparticle. The nanoparticle provided by the invention can take a good blocking effect on the growth of tumor cells and specific target genes, and especially for KB cervical cancer cells.

THERAPEUTIC POLYMERIC NANOPARTICLES COMPRISING LIPIDS AND METHODS OF MAKING AND USING SAME

Nº publicación: JP2019535660A 12/12/2019

Solicitantes: \u30D5\u30A1\u30A4\u30B6\u30FC\u30FB\u30A4\u30F3

Resumen: The present disclosure generally relates to therapeutic nanoparticles. Examples of nanoparticles disclosed herein may include about 10 to about 70 weight percent of biocompatible polymers such as a diblock polymer (for example, poly(lactic)acid and polyethylene glycol or poly(lactic)-co-poly (glycolic) acid and poly(ethylene)glycol), about 5 to about 50 weight percent glyceride (for example, a monoglyceride, a diglyceride, or a triglyceride), and about 0.1 % to about 40% weight percent therapeutic agent (for example, docetaxel or bortezomib).
COMPOSITION FOR HEPATIC ARTERIAL CHEMOEMBOLIZATION USING HUMAN SERUM ALBUMIN NANOPARTICLES CARRYING ANTICANCER AGENT, AND METHOD FOR PRODUCING SAME

Nº publicación: JP2019535646A 12/12/2019
Solicitantes: 広田正毅 田村展宏 三上敬之

Resumen
The present invention aims to dramatically increase the effect of hepatic arterial chemoembolization by developing human serum albumin-based nanoparticles, which are bioproteins that effectively carry Adriamycin in place of Adriamycin, an anticancer agent used in hepatic arterial chemoembolization. The human serum albumin nanoparticles carrying the Adriamycin not only intensively infiltrate the drug effectively into the cells but also have a synergistic effect that can induce a long-term therapeutic effect by utilizing the effect of continuous drug release from the particles.
COMBINATION THERAPIES OF PREDNISONE AND URICASE MOLECULES AND USES THEREOF

Nº publicación JP2019535819A  12/12/2019
Solicitantes 

Resumen  Described herein are methods for reducing an antibody response to uricase therapy, improving the treatment of gout, reducing uric acid levels, and preventing infusion reactions. The methods may include administration of a uricase and a steroid as described herein.
INHIBITORS OF CRISPR-CAS9

Nº publicación: JP2019535324A  12/12/2019
Solicitantes:  
Resumen:  Cas9-inhibiting polypeptide compositions and methods are provided.
HUMAN CYTOMEGALOVIRUS VACCINE

**Resumen**

The invention relates to HCMV ribonucleic acid (RNA) vaccines encoding i) HCMV antigenic polypeptides gH, gL, UL128, UL130, and/or UL131A, ii) HCMV antigenic polypeptide gB, iii) HCMV antigenic polypeptide pp65, and iv) a pharmaceutically acceptable carrier or excipient. Also HCMV polypeptide vaccines comprising (i)-(iv), HCMV mRNA vaccines comprising HCMV antigens, as well as methods of using the vaccines and compositions thereof.

Nanocage

**Resumen**

Variant ferritin polypeptides comprising a modified amino acid sequence of a wild-type ferritin (e.g. bacterioferritin), the modified sequence being in a dimeric subunit interface or the N-terminus of the polypeptide, wherein the variant may assemble into a ferritin nanocage when contacted with a nucleating agent (e.g. gold, iron, copper). Also claimed are fusion proteins comprising wild-type ferritin and a peptide selected from an antibody, antibody binding fragment, a fluorophore, a His tag and a nucleating agent binding peptide; a ferritin nanocage comprising the variant ferritin polypeptide or fusion protein.
抗腫瘍剤、がんの治療及び/又は予防のための医薬組成物

№ publicación JP2019210219A 12/12/2019
Solicitantes 未詳
Resumen 本発明は、投与後、長期間にわたり腫瘍部位に留まり、持続的な腫瘍抑制作用を示す新規な医薬を提供する。本発明の抗腫瘍剤は、樹脂粒子に複数の白金ナノ粒子が固定化された構造を有する樹脂複合体を有効成分として含有する。樹脂複合体は、白金ナノ粒子２０の少なくとも一部が樹脂粒子１０の表面に分布しており、樹脂粒子１０に埋められた部位及び樹脂粒子１０の表面から外に露出した部位を有する一部露出白金ナノ粒子４０及び樹脂粒子１０の表面に吸着している表面吸着白金ナノ粒子５０を含んでいてもよい。【選択図】図１

COMPOUNDS AND METHODS FOR ACTIVATING TIE2 SIGNALING

№ publicación JP2019535651A 12/12/2019
Solicitantes 未詳
Resumen The present invention in various aspects and embodiments, involves methods for treating Tie2-related vascular permeability by administering one or more collagen IV-derived biomimetic peptides and involves compositions for treating Tie2-related vascular permeability comprising one or more collagen IV-derived bi-omimetic peptides. Such peptides can promote the Tie2 agonist activities of Angiopoietin 2 (Ang2), thereby stabilizing vascular and/or lymphatic vessels.
ACTIVITY SENSOR WITH TUNABLE ANALYTE

Nº publicación WO2019236989A1  12/12/2019
Solicitantes GLYMPSE BIO INC [US]
Resumen A nanoparticle activity sensor containing a reporter and at least one tuning domain that modifies a distribution or residence time of the activity sensor when administered to a patient. When administered to the patient, the activity sensor enters cells or tissue where it is cleaved by enzymes specific to a physiological state such as a disease to release a detectable analyte. The tuning domains include molecular structures that modulate distribution or decay by protecting the particle from premature cleavage and indiscriminate hydrolysis, shielding the particle from immune detection and clearance, or by targeting the particle to specific tissue, bodily fluids, or cell types.

IMPROVED VIRUS-LIKE NANOPEARLICLES FOR ORAL DELIVERY

Nº publicación WO2019236870A1  12/12/2019
Solicitantes UNIV CALIFORNIA [US]
Resumen A Hepatitis E virus (HEV)-based virus like nanoparticle (HEVNP) made with a modified capsid protein containing at least a portion of open reading frame 2 (ORF2) protein conjugated with gold nanocluster is provided. Also provided are methods of targeted delivery of a nucleic acid using the HEVNP.

CURCUMIN CARBON QUANTUM DOTS AND USE THEREOF

Nº publicación WO2019232701A1  12/12/2019
Solicitantes HUANG CHIH CHING [CN]
Resumen An engineered nanoparticle having a curcumin carbon quantum dot and the use thereof for antiviral application are disclosed. A method of preparation of a curcumin carbon nanoparticle is also disclosed, the method comprises heating a curcumin powder at a temperature range from 120 to 210 °C to yield a residue; dissolving the residue with sodium phosphate buffer in a solution; and purifying the solution.
**COMPOUND, SALT THEREOF AND LIPID PARTICLES**

**Resumen**

El presente invento se dirige al problema de proporcionar: un compuesto o un sal de él, que constituye partículas lipídicas que permiten lograr una alta tasa de encapsulación de ácidos nucleicos y una excelente entrega de ácidos nucleicos; y partículas lipídicas que usen este compuesto o un sal de él, y que permiten lograr una alta tasa de encapsulación de ácidos nucleicos y una excelente entrega de ácidos nucleicos. El presente invento proporciona un compuesto representado por la fórmula (1) o un sal de él. En la fórmula, X representa -NR1- o -O-; R1 representa un átomo de hidrógeno, un grupo carbonílico o algo similar; cada uno de R2 y R3 independientemente representa un átomo de hidrógeno, un grupo carbonílico o algo similar; cada uno de R4, R5, R6, R7, R8, R9, R10, R11 y R12 independientemente representa un átomo de hidrógeno, un grupo carbonílico o algo similar; cada uno de R4, R5, R6, R7, R8, R9, R10, R11 y R12 independientemente representa un átomo de hidrógeno, un grupo carbonílico o algo similar; uno o más pares seleccionados de entre un par de R4 y R5, un par de R10 y R5, un par de R5 y R12, un par de R4 y R6, un par de R5 y R6, un par de R6 y R7, un par de R6 y R10, un par de R12 y R7, y un par de R7 y R8 puede combinarse con uno o más pares seleccionados de entre un par de R4 y R5, un par de R10 y R5, un par de R5 y R12, un par de R4 y R6, un par de R5 y R6, un par de R6 y R7, un par de R6 y R10, un par de R12 y R7, y un par de R7 y R8 pueden combinarse con uno o más pares seleccionados de entre un par de R4 y R5, un par de R10 y R5, un par de R5 y R12, un par de R4 y R6, un par de R5 y R6, un par de R6 y R7, un par de R6 y R10, un par de R12 y R7, y un par de R7 y R8 puede formar un anillo de 4-7 miembros que puede contener un átomo de O; y cada uno de a, b, c y d independientemente representa un entero de 0-3, proporcionado que (a + b) es 1 o más y (c + d) es 1 o más.

**PRODUCTION OF Sized MACRO- AND MICRO- ELP PARTICLES FOR DRUG DELIVERY**

**Resumen**

Elastin-like polymers (ELP) are shown to demonstrate dynamic behavior atop silica, similar to visco-elastic polymer dewetting. A combination of multiple factors are shown to contribute to this behavior including the hydrophilicity of the silica preventing the adsorption of ELP, the formation of a salt layer between ELP and silica, and the ability of the silica and salt layer to hold on to minute amounts of water for prolonged periods. Further, the addition of a polyethyleneimine (PEI) block to the terminal end of ELP allows the particle radius as well as LCST to be controlled by changing any combination of polymer concentration, NaCl concentration, and pH. The addition of the PEI block also provides the ability to crosslink the copolymers and achieve a stable particle radius after formation in harsh environments.

**CHITOSAN GELS (A) CONTAINING METAL NANOPARTICLES OF COPPER, SILVER AND ANTIBIOTICS (CIPROFLOXACIN, CEFOTAXIME, GENTAMICIN AND CLOXACILLIN)**

**Resumen**

La invención se refiere a gel de chitosán (polí-beta-glicosamina) con propiedades bactericidas y fungicidas en una mezcla con nanopartículas de cobre y/o plata y/o antibióticos (ciprofloxacina, cloxacilina, gentamicina y cefotaxima) y en mezclas de ciprofloxacina y cloxacilina, gentamicina y cefotaxima, así como con el método de producción y las usos de ello.
Viral vector nanocapsule for targeting gene therapy and its preparation

Resumen

VIRAL VECTOR NANOCAPSULE FOR TARGETING GENE THERAPY AND ITS PREPARATION The invention provides novel methods, materials and systems that can be used to generate viral vectors having altered tissue and cell targeting abilities. In illustrative embodiments of the invention, the specificity of lentiviral vectors was modulated by a thin polymer shell that synthesized and coupled to the viral envelope in situ. The polymer shell can confer such vectors with new targeting ability via agents such as cyclic RGD (cRGD) peptides that are coupled to the polymer shell. These polymer encapsulated viral vectors exhibit a number of highly desirable characteristics including a higher thermal stability, resistance to serum inactivation in vivo, and an ability to infect dividing and non-dividing cells with high efficiencies. The invention provides novel methods, materials and systems that can be used to generate viral vectors having altered tissue and cell targeting abilities. In illustrative embodiments of the invention, the specificity of lentiviral vectors was modulated by a thin polymer shell that synthesized and coupled to the viral envelope in situ. The polymer shell can confer such vectors with new targeting ability via agents such as cyclic RGD (cRGD) peptides that are coupled to the polymer shell. These polymer encapsulated viral vectors exhibit a number of highly desirable characteristics including a higher thermal stability, resistance to serum inactivation in vivo, and an ability t

NANOPARTICLE DELIVERY SYSTEM FOR TARGETED ANTI-OBESITY TREATMENT

Resumen

A magnetic nanoparticle including a TRPV1 agonist, as well as methods of preparation and use, are described herein. A magnetically responsive pharmaceutical can include a core region having a magnetic nanoparticle (MNPs) and a TRPV1 protein agonist. Further, an exterior coating comprising a polymer can be formed around the core region. The magnetically responsive pharmaceutical can be administered to a recipient and directed to a target region using an external magnetic field.
Cyclic Peptide Antiviral Agents and Methods Using Same

Nº publicación US2019375792A1 12/12/2019
Solicitantes UNIV DREXEL [US]
Resumen The present invention includes novel cyclic peptides of formula (I). The present invention further includes novel cyclic peptides conjugated with a gold nanoparticle, and methods of using the same. The invention further provides a pharmaceutical composition comprising at least one pharmaceutically acceptable carrier and at least one cyclic compound of the invention. The invention further provides a method of treating, reducing, or preventing HIV-1 infection in a mammal in need thereof, the method comprising administering to the mammal a therapeutically effective amount of at least one cyclic compound of the invention.

BIODEGRADABLE LIPIDS FOR THE DELIVERY OF ACTIVE AGENTS

Nº publicación US2019374646A1 12/12/2019
Solicitantes ALNYLAM PHARMACEUTICALS INC [US]
Resumen The present invention relates to a cationic lipid having one or more biodegradable groups located in a lipidic moiety (e.g., a hydrophobic chain) of the cationic lipid. These cationic lipids may be incorporated into a lipid particle for delivering an active agent, such as a nucleic acid. The invention also relates to lipid particles comprising a neutral lipid, a lipid capable of reducing aggregation, a cationic lipid of the present invention, and optionally, a sterol. The lipid particle may further include a therapeutic agent such as a nucleic acid.

COMPOSITIONS AND METHODS FOR KELOIDLESS HEALING

Nº publicación US2019374556A1 12/12/2019
Resumen Provided are compositions, methods and devices for reducing scarring during healing of a tissue wound. The compositions and methods involve use of sphingosine-1-phosphate (S1P), and/or an expression vector that encodes sphingosine kinasel (SphK1). The compositions can be combined with other agents and implements, such as biocompatible nanoparticles, and medical devices involved with promoting wound healing. The approaches can reduce formation or prevent the occurrence of keloids.
### PARTICLES FOR DELIVERY OF BIOMOLECULES

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<td>Solicitantes</td>
<td>BRIGHAM &amp; WOMENS HOSPITAL INC [US]</td>
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<td>UNIV MICHIGAN REGENTS [US]</td>
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<tr>
<td>Resumen</td>
<td>This disclosure relates to particles, compositions, methods of making, and methods of use thereof.</td>
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### Milk-Derived Microvesicle Compositions and Related Methods

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<td>Solicitantes</td>
<td>UNIV LOUISVILLE RES FOUND INC [US]</td>
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<tr>
<td>Resumen</td>
<td>A composition is provided that comprises a therapeutic agent encapsulated by a milk-derived microvesicle. The compositions can include therapeutic agents such as phytochemical agents or chemotherapeutic agents, while the milk-derived microvesicle can be derived from raw milk or colostrum. Further provided are methods for isolating a microvesicle that includes the steps of obtaining an amount of milk, and subjecting the milk to a series of sequential centrifugations configured to yield greater than about 300 mg of microvesicle protein per 100 ml of milk. Methods of modifying an immune response and treating a cancer in which a milk-derived microvesicle composition is administered are also provided.</td>
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### EYE-INJECTABLE POLYMERIC NANOPARTICLES AND METHOD OF USE THEREFOR

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<td>Solicitantes</td>
<td>FONDAZIONE ST ITALIANO DI TECNOLOGIA [IT]</td>
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<td></td>
<td>ST DON CALABRIA OSPEDALE CLASSIFICATO SACRO CUORE [IT]</td>
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<tr>
<td>Resumen</td>
<td>The present invention refers to a method for treating visual deficits comprising at least one step of injecting in the eye of a subject in need thereof a therapeutically effective amount of photoactive nanoparticles (NPs) or a composition comprising said photoactive nanoparticles (NPs).</td>
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**PHYSIOLOGICALLY ACTIVE SUBSTANCE CARRIER**

**Resumen**

The present invention provides a bioactive substance carrier, which includes: a bioactive substance; and porous silica particles supporting the bioactive substance and having a plurality of pores with a diameter of 5 nm to 100 nm, wherein the porous silica particles have particular physical properties, can deliver all various drugs by a supported amount in a sustained manner, and can be parenterally administered.

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**NANOPARTICLE-BASED LIVER-TARGETING THERAPY**

**Resumen**

The present invention provides a nanoparticle comprising: a core comprising a metal and/or a semiconductor; and a plurality of ligands covalently linked to the core, wherein said ligands comprise: at least one liver-targeting ligand, such as C2-alpha galactose; at least one payload ligand comprising a bioactive agent, such as maytansinoid DM1; and at least one dilution ligand comprising a poly(ethylene glycol) (PEG) moiety, such as PEG COOH. Also provided are pharmaceutical compositions comprising the nanoparticle, and uses of the nanoparticle in methods of treatment of liver disorders, including liver cancers such as hepatocellular carcinoma (HCC).
PARTICLES AND COMPOSITIONS COMPRISING THE SAME FOR TRANSFECTION

Nº publicación EP3576796A1  11/12/2019

Solicitantes  CENTRE NAT RECH SCIENT [FR]
               UNIV PARIS VAL DE MARNE [FR]
               INST NAT SANTE RECH MED [FR]
               HOPITAUX PARIS ASSIST PUBLIQUE [FR]

Resumen  The present invention relates to the localized delivery of nucleic acids to cells using polyelectrolyte assemblies in the form of particles that are prepared by layer-by-layer deposition of nucleic acid and specific polycation. It also relates to compositions comprising said particles and methods for the treatment of disorders or diseases by administration of such particles.

抗Epha3抗体修饰修饰的经鼻入脑的纳米粒子及其用途

Nº publicación CN110548016A  10/12/2019

Resumen  本发明涉及一种抗Epha3抗体修饰的含有化药的纳米粒，用于治疗胶质瘤和医学成像中的用途。

一种牛血清白蛋白-铁纳米复合物及其制备方法和应用

Nº publicación CN110548017A  10/12/2019

Resumen  本发明提供了一种牛血清白蛋白-铁纳米复合物及其制备方法和应用，本发明提供的一种牛血清白蛋白-铁纳米复合物通过将牛血清白蛋白溶液和铁源溶液混合反应得到，通过实验发现，本发明提供的纳米复合物能够很好的促进成纤维细胞生长，可用于小鼠烫伤伤口的治疗；同时还具有T-MRI成像作用，可以作为很好的肿瘤诊断剂。此外，本发明提供的牛血清白蛋白-铁纳米复合物的制备方法简单，得到的复合物粒径均一，分散性好，生物相容性好，可用于生物体系。

Combinational cancer therapy via near-IR responsive photothermal and chemotherapy with drug conjugated metal nanorods

Nº publicación KR20190135900A  09/12/2019

Solicitantes  

Resumen  本发明涉及一种利用近红外响应光热和化疗联合治疗的药物连接金属纳米棒复合物。本发明的药物连接金属纳米棒复合物通过药物和金属纳米棒的共价连接实现光热和化疗的协同作用，通过近红外光的照射，复合物在目标区域产生热量，并且可以作为良好的肿瘤诊断剂。此外，本发明提供的纳米复合物的制备方法简单，得到的复合物粒径均一，分散性好，生物相容性好，可用于生物体系。
AN ORAL DELIVERY MULTILAYER CAPSULE FOR NUCLEIC ACID MOLECULES AND METHOD FOR MANUFACTURING THE SAME

Nº publicación KR20190135796A  09/12/2019
Solicitantes 
Resumen

pH敏感型羟基磷灰石/玉米醇溶蛋白纳米药物载体及其应用

Nº publicación CN110538164A  06/12/2019
Resumen