Recent patents in chimeric antigen receptors

Patent number	Description	Assignee	Inventor	Date
US 9,522,955	Chimeric antigen receptors (CARs) comprising an antigen-binding domain of a KDR-1121 or DC101 antibody, an extracellular hinge domain, a T-cell receptor transmembrane domain, and an intracellular domain T-cell receptor signaling domain. Also, nucleic acids, recombinant expression vectors, host cells, populations of cells, antibodies, or antigen-binding portions thereof, pharmaceutical compositions relating to the CARs, and methods of detecting the presence of cancer in a host and methods of treating or preventing cancer in a host.	The United States of America, as represented by the Secretary, Department of Health and Human Services (Washington, DC)	Rosenberg SA, Chinnasamy D	12/20/2016
US 9,511,092	A chimeric receptor comprising NKG2D, DAP10 and CD3 zeta. Also, a composition comprising this chimeric receptor and methods for making and using it to enhance the cytotoxicity and antitumor capacity of natural killer (NK) cells, and methods for the use of NKG2D-DAP10-CD3 zeta polypeptides, vectors and cells in methods for treating cancer and other proliferative disorders, as well as infectious diseases.	St. Jude Children's Research Hospital (Memphis, TN, USA), National University of Singapore (Singapore)	Campana D, Chang Y-H	12/6/2016
US 9,499,629	Compositions and methods for treating cancer in a human by administering a genetically modified T cell to express a CAR wherein the CAR comprises an antigen-binding domain, a transmembrane domain, a costimulatory signaling region, and a CD3 zeta signaling domain.	The Trustees of the University of Pennsylvania (Philadelphia)	June CH, Levine BL, Porter DL, Kalos MD, Milone MC	11/22/2016
US 9,499,589	A chimeric protein comprising an antigen sequence and a domain for trafficking the protein to an endosomal compartment, irrespective of whether the antigen is derived from a membrane or non-membrane protein, which can be used to generate vaccines against selected antigens. The invention provides a method for treating a patient with cancer by providing a chimeric protein comprising a cancer-specific antigen or a nucleic acid encoding the protein to the patient.	The Johns Hopkins University (Baltimore)	August T, Marques, Jr. E	11/22/2016
US 9,447,194	A bispecific chimeric antigen receptor, comprising: (i) at least two antigen-specific targeting regions; (ii) an extracellular spacer domain; (iii) a transmembrane domain; (iv) at least one costimulatory domain; and (v) an intracellular signaling domain, wherein each antigen-specific targeting region comprises an antigen-specific single chain Fv (scFv) fragment, and binds a different antigen, and wherein the bispecific chimeric antigen receptor is co-expressed with a therapeutic control.	Seattle Children's Hospital (Seattle)	Jensen M	9/20/2016
US 9,446,105	Compositions and methods for treating leukemia, for example, acute myeloid leukemia, using at least one chimeric antigen receptor specific to folate receptor-β (FRβ), vectors comprising the same, and recombinant T cells comprising the FRβ CAR. Also, methods of administering a genetically modified T cell expressing a CAR that comprises a FRβ-binding domain in combination with a RXR agonist, such as all-trans retinoic acid.	The Trustees of the University of Pennsylvania (Philadelphia)	Powell, Jr. DJ	9/20/2016
US 9,394,368	Compositions and methods for treating diseases associated with expression of EGFRvIII. Also, chimeric antigen receptor (CAR) specific to EGFRvIII, vectors encoding the same, and recombinant T cells comprising the anti-EGFRvIII CAR, and methods of administering a genetically modified T cell expressing a CAR that comprises an anti-EGFRvIII binding domain.	Novartis (Basel, Switzerland), The Trustees of the University of Pennsylvania (Philadelphia), University of Pittsburgh–of the Commonwealth System of Higher Education (Pittsburgh)	Brogdon J, Johnson LA, June CH, Loew A, Maus M, Scholler J, Okada H	7/19/2016
US 9,359,447	A chimeric antigen receptor (CAR), (i) an antigen-binding domain of HN1 or SS, a transmembrane domain, and an intracellular T-cell signaling domain, or (ii) an antigen-binding domain of SS1, a transmembrane domain, an intracellular T-cell signaling domain, a granulocyte-macrophage colony-stimulating factor (GM-CSF) receptor 2 leader, and methods of detecting the presence of cancer in a mammal and methods of treating or preventing cancer in a mammal.	The United States of America, as represented by the Secretary, Department of Health and Human Services (Washington, DC)	Feldman SA, Rosenberg SA, Pastan IH	6/7/2016
US 9,334,311	Chimeric OspA molecules comprising the proximal portion from one OspA serotype, together with the distal portion from another OspA serotype, while retaining antigenic properties of both of the parent polypeptides, for use in a Lyme disease vaccine. Also, methods for administering the chimeric OspA molecules to a subject in the prevention and treatment of Lyme disease or borreliosis.	Baxalta (Bannockburn, IL, USA), Baxalta GmbH (Glattpark (Opfikon), Switzerland)	Crowe BA, Livey I, O'Rourke M, Schwendinger M	5/10/2016
US 9,328,156	Compositions and methods for treating cancer in a human by administering a genetically modified T cell to express a CAR wherein the CAR comprises an antigen-binding domain, a transmembrane domain, a costimulatory signaling region, and a CD3 zeta signaling domain.	The Trustees of the University of Pennsylvania (Philadelphia)	June CH, Levine BL, Porter DL, Kalos MD, Milone M	5/3/2016

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