

Recent patents in synthetic biology

Patent number	Description	Assignee	Inventor	Date
US 9,695,227	Binding domains directed against and/or specifically binding to GPCR:G protein complexes. Also, nucleic acid sequences encoding such binding domains and cells expressing or capable of expressing such binding domains. The binding domains can be used as universal tools for the structural and functional characterization of G-protein-coupled receptors in complex with downstream heterotrimeric G proteins and bound to various natural or synthetic ligands, for investigating the dynamic features of G-protein activation, as well as for screening and drug discovery efforts that make use of GPCR:G protein complexes.	Vrije Universiteit Brussel (Brussels), VIB VZW (Ghent, Belgium), Stanford University (Palo Alto, CA, USA), University of Michigan (Ann Arbor, MI, USA)	Steyaert J, Pardon E, Laeremans T, Kobilka B, Rasmussen S, Granier S, Sunahara RK	7/4/2017
US 9,694,107	A synthetic tissue or complex that can be produced by culture and has a high level of differentiation ability. Also, a therapy and medicament for repairing and/or regenerating tissue by culturing cells under specific culture conditions such that medium contains an extracellular matrix synthesis promoting agent, making the cells organized and easily detached from a culture dish.	Two Cells Co. (Hiroshima, Japan)	Nakamura N, Yoshikawa H, Ando W	7/4/2017
US 9,689,872	Protein binding domains that are capable of increasing the stability of a functional conformational state of a G-protein-coupled receptor (GPCR), in particular, increasing the stability of a GPCR in its active conformational state; can be used as a tool for the structural and functional characterization of GPCRs bound to various natural and synthetic ligands, as well as for screening and drug discovery efforts targeting GPCRs.	VIB VZW (Ghent, Belgium), Vrije Universiteit Brussel (Brussels), Stanford University (Palo Alto, CA, USA)	Steyaert J, Fung JJ, Kobilka B, Laeremans T, Pardon E, Rasmussen S	6/27/2017
US 9,689,012	Methods of assembling a plurality of genetic units to form synthetic genetic constructs, involving appending universal adapter oligonucleotides and flexible adapter oligonucleotides to the 5' and 3' ends of separate genetic units to be assembled to form separate dual-extended genetic units. The dual-extended genetic units are assembled together via homologous recombination between the flexible adapter oligonucleotide portions of the dual-extended units to form synthetic genetic constructs.	Cornell University (Ithaca, NY, USA)	Cunnac S, Collmer A	6/27/2017
US 9,688,955	A material comprising positively and negatively charged nanoparticles, wherein one of said nanoparticles contains a magnetically responsive element, combined with a support molecule, which is a long natural or synthetic molecule or polymer to make a magnetic nanoparticle assembly. When the magnetic nanoparticle assembly is combined with cells, it will magnetize those cells, which can then be washed to remove the magnetic nanoparticle assembly and the magnetized cells manipulated in a magnetic field.	Nano3D Biosciences (Houston, TX, USA)	Souza GR	6/27/2017
US 9,688,617	A photoreactive synthetic regulator of protein function and a light-regulated polypeptide that includes a subject synthetic regulator. Also, methods of modulating protein function involving the use of light.	The Regents of the University of California (Oakland, CA, USA)	Trauner D, Isacoff EY, Kramer RH, Banghart MR, Fortin DL, Mourou A	6/27/2017
US 9,683,054	A method for generation of humanized full-length antibodies in mammalian cells. A library of humanized variants is provided with high, validated human framework diversity without requiring back-mutations to retain original affinity. Synthetic complementarity-determining region (CDR)-encoding fragment libraries derived from a template antibody are ligated to human framework region encoding fragments from a human framework pool limited only to germline sequences from functionally expressed antibodies.	BioAlta (San Diego, CA, USA)	Short JM	6/20/2017
US 9,683,024	A synthetic nucleotide, which transcribes as the cell-traversal protein for ookinetes and sporozoites (CelTOS) antigen of Malaria Plasmodium, and methods of use thereof.	The United States of America as represented by the Secretary of the Army (Washington, DC, USA)	Angov E, Bergmann-Leitner E, Ockenhouse C	6/20/2017
US 9,682,993	Compounds having anticancer activity; synthetic methods for making the compounds; pharmaceutical compositions comprising the compounds; and methods of treating disorders associated with uncontrolled cellular proliferation using the compounds and compositions.	St. Jude Children's Research Hospital (Memphis, TN, USA)	Webb TR, Lagiseti C	6/20/2017

Source: United States Patent and Trademark Office (<http://www.uspto.gov>).