

Recent patents in synthetic biology

Patent number	Description	Assignee	Inventor	Date
US 9,388,417	A novel customized small RNA (sRNA) that reduces gene expression in prokaryotic cells, a preparation method thereof, and the use thereof, and more particularly to a synthetic sRNA comprising an Hfq binding site, derived from the sRNA of any one of MicC, SgrS and MicF, and a region that base-pairs with the target gene mRNA, and to a preparation method thereof and the use thereof. The synthetic sRNA can be used to construct recombinant strains for efficient production of various metabolites and to establish efficient methods for production of various metabolites.	Korea Advanced Institute of Science and Technology (Daejeon, S. Korea)	Lee SY, Na D, Yoo SM	7/12/2016
US 9,382,537	Methods and compositions for introducing microRNA (miRNA) activity or function into cells using synthetic nucleic acid molecules. Also, methods and compositions for identifying miRNAs with specific cellular functions that are relevant to therapeutic, diagnostic and prognostic applications wherein synthetic miRNAs and/or miRNA inhibitors are used in library screening assays.	Asuragen (Austin, TX, USA)	Brown D, Ford L, Cheng A, Jarvis R, Byrom M, Ovcharenko D, Devroe E, Kelnar K	7/5/2016
US 9,382,366	Synthetic mimics of cell-penetrating peptides, especially certain novel monomers, oligomers and polymers (for example, co-polymers) that are useful for the preparation of synthetic mimics of cell penetrating peptides, their compositions, preparations and use.	University of Massachusetts (Boston)	Tew GN, Gabriel GJ, Som A, Tezgel AO	7/5/2016
US 9,376,681	Synthetic oligonucleotide mimetics of miRNAs, in particular double-stranded, chemically modified oligonucleotide mimetics of miR-29. Also, pharmaceutical compositions comprising the mimetics and their use in treating or preventing conditions associated with dysregulation of extracellular matrix genes, such as tissue fibrotic conditions.	miRagen Therapeutics (Boulder, CO, USA)	Montgomery RL, Dalby CM, Van Rooij E, Gallant-Behm C	6/28/2016
US 9,376,669	Nucleic acids encoding proteins, therapeutics comprising nucleic acids encoding proteins, methods for inducing cells to express proteins using nucleic acids, methods, kits and devices for transfecting, gene editing and reprogramming cells, and cells, organisms and therapeutics produced using these methods, kits and devices. Also, methods and products for altering the DNA sequence of a cell, methods and products for inducing cells to express proteins using synthetic RNA molecules, and therapeutics comprising nucleic acids encoding gene-editing proteins.	Factor Bioscience (Cambridge, MA, USA)	Angel M, Rohde C	6/28/2016
US 9,370,606	A synthetic tissue or complex that can be produced by culture and has a high level of differentiation ability. Also, a therapy and medication for repairing and/or regenerating tissue using replacement and covering, and a method for producing an implantable synthetic tissue that does not require a plurality of monolayer cell sheets assembled to form a three-dimensionally structured synthetic tissue.	Two Cells Co. (Hiroshima, Japan)	Nakamura N, Yoshikawa H, Ando W	6/21/2016
US 9,365,618	A TNFR2 expression-inducing composition including as an active ingredient a peptide having TNFR2 expression-inducing activity, and a method for producing cells that express TNFR2 selectively by use of the composition, including culturing at least one species of cells capable of expressing TNF receptor 2, and supplying the cells with a synthetic peptide consisting of a nuclear localization signal sequence (NLS) or a nucleolar localization signal sequence (NoLS) to enhance TNFR2 expression in the cells.	Toagosei Co. (Tokyo)	Kobayashi N, Yoshida T, Niwa M	6/14/2016
US 9,365,603	Strengthening inositol monophosphatase activity in a transformant by introducing a myo-inositol biosynthesis pathway into a host microorganism that does not possess an endogenous myo-inositol biosynthesis pathway, such as <i>Escherichia coli</i> ; useful for recombinant DNA techniques and synthetic biology methods.	Asahi Kasei Chemicals (Tokyo)	Konishi K, Imazu S, Sato M	6/14/2016
US 9,359,399	Synthetic peptide amide ligands of the $\kappa$ -opioid receptor and particularly to agonists of the $\kappa$ -opioid receptor that exhibit low P450 CYP inhibition and low penetration into the brain. Pharmaceutical compositions containing these synthetic peptide amides are useful in the prophylaxis and treatment of pain and inflammation associated with a variety of diseases and conditions, including visceral pain, neuropathic pain, hyperalgesia, inflammation associated with conditions such as irritable bowel disease and irritable bowel syndrome, ocular and otic inflammation, other disorders and conditions such as pruritis, edema, hyponatremia, hypokalemia, ileus, tussis and glaucoma.	Cara Therapeutics (Shelton, CT, USA)	Schteingart CD, Menzaghi F, Jiang G, Alexander RV, Sueiras-Diaz J, Spencer RH, Chalmers DT, Luo RZ	6/7/2016

Source: US Patent and Trademark Office (<http://www.uspto.gov>); European Patent Office (<http://www.epo.org>).