

PATENTS

Lysosomes

Recent patents related to lysosome-targeted therapeutics and methods of screening and visualization.

Patent number	Description	Assignee	Inventor	Date
US 10,401,361	Substrates and methods for the visualization of intracellular organelles, such as the lysosome, peroxisome, nucleus, endoplasmic reticulum and Golgi apparatus, based upon organelle enzyme activity. Such compounds represent a novel combination of chemically distinct enzyme substrates with targeting and detection substrates that are activated by enzyme activity inside target organelles to produce a detectable signal. The organelle-targeted enzyme substrates of this invention are designed to provide high fluorescence at the lower pH values found in some organelles and can be used for monitoring enzyme activity inside cells at very low concentrations.	Marker Gene Technologies, (Eugene, OR, USA)	Naleway JJ, Harlan FK, Lusk JS	9/3/2019
US 10,300,113	Targeted therapeutics that localize to a specific subcellular compartment such as the lysosome. The targeted therapeutics include a therapeutic agent and a targeting moiety that binds a receptor on the exterior surface of the cell, permitting proper subcellular localization of the targeted therapeutic upon internalization of the receptor.	BioMarin Pharmaceutical (Novato, CA, USA)	Lebowitz J, Beverley SM	5/28/2019
US 10,124,052	DNA vaccines against yellow fever based on the sequence that encodes the yellow fever virus envelope protein (p/YFE). Besides the wild p/YFE construct, sequence E was also fused with the sequence that encodes the human lysosome-associated membrane protein (h-LAMP), generating the construct (pL/YFE).	Fundacao Oswaldo Cruz (Rio de Janeiro)	Marques ETA, Dhalia R, Maciel Filho R	11/13/2018
US 10,035,830	A method for preparing a GM1 gangliosidosis human cell model based on induced pluripotent stem cells (iPSCs) and iPSC-originated neural progenitor cells, and a use of the GM1 model for the development of a GM1 gangliosidosis-treating agent. iPSCs originated from GM1 patient fibroblasts can be differentiated into neural progenitor cells and neurosphere cells that can emulate the characteristics shown in patients with GM1, so that said cells can be efficiently used for the investigation of intracellular GM1 symptoms such as GM1 gangliosidosis and lysosome accumulation and gene expression pattern change.	Korea Research Institute of Bioscience and Biotechnology (Daejeon, S. Korea)	Cho YS, Son MY, Kwak JE, Seol B, Jeon HJ	7/31/2018
US 10,010,623	A linker for forming conjugates of a protein or peptide with a therapeutically active agent and which comprise a thiomaleamic acid moiety that is susceptible to cleavage under the pH conditions prevalent in the lysosome.	UCL Business plc (London)	Smith MEB	7/3/2018
US 9,920,378	A method for screening cells that produce allogeneic autophagosome-enriched compositions able to induce expression of a selective marker on a subpopulation of peripheral blood mononuclear cells, the method comprising contacting a cell with a proteasome inhibitor, contacting the cell with a lysosome inhibitor, harvesting the resulting autophagosomes, determining a molecular signature of the harvested autophagosomes, and selecting cells that divert one or more Toll-like receptor agonist and/or one or more molecular chaperones to the harvested autophagosomes. An allogeneic, off-the-shelf cancer vaccine may be produced and made available to be administered in order to stimulate a targeted immune response in patients bearing different tumor types.	UbiVac (Portland, OR, USA), Providence Health & Services-Oregon (Portland, OR, USA)	Hilton T, Aung S, van de Ven R, Paustian C, Moudgil T, Dubai C, Twitty C, Hu H-M, Fox BA	3/20/2018
US 9,872,926	pH-tunable, highly activatable multicolored fluorescent nanoplatfoms and methods of using the nanoplatfoms in a variety of applications including, but not limited to, investigating fundamental cell physiological processes such as pH regulation in endocytic vesicles, endosome/lysosome maturation, and effect of pH on receptor cycling and trafficking of subcellular organelles.	The Board of Regents of the University of Texas System (Austin, TX, USA)	Gao J, Zhou K, Sumer BD	1/23/2018

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

Published online: 7 February 2020

<https://doi.org/10.1038/s41587-020-0420-8>