Resource Summary Report

Generated by NIF on Aug 10, 2026

pcDNA3.1/hChR2(H134R)-EYFP

RRID:Addgene_20940
Type: Plasmid

Proper Citation

RRID:Addgene_20940

Plasmid Information

URL: http://www.addgene.org/20940

Proper Citation: RRID:Addgene_20940

Insert Name: channelrhodopsin-2

Organism: C. reinhardtii

Bacterial Resistance: Ampicillin

Defining Citation: PMID:17410168

Vector Backbone Description: Backbone Size:5545; Vector Backbone:pcDNA3.1; Vector Types:Mammalian Expression; Bacterial Resistance:Ampicillin

Comments: The H134R mutation present in the ChR2 sequence is a gain-of-function mutant that produces larger stationary photocurrents in comparison to the wild-type ChR2 sequence

Plasmid Name: pcDNA3.1/hChR2(H134R)-EYFP

Relevant Mutation: H134R mutation in ChR2

Record Creation Time: 20220422T222053+0000

Record Last Update: 20260808T081405+0000

Ratings and Alerts

No rating or validation information has been found for pcDNA3.1/hChR2(H134R)-EYFP.

No alerts have been found for pcDNA3.1/hChR2(H134R)-EYFP.

Data and Source Information

Source: Addgene

Usage and Citation Metrics

We found 16 mentions in open access literature.

Listed below are recent publications. The full list is available at NIF .

Maharwal N, et al. (2026) Light-Mediated Insulin and Amylin Secretion: Influence of Irradiation Parameters in Optogenetically Modified Mouse-Pancreatic ? Cells. Journal of biophotonics, 19(1), e202500232.

Köhler I, et al. (2025) Chemogenetic activation of Gq signaling modulates dendritic development of cortical neurons in a time- and layer-specific manner. Frontiers in cellular neuroscience, 19, 1524470.

Fereidounian MA, et al. (2025) Effects of optogenetic stimulation on neural gene expression in human bone marrow and adipose-derived mesenchymal stem cells. BMC biotechnology, 26(1), 4.

Song Q, et al. (2023) Opto-SICM framework combines optogenetics with scanning ion conductance microscopy for probing cell-to-cell contacts. Communications biology, 6(1), 1131.

Gonda S, et al. (2023) Axons of cortical basket cells originating from dendrites develop higher local complexity than axons emerging from basket cell somata. Development (Cambridge, England), 150(22).

Gonda S, et al. (2023) Optogenetic stimulation shapes dendritic trees of infragranular cortical pyramidal cells. Frontiers in cellular neuroscience, 17, 1212483.

Gheorghiu M, et al. (2020) Cellular sensing platform with enhanced sensitivity based on optogenetic modulation of cell homeostasis. Biosensors & bioelectronics, 154, 112003.

Keshmiri Neghab H, et al. (2019) Modulation of cardiac optogenetics by vitamin A. BioFactors (Oxford, England), 45(6), 983.

Quach B, et al. (2018) Light-Activated Dynamic Clamp Using iPSC-Derived Cardiomyocytes. Biophysical journal, 115(11), 2206.

Gioia DA, et al. (2018) Effects of drugs of abuse on channelrhodopsin-2 function. Neuropharmacology, 135, 316.

Yu J, et al. (2016) Inscribing Optical Excitability to Non-Excitable Cardiac Cells: Viral Delivery of Optogenetic Tools in Primary Cardiac Fibroblasts. Methods in molecular biology (Clifton, N.J.), 1408, 303.

Burton RA, et al. (2015) Optical control of excitation waves in cardiac tissue. Nature photonics, 9(12), 813.

Fuhrmann F, et al. (2015) Locomotion, Theta Oscillations, and the Speed-Correlated Firing of Hippocampal Neurons Are Controlled by a Medial Septal Glutamatergic Circuit. Neuron, 86(5), 1253.

Ambrosi CM, et al. (2015) Optogenetics-enabled assessment of viral gene and cell therapy for restoration of cardiac excitability. Scientific reports, 5, 17350.

Ambrosi CM, et al. (2014) Cardiac applications of optogenetics. Progress in biophysics and molecular biology, 115(2-3), 294.

Williams JC, et al. (2013) Computational optogenetics: empirically-derived voltage- and light-sensitive channelrhodopsin-2 model. PLoS computational biology, 9(9), e1003220.