

Resource Summary Report

Generated by [NIF](#) on Aug 2, 2026

pLenti-EF1a-hChR2(H134R)-EYFP-WPRE

RRID:Addgene_20942

Type: Plasmid

Proper Citation

RRID:Addgene_20942

Plasmid Information

URL: <http://www.addgene.org/20942>

Proper Citation: RRID:Addgene_20942

Insert Name: channelrhodopsin-2

Organism: C. reinhardtii

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:17410168](#)

Vector Backbone Description: Backbone Size:9000; Vector Backbone:pLenti-EF1a; Vector Types:Mammalian Expression, Lentiviral; Bacterial Resistance:Ampicillin

Comments: Please see <http://www.optogenetics.org> for additional information. The H134R mutation present in ChR2 sequence is a gain-of-function mutant that produces larger stationary photocurrents in comparison to the wild-type ChR2 sequence

Plasmid Name: pLenti-EF1a-hChR2(H134R)-EYFP-WPRE

Relevant Mutation: H134R mutation in ChR2

Record Creation Time: 20220422T222053+0000

Record Last Update: 20260801T081001+0000

Ratings and Alerts

No rating or validation information has been found for pLenti-EF1a-hChR2(H134R)-EYFP-WPRE.

No alerts have been found for pLenti-EF1a-hChR2(H134R)-EYFP-WPRE.

Data and Source Information

Source: [Addgene](#)

Usage and Citation Metrics

We found 11 mentions in open access literature.

Listed below are recent publications. The full list is available at [NIF](#) .

Fleming JW, et al. (2025) An automated platform for simultaneous, longitudinal analysis of engineered neuromuscular tissues for applications in neurotoxin potency testing. *Current research in toxicology*, 8, 100218.

Cho J, et al. (2025) Optogenetic calcium modulation in astrocytes enhances post-stroke recovery in chronic capsular infarct. *Science advances*, 11(5), eadn7577.

Cvetkovic C, et al. (2022) Assessing Gq-GPCR-induced human astrocyte reactivity using bioengineered neural organoids. *The Journal of cell biology*, 221(4).

Chen K, et al. (2022) Optogenetic Studies of Mitochondria. *Methods in molecular biology* (Clifton, N.J.), 2501, 311.

Vila OF, et al. (2021) Bioengineered optogenetic model of human neuromuscular junction. *Biomaterials*, 276, 121033.

van den Brink L, et al. (2021) The Linkage Phase of the Polymorphism KCNH2-K897T Influences the Electrophysiological Phenotype in hiPSC Models of LQT2. *Frontiers in physiology*, 12, 755642.

Tajima K, et al. (2020) Wireless optogenetics protects against obesity via stimulation of non-canonical fat thermogenesis. *Nature communications*, 11(1), 1730.

Ernst P, et al. (2019) Precisely Control Mitochondria with Light to Manipulate Cell Fate Decision. *Biophysical journal*, 117(4), 631.

Afshar Bakooshli M, et al. (2019) A 3D culture model of innervated human skeletal muscle enables studies of the adult neuromuscular junction. *eLife*, 8.

Vila OF, et al. (2019) Quantification of human neuromuscular function through optogenetics. *Theranostics*, 9(5), 1232.

Oh Y, et al. (2016) Functional Coupling with Cardiac Muscle Promotes Maturation of hPSC-Derived Sympathetic Neurons. *Cell stem cell*, 19(1), 95.