Resource Summary Report

Generated by NIF on Jul 31, 2026

pTriEx-mCherry-PA-Rac1

RRID:Addgene_22027
Type: Plasmid

Proper Citation

RRID:Addgene_22027

Plasmid Information

URL: http://www.addgene.org/22027

Proper Citation: RRID:Addgene_22027

Insert Name: PA-Rac1

Organism: Homo sapiens

Bacterial Resistance: Ampicillin

Defining Citation: PMID:19693014

Vector Backbone Description: Backbone Marker:Novagen; Backbone Size:6000; Vector Backbone:pTriEx; Vector Types:Mammalian Expression, Bacterial Expression, Insect Expression; Bacterial Resistance:Ampicillin

Comments: Protocols for production and use of Hahn lab biosensors and photoactivatable proteins can be found on their web page, at the URL below. If you have suggestions for the protocols or have any questions, please feel free to contact the Hahn lab. Good luck with your experiments! Hahn lab biosensor protocol: http://www.hahnlab.com/tools/index.html Please note, Addgene has not confirmed all the mutations associated with this construct. We suggest sequence verifying this plasmid upon receipt.

Plasmid Name: pTriEx-mCherry-PA-Rac1

Relevant Mutation: LOV(Leu404-Leu546), Rac1 starts at Ile4 and contains mutations Q61L, E91H and N92H

Record Creation Time: 20220422T222058+0000

Record Last Update: 20260725T074429+0000

Ratings and Alerts

No rating or validation information has been found for pTriEx-mCherry-PA-Rac1.

No alerts have been found for pTriEx-mCherry-PA-Rac1.

Data and Source Information

Source: Addgene

Usage and Citation Metrics

We found 22 mentions in open access literature.

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

Kim HJ, et al. (2025) GluN2B-mediated regulation of silent synapses for receptor specification and addiction memory. Experimental & molecular medicine, 57(2), 436.

Peng Y, et al. (2022) Non-muscle myosin II isoforms orchestrate substrate stiffness sensing to promote cancer cell contractility and migration. Cancer letters, 524, 245.

Costa JF, et al. (2022) Rac1 GTPase activation impairs fear conditioning-induced structural changes in basolateral amygdala neurons and long-term fear memory formation. Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology.

Arts JJ, et al. (2021) Endothelial junctional membrane protrusions serve as hotspots for neutrophil transmigration. eLife, 10.

Park EW, et al. (2021) A novel DENND1B-localized structure found at the basal side of adherent cells. Histochemistry and cell biology, 155(1), 9.

Fan XC, et al. (2021) Rac1 Signaling in Amygdala Astrocytes Regulates Fear Memory Acquisition and Retrieval. Neuroscience bulletin, 37(7), 947.

Harris JM, et al. (2020) Long-Range Optogenetic Control of Axon Guidance Overcomes Developmental Boundaries and Defects. Developmental cell, 53(5), 577.

Whitelaw JA, et al. (2020) The WAVE Regulatory Complex Is Required to Balance Protrusion and Adhesion in Migration. Cells, 9(7).

Hao H, et al. (2020) Golgi-associated microtubules are fast cargo tracks and required for persistent cell migration. EMBO reports, 21(3), e48385.

Klems A, et al. (2020) The GEF Trio controls endothelial cell size and arterial remodeling downstream of Vegf signaling in both zebrafish and cell models. Nature communications, 11(1), 5319.

Laufer JM, et al. (2019) Chemokine Receptor CCR7 Triggers an Endomembrane Signaling Complex for Spatial Rac Activation. Cell reports, 29(4), 995.

Yang JM, et al. (2018) Integrating chemical and mechanical signals through dynamic coupling between cellular protrusions and pulsed ERK activation. Nature communications, 9(1), 4673.

van Haren J, et al. (2018) Local control of intracellular microtubule dynamics by EB1 photodissociation. Nature cell biology, 20(3), 252.

Ikeda Y, et al. (2017) Rac1 switching at the right time and location is essential for Fc? receptor-mediated phagosome formation. Journal of cell science, 130(15), 2530.

Qudrat A, et al. (2017) LOV2-Controlled Photoactivation of Protein Trans-Splicing. Methods in molecular biology (Clifton, N.J.), 1495, 227.

Liao Z, et al. (2017) Fear Conditioning Downregulates Rac1 Activity in the Basolateral Amygdala Astrocytes to Facilitate the Formation of Fear Memory. Frontiers in molecular neuroscience, 10, 396.

He L, et al. (2015) Near-infrared photoactivatable control of Ca(2+) signaling and optogenetic immunomodulation. eLife, 4.

Wong S, et al. (2015) An Engineered Split Intein for Photoactivated Protein Trans-Splicing. PloS one, 10(8), e0135965.

Kato T, et al. (2014) Rac1-dependent lamellipodial motility in prostate cancer PC-3 cells revealed by optogenetic control of Rac1 activity. PloS one, 9(5), e97749.

Sakurai T, et al. (2014) Inter-cellular exchange of cellular components via VE-cadherin-dependent trans-endocytosis. PloS one, 9(6), e90736.