

Resource Summary Report

Generated by [SPARC SAWG](#) on Aug 9, 2026

pTriEx4-Rac1-2G

RRID:Addgene_66110

Type: Plasmid

Proper Citation

RRID:Addgene_66110

Plasmid Information

URL: <http://www.addgene.org/66110>

Proper Citation: RRID:Addgene_66110

Insert Name: Second generation Rac1 FRET biosensor

Organism: Synthetic

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:26439400](#)

Vector Backbone Description: Backbone Marker:Novagen; Backbone Size:4900; Vector Backbone:pTriEx4; Vector Types:Mammalian Expression, Bacterial Expression, Insect Expression; Bacterial Resistance:Ampicillin

Plasmid Name: pTriEx4-Rac1-2G

Record Creation Time: 20220422T222416+0000

Record Last Update: 20260808T082010+0000

Ratings and Alerts

No rating or validation information has been found for pTriEx4-Rac1-2G.

No alerts have been found for pTriEx4-Rac1-2G.

Data and Source Information

Source: [Addgene](#)

Usage and Citation Metrics

We found 18 mentions in open access literature.

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

Iu E, et al. (2026) A TRPV4-dependent calcium signaling axis regulates lamellipodial actin architecture to promote cell migration. *Current biology* : CB, 36(4), 995.

Zhang J, et al. (2024) Gain-of-Function KIDINS220 Variants Disrupt Neuronal Development and Cause Cerebral Palsy. *Movement disorders : official journal of the Movement Disorder Society*, 39(3), 498.

Harms J, et al. (2023) Pals1 functions in redundancy with SMAP1 to inhibit Arf6 in order to prevent Rac1-dependent colorectal cancer cell migration and invasion. *Cancer gene therapy*, 30(3), 497.

Koo TY, et al. (2023) N-Acryloylindole-alkyne (NAIA) enables imaging and profiling new ligandable cysteines and oxidized thiols by chemoproteomics. *Nature communications*, 14(1), 3564.

Müller PM, et al. (2022) A screening-compatible live cell fluorescence resonance energy transfer-based assay for modulation of Rho GTPase activity. *STAR protocols*, 3(4), 101705.

Hu J, et al. (2022) Local temporal Rac1-GTP nadirs and peaks restrict cell protrusions and retractions. *Science advances*, 8(12), eabl3667.

Pham H, et al. (2022) Förster resonance energy transfer biosensors for fluorescence and time-gated luminescence analysis of rac1 activity. *Scientific reports*, 12(1), 5291.

Anijs M, et al. (2022) ARHGEF39, a Gene Implicated in Developmental Language Disorder, Activates RHOA and Is Involved in Cell De-Adhesion and Neural Progenitor Cell Proliferation. *Frontiers in molecular neuroscience*, 15, 941494.

Yang JM, et al. (2021) Deciphering cell signaling networks with massively multiplexed biosensor barcoding. *Cell*, 184(25), 6193.

Yang M, et al. (2020) Voltage-dependent activation of Rac1 by Nav 1.5 channels promotes cell migration. *Journal of cellular physiology*, 235(4), 3950.

Keyes J, et al. (2020) Signaling diversity enabled by Rap1-regulated plasma membrane ERK with distinct temporal dynamics. *eLife*, 9.

Dagliyan O, et al. (2019) Engineering proteins for allosteric control by light or ligands. *Nature protocols*, 14(6), 1863.

Cheng HW, et al. (2019) Centrosome guides spatial activation of Rac to control cell polarization and directed cell migration. *Life science alliance*, 2(1).

Koubek EJ, et al. (2018) ARF1 and ARF6 regulate recycling of GRASP/Tamalin and the Rac1-GEF Dock180 during HGF-induced Rac1 activation. *Small GTPases*, 9(3), 242.

Tang K, et al. (2018) Paxillin phosphorylation at serine 273 and its effects on Rac, Rho and adhesion dynamics. PLoS computational biology, 14(7), e1006303.

Schulz J, et al. (2018) Methods to Study the Roles of Rho GTPases in Dendritic Tree Complexity. Methods in molecular biology (Clifton, N.J.), 1821, 297.

Sun T, et al. (2017) A reverse signaling pathway downstream of Sema4A controls cell migration via Scrib. The Journal of cell biology, 216(1), 199.

Schulz J, et al. (2016) Different roles of the small GTPases Rac1, Cdc42, and RhoG in CALEB/NGC-induced dendritic tree complexity. Journal of neurochemistry, 139(1), 26.