

Resource Summary Report

Generated by [RRID](#) on Aug 19, 2026

[pcDNA-4mtD3cpv](#)

RRID:Addgene_36324

Type: Plasmid

Proper Citation

RRID:Addgene_36324

Plasmid Information

URL: <http://www.addgene.org/36324>

Proper Citation: RRID:Addgene_36324

Insert Name: 4mtD3cpv second generation cameleon (calcium sensor) targeted to mitochondria

Organism: Synthetic

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:16720273](#)

Vector Backbone Description: Backbone Marker:Invitrogen; Backbone Size:5400; Vector Backbone:pcDNA3; Vector Types;; Bacterial Resistance:Ampicillin

Comments: Genetically encoded, ratiometric, calcium biosensor that contains enhanced CFP and circularly permuted Venus 173. D3cpv does not bind wild-type calmodulin. It has a Kd' of 0.6 uM. See also Palmer & Tsien (2006) Nature Protocols. The small discrepancy between the Addgene and depositor's sequence should not alter the function of the plasmid.

Plasmid Name: pcDNA-4mtD3cpv

Record Creation Time: 20220422T222154+0000

Record Last Update: 20260815T081407+0000

Ratings and Alerts

No rating or validation information has been found for pcDNA-4mtD3cpv.

No alerts have been found for pcDNA-4mtD3cpv.

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 [RRID](#) .

Bassot A, et al. (2026) ERO1a fosters glioblastoma aggressiveness and metabolic flexibility by regulating mitochondria-associated membrane dynamics. *Nature cell biology*, 28(7), 1496.

Dos Reis Araujo T, et al. (2025) Disruption of mitochondria-associated membranes contributes to the dysregulation of insulin secretion in undernutrition, obesity, and double burden of malnutrition. *Metabolism: clinical and experimental*, 173, 156393.

Bischof H, et al. (2024) mitoBKCa is functionally expressed in murine and human breast cancer cells and potentially contributes to metabolic reprogramming. *eLife*, 12.

Tessier N, et al. (2023) TRPV1 Channels Are New Players in the Reticulum-Mitochondria Ca²⁺ Coupling in a Rat Cardiomyoblast Cell Line. *Cells*, 12(18).

Gonnot F, et al. (2023) SERCA2 phosphorylation at serine 663 is a key regulator of Ca²⁺ homeostasis in heart diseases. *Nature communications*, 14(1), 3346.

Yang JF, et al. (2023) Mitochondria-ER contact mediated by MFN2-SERCA2 interaction supports CD8⁺ T cell metabolic fitness and function in tumors. *Science immunology*, 8(87), eabq2424.

Sharifi S, et al. (2023) Luminal H₂ O₂ promotes ER Ca²⁺ dysregulation and toxicity of palmitate in insulin-secreting INS-1E cells. *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*, 37(1), e22685.

Koshenov Z, et al. (2022) Citrin mediated metabolic rewiring in response to altered basal subcellular Ca²⁺ homeostasis. *Communications biology*, 5(1), 76.

Sargsyan Y, et al. (2021) Peroxisomes contribute to intracellular calcium dynamics in cardiomyocytes and non-excitable cells. *Life science alliance*, 4(9).

Rigotto G, et al. (2021) Effects of Mild Excitotoxic Stimulus on Mitochondria Ca²⁺ Handling in Hippocampal Cultures of a Mouse Model of Alzheimer's Disease. *Cells*, 10(8).

Zhang X, et al. (2019) Redox signals at the ER-mitochondria interface control melanoma progression. *The EMBO journal*, 38(15), e100871.

Dingreville F, et al. (2019) Differential Effect of Glucose on ER-Mitochondria Ca²⁺ Exchange Participates in Insulin Secretion and Glucotoxicity-Mediated Dysfunction of β -Cells. *Diabetes*, 68(9), 1778.

Di Mise A, et al. (2018) Activation of the Calcium-Sensing Receptor Corrects the Impaired Mitochondrial Energy Status Observed in Renal Polycystin-1 Knockdown Cells Modeling Autosomal Dominant Polycystic Kidney Disease. *Frontiers in molecular biosciences*, 5, 77.

Pascual-Caro C, et al. (2018) STIM1 deficiency is linked to Alzheimer's disease and triggers cell death in SH-SY5Y cells by upregulation of L-type voltage-operated Ca^{2+} entry. *Journal of molecular medicine (Berlin, Germany)*, 96(10), 1061.

Doczi J, et al. (2016) Alterations in voltage-sensing of the mitochondrial permeability transition pore in ANT1-deficient cells. *Scientific reports*, 6, 26700.

Aoyagi K, et al. (2016) VAMP7 Regulates Autophagy to Maintain Mitochondrial Homeostasis and to Control Insulin Secretion in Pancreatic β -Cells. *Diabetes*, 65(6), 1648.

Marcu R, et al. (2015) The mitochondrial permeability transition pore regulates endothelial bioenergetics and angiogenesis. *Circulation research*, 116(8), 1336.

Marcu R, et al. (2014) Mitochondrial matrix Ca^{2+} accumulation regulates cytosolic NAD⁺/NADH metabolism, protein acetylation, and sirtuin expression. *Molecular and cellular biology*, 34(15), 2890.