

Resource Summary Report

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

pHis17_ParM _1

RRID:Addgene_78201

Type: Plasmid

Proper Citation

RRID:Addgene_78201

Plasmid Information

URL: <http://www.addgene.org/78201>

Proper Citation: RRID:Addgene_78201

Insert Name: parM (K33A I27C T174A T175N C287A)

Organism: E. coli

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:19801632](#)

Vector Backbone Description: Vector Backbone:pHis17; Vector Types:Bacterial Expression; Bacterial Resistance:Ampicillin

Comments: The plasmid is used to express the plasmid segregation protein, ParM, from E. coli. The protein is modified for use as the scaffold of an ADP biosensor, MDCC-ParM. A single cysteine mutation is for label attachment (I27C); there is a mutation to inhibit filament formation (K33A), two mutations to weaken ATP binding (T174A and T175N), a mutation to change the exposed cysteine (C287A) and a C-terminal His6 tag to aid purification. When labelled with a single N-[2-(1-maleimidyl)ethyl]-7-diethylaminocoumarin-3-carboxamide (MDCC) fluorophore, this biosensor has a fluorescence intensity change of up to 4-fold and can be used to measure ADP in the range of tens of nanomolar to tens of micromolar in the presence of up to ~200 μ M ATP.

Plasmid Name: pHis17_ParM _1

Relevant Mutation: K33A I27C T174A T175N C287A

Record Creation Time: 20220422T222515+0000

Record Last Update: 20260815T082022+0000

Ratings and Alerts

No rating or validation information has been found for pHis17_ParM _1 .

No alerts have been found for pHis17_ParM _1 .

Data and Source Information

Source: [Addgene](#)

Usage and Citation Metrics

We found 5 mentions in open access literature.

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

Jazleena PJ, et al. (2025) Di-HAMP domains of a cytoplasmic chemoreceptor modulate nucleoid array formation and downstream signaling. *mBio*, 16(5), e0005725.

Chakraborty J, et al. (2024) Dynamics of interdomain rotation facilitates FtsZ filament assembly. *The Journal of biological chemistry*, 300(6), 107336.

Chakraborty S, et al. (2024) Mechanism of GTPase activation of a prokaryotic small Ras-like GTPase MglA by an asymmetrically interacting MglB dimer. *The Journal of biological chemistry*, 300(4), 107197.

Harne S, et al. (2022) Characterization of heterologously expressed Fibril, a shape and motility determining cytoskeletal protein of the helical bacterium *Spiroplasma*. *iScience*, 25(10), 105055.

Baranwal J, et al. (2019) Allosteric regulation of a prokaryotic small Ras-like GTPase contributes to cell polarity oscillations in bacterial motility. *PLoS biology*, 17(9), e3000459.