

Resource Summary Report

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

pET21b-LOV-ipaA

RRID:Addgene_40236

Type: Plasmid

Proper Citation

RRID:Addgene_40236

Plasmid Information

URL: <http://www.addgene.org/40236>

Proper Citation: RRID:Addgene_40236

Insert Name: LOV-ipaA

Organism: Synthetic

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:22520757](#)

Vector Backbone Description: Backbone Marker:EMD Biosciences; Backbone Size:5442; Vector Backbone:pET-21b(+); Vector Types:Bacterial Expression; Bacterial Resistance:Ampicillin

Comments: This vector encodes a photo-activable caged form of the vinculin binding ipaA peptide. Regarding the hybridized region, the first ten residues of the ipaA VBS1 helical peptide were identified as a close match to the last ten residues of the AsLOV2 J? helix; five of the ten positions are identical, and the hydrophobic residues on the J? helix that make critical contacts with the AsLOV2 domain beta-sheet at residues 539, 542, and 543 are conserved in the alignment with ipaA. Additionally, residues in the ipaA sequence that make extensive contacts with vinculin are conserved in the alignment (Ile 612, Ala 615, Ala 616, and Val 619 in ipaA). Side-chain optimization simulations were used to thread the first ten residues of ipaA onto the last ten residues of the J? helix. The 540 position on the J? helix was converted to isoleucine. The LOV-ipaA gene was synthesized with a six histidine N-terminal tag (Genscript, Piscataway, NJ, USA) and cloned into the pET21b vector. Protein coding sequence of LOV-ipaA:
MHSHHHHGSLATTLERIEKNFVITDPRLPDNPIIFASDSFLQLTEYSREEILGRNCRFLQGPETDRATV

Plasmid Name: pET21b-LOV-ipaA

Relevant Mutation: J? helix region hybridized (AsLOV2 aa 537-546/ipaA aa 610-619), residue 540 changed to isoleucine

Record Creation Time: 20220422T222209+0000

Record Last Update: 20260815T081434+0000

Ratings and Alerts

No rating or validation information has been found for pET21b-LOV-ipaA.

No alerts have been found for pET21b-LOV-ipaA.

Data and Source Information

Source: [Addgene](#)

Usage and Citation Metrics

We found 1 mentions in open access literature.

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

Nzigou Mombo B, et al. (2023) Reversible photoregulation of cell-cell adhesions with opto-E-cadherin. Nature communications, 14(1), 6292.