

Resource Summary Report

Generated by [NIF](#) on Jul 28, 2026

pCS2+MT-hToca-1-W518K

RRID:Addgene_33031

Type: Plasmid

Proper Citation

RRID:Addgene_33031

Plasmid Information

URL: <http://www.addgene.org/33031>

Proper Citation: RRID:Addgene_33031

Insert Name: Toca-1

Organism: Homo sapiens

Bacterial Resistance: Ampicillin

Defining Citation: [PMID:15260990](#)

Vector Backbone Description: Backbone Size:4350; Vector Backbone:pCS2+MT; Vector Types:Mammalian Expression; Bacterial Resistance:Ampicillin

Comments: Molecular cloning of Toca-1 was difficult, because the cDNA encoding human Toca-1 is lethal to E. coli. The toxicity problem was not resolved by using vectors with low copy numbers or with minimal transcriptional activity, suggesting that the source of toxicity was not the translated protein product but rather the DNA sequence itself. The toxic region of the Toca-1 cDNA was localized to codon 127. The *Xenopus tropicalis* homolog of Toca-1 is completely nontoxic when cloned using E. coli and is identical in amino acid sequence to human Toca-1 between amino acids 124 and 127, but these amino acids are encoded by different codons. Replacing codons 126 and 127 in the human Toca-1 with the X. Tropicalis sequence (which constitute silent mutations) completely ameliorated the toxicity problem and allowed us to propagate the human Toca-1 clone in E. coli without difficulty.

Plasmid Name: pCS2+MT-hToca-1-W518K

Relevant Mutation: W518K

Record Creation Time: 20220422T222143+0000

Record Last Update: 20260725T074555+0000

Ratings and Alerts

No rating or validation information has been found for pCS2+MT-hToca-1-W518K.

No alerts have been found for pCS2+MT-hToca-1-W518K.

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 [NIF](#) .

McCullough A, et al. (2025) Chlamydia trachomatis TmeA promotes pedestal-like structure formation through N-WASP and TOCA-1 interactions. mSphere, 10(5), e0010125.