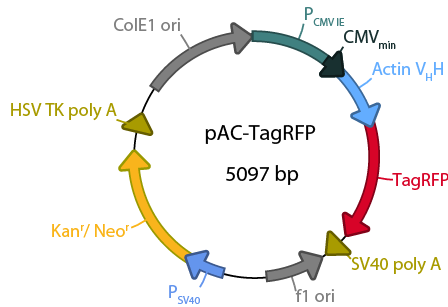


Actin Chromobody®-TagRFP plasmid

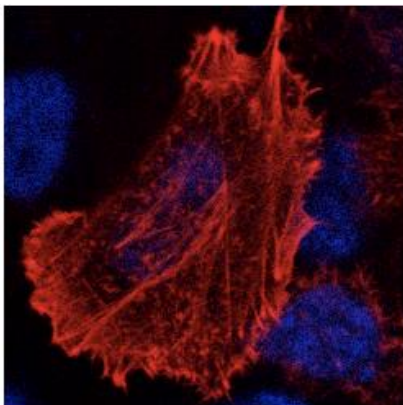
The vector sequence has been compiled using the information from sequence databases, published literature, and other sources, together with partial sequences obtained by ChromoTek. This vector has not been completely sequenced.



For plasmid sequence, please contact info@chromotek.com

Location of features

PCMV IE: 1-589
 Enhancer region: 59-465
 TATA box: 554-560
 Transcription start point: 583
 Actin-VHH: 621-986
 TagRFP: 1050-1763
 Stop codon: 1761-1763
 SV40 early mRNA polyadenylation signal
 Polyadenylation signals: 1919-1924 & 1948-1953
 mRNA 3' ends: 1957 & 1969
 f1 single-strand DNA origin: 2016-2471
 SV40 origin of replication: 2812-2947
 SV40 early promoter Enhancer (72-bp tandem repeats): 2648-2719 & 2720-2791
 21-bp repeats: 2795-2815, 2816-2836 & 2838-2858
 Early promoter element: 2871-2877
 Kanamycin/neomycin resistance gene
 Neomycin phosphotransferase coding sequences:
 Start codon (ATG): 2999-3001; Stop codon: 3791-3793
 Herpes simplex virus (HSV) thymidine kinase (TK) polyadenylation signal
 Polyadenylation signals: 4029-4034 & 4042-4047
 ColE1 replication origin: 4325-5007



Notice to Purchaser:

Chromobody®-related materials (the Products) are intended for research use only. The Products are covered by U.S. Pat. applications pending. By use of these Products, you accept the terms and conditions of the applicable End User License Agreement (EULA non-profit entities). The CMV promoter is covered under U.S. Patents 5,168,062 and 5,385,839, and its use is permitted for research purposes only. Any other use of the CMV promoter requires a license from the University of Iowa Research Foundation, 214 Technology Innovation Center, Iowa City, IA 52242.

MATERIAL SAFETY DATA SHEET INFORMATION: To the best of our knowledge, these products do not require a Material Safety Data Sheet. However, all the properties of these products (and, if applicable, each of their components) have not been thoroughly investigated. Therefore, we recommend that you use gloves and eye protection, and wear a laboratory coat when working with these products.

Product	Code	Size
pAC-TagRFP	acr	20 µg

Vector type	mammalian expression vector
Reporter	TagRFP
Reporter codon usage	mammalian
Promoter for Chromobody®	P _{CMV IE}
Host cells	mammalian
Selection	prokaryotic - kanamycin eukaryotic - neomycin (G418)
Replication	prokaryotic - pUC ori eukaryotic - SV40 ori
Use	Actin Chromobody®-TagRFP expression in mammalian cells for non-invasive live cell visualization of endogenous cytoskeleton.

Vector description

Actin Chromobody®-TagRFP plasmid (pAC-TagRFP) is a mammalian expression vector encoding the cytoskeleton marker Actin-V_HH fused to red fluorescent protein TagRFP (from Evrogen). The vector allows expression Actin Chromobody®-TagRFP fusion protein in eukaryotic (mammalian) cells.

Chromobody® codon usage is optimized for high expression in mammalian cells (humanized) [Haas et al. 1996].

The vector backbone contains immediate early promoter of cytomegalovirus (P_{CMV IE}) for protein expression, SV40 origin for replication in mammalian cells expressing SV40 T-antigen, ColE1 origin of replication for propagation in *E. coli* and f1 origin for single-stranded DNA production. SV40 polyadenylation signals (SV40 poly A) direct proper processing of the 3'-end of the reporter mRNA.

SV40 early promoter (P_{SV40}) provides neomycin resistance gene (Neo^r) expression to select stably transfected eukaryotic cells using G418. Bacterial promoter (P) provides kanamycin resistance gene expression (Kan^r) in *E. coli*. Kan^r/Neo^r gene is linked with herpes simplex virus (HSV) thymidine kinase (TK) polyadenylation signals.

Expression in mammalian cells

pAC-TagRFP vector can be transfected into mammalian cells by any known transfection method. If required, stable transformants can be selected using G418 [Gorman 1985].

Propagation in *E. coli*

Suitable host strains for propagation in *E. coli* include DH5alpha, HB101, XL1-Blue, and other general purpose strains. Plasmid incompatibility group is pMB1/ColE1. The vector confers resistance to kanamycin (30 µg/ml) to *E. coli* hosts. Copy number in *E. coli* is about 500.

Note: The plasmid DNA was isolated from dam⁺-methylated *E. coli*. Therefore some restriction sites are blocked by methylation. If you wish to digest the vector using such sites you will need to transform the vector into a dam⁻ host and make fresh DNA.