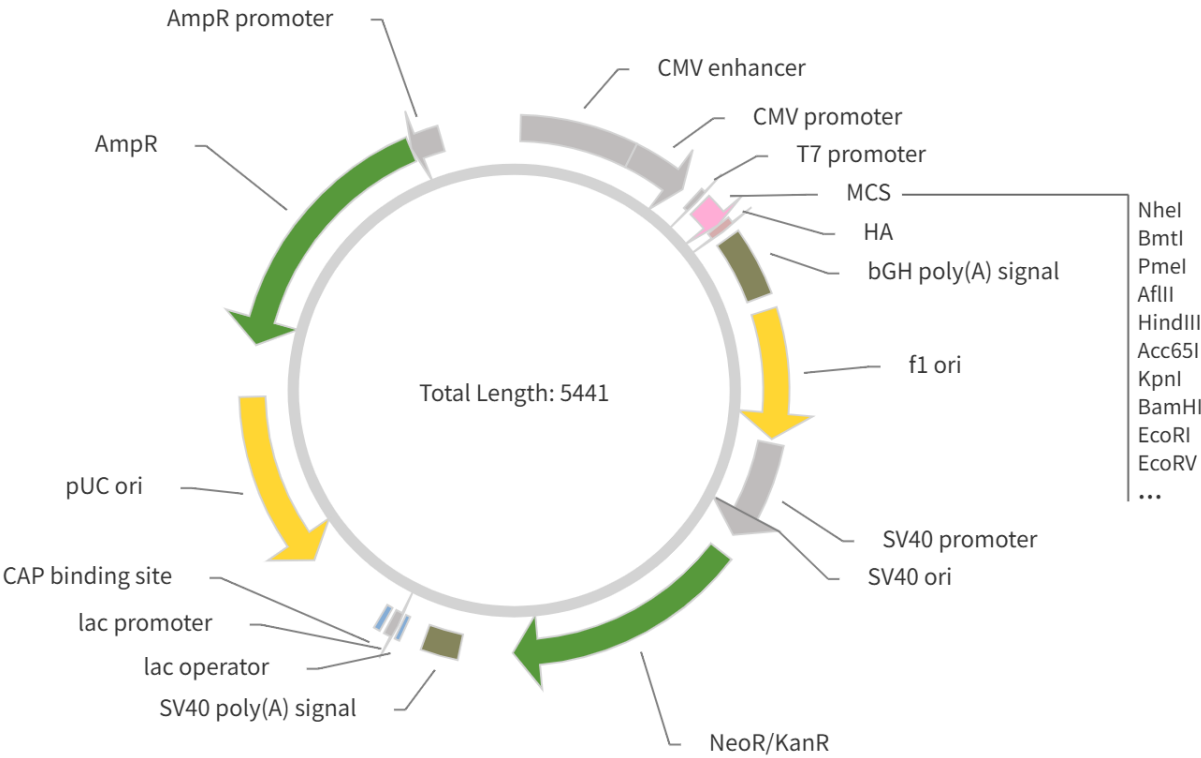


VECTOR DETAILS

Vector ID	10
Vector name	pcDNA3.1(+)-C-HA
Vector Type	Mammalian
Selection marker (eukaryotic)	Neomycin
Bacterial Resistance(s)	Ampicillin
ORI	pUC/pBR322/pMB1
Promoter1	CMV promoter
Promoter2	T7 promoter
C-tag	HA
Reference1	Yu, T., Hou, D., Zhao, J., Lu, X., Greentree, W. K., Zhao, Q., Yang, M., Conde, D.-G., Linder, M. E., & Lin, H. (2024). NLRP3 Cys126 palmitoylation by ZDHHC7 promotes inflammasome activation. <i>Cell Reports</i> , 43(4). https://doi.org/10.1016/j.celrep.2024.114070
Reference2	Acosta, J., Li, Q., Freeburg, N. F., Murali, N., Indeglia, A., Grothusen, G. P., Cicchini, M., Mai, H., Gladstein, A. C., Adler, K. M., Doerig, K. R., Li, J., Ruiz-Torres, M., Manning, K. L., Stanger, B. Z., Busino, L., Murphy, M., Wan, L., & Feldser, D. M. (2023). P53 restoration in small cell lung cancer identifies a latent cyclophilin-dependent necrosis mechanism. <i>Nature Communications</i> , 14(1), 4403. https://doi.org/10.1038/s41467-023-40161-9
Reference3	Elmore, Z. C., Patrick Havlik, L., Oh, D. K., Anderson, L., Daaboul, G., Devlin, G. W., Vincent, H. A., & Asokan, A. (2021). The membrane associated accessory protein is an adeno-associated viral egress factor. <i>Nature Communications</i> , 12, 6239. https://doi.org/10.1038/s41467-021-26485-4
ORI	pUC/pBR322/pMB1
Copy number	High
Bacterial Resistance	Ampicillin
Description	It is designed for high-level transient and stable protein expression in mammalian cells driven by a CMV promoter. This vector contains a C-terminal HA tag for recombinant protein detection and purification. The vector contains a neomycin resistance gene for selection of stable cell lines and an SV40 origin for episomal replication in cells expressing the SV40 large T antigen.

pcDNA3.1(+)-C-HA VECTOR MAPS

Vector Name: pcDNA3.1(+)-C-HA



NheI BmtI PmeI HindIII Acc65I KpnI BamHI EcoRI EcoRV BstXI NotI XhoI XbaI PspOMI ApaI

GCTAGCGTTTAACTTAAGCTTGGTACCGAGCTCGGATCCGAATTCCTGCAGATATCCAGCACAGTGGCGGCCGCTCGAGCTAGAGGGCC
CGATCGCAAAATTTGAATTCGAACCATGGCTCGAGCCTAGGCTTAAGACGCTCTATAGGTCGTGTACCGCCGGCGAGCTCAGATCTCCCGG

MCS

C
G

VECTOR SEQUENCE

1 ACGGGCCAGA TATACGCGTT GACATTGATT ATTGACTAGT TATTAATAGT AATCAATTAC GGGGTCATTA GTTCATAGCC CATATATGGA GTTCCGCGTT
100 ACATAACTTA CGGTAAATGG CCCGCCTGGC TGACCGCCCA ACGACCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
200 CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC AAGTGTATCA TATGCCAAGT ACGCCCCCTA TTGACGTCAA
300 TGACGGTAAA TGCCCCGCCT GGCATTATGC CAGTACATG ACCTTATGGG ACTTTCCTAC TTGGCAGTAC ATCTACGTAT TAGTCATCGC TATTACCATG
400 GTGATGCGGT TTTGGCAGTA CATCAATGGG CGTGGATAGC GGTTTGACTC ACGGGGATTT CCAAGTCTCC ACCCCATTGA CGTCAATGGG AGTTTGTTTT
500 GGCACCAAAA TCAACGGGAC TTTCCAAAAT GTCGTAACAA CTCCGCCCA TTGACGCAAA TGGGCGGTAG GCGTGTACGG TGGGAGGTCT ATATAAGCAG
600 AGCTCTCTGG CTAAGTAGAG AACCCACTGC TTAAGTGGCT ATCGAAATTA ATACGACTCA CTATAGGGAG ACCCAAGCTG GCTAGCGTTT AAACCTAAGC
700 TTGGTACCGA GCTCGGATCC GAATTCCTGCA GATATCCAGC ACAGTGCGGG CCGCTCGAGT CTAGAGGGCC CTACCCATAC GATGTTCCAG ATTACGCTTG
800 ATAAACCCGC TGATCAGCCT CGACTGTGCC TTCTAGTTGC CAGCCATCTG TTGTTTGGCC CTCCCCGTG CCTTCCTTGA CCCTGGAAGG TGCCACTCCC

900 ACTGTCCTTT CCTAATAAAA TGAGGAAATT GCATCGCATT GTCTGAGTAG GTGTCTATTCT ATTCTGGGGG GTGGGGTGGG GCAGGACAGC AAGGGGGAGG
1000 ATTTGGGAAGA CAATAGCAGG CATGCTGGGG ATGCGGTGGG CTCTATGGCT TCTGAGGCGG AAAGAACCAG CTGGGGCTCT AGGGGGTATC CCCACGCGCC
1100 CTGTAGCGGC GCATTAAGCG CGGCGGGTGT GGTGGTTACG CGCAGCGTGA CCGCTACACT TGCCAGCGCC CTAGCGCCCG CTCCTTTCGC TTTCTTCCCT
1200 TCCTTTCTCG CCACGTTTCG CGGCTTTCCC CGTCAAGCTC TAAATCGGGG GCTCCCTTTA GGGTTCCGAT TTAGTGCTTT ACGGCACCTC GACCCCAAAA
1300 AACTTGATTA GGGTGATGGT TCACGTAGTG GGCATCGGCC CTGATAGACG GTTTTTCGCC CTTTGACGTT GGAGTCCACG TTCTTTAATA GTGGACTCTT
1400 GTTCCAAACT GGAACAACAC TCAACCCAT CTGCGTCTAT TCTTTTGATT TATAAGGGAT TTTGCCGATT TCGGCTATT GGTAAAAAA TGAGCTGATT
1500 TAACAAAAAT TTAACGCGAA TTAATTCTGT GGAATGTGTG TCAGTTAGGG TGTGGAAGT CCCAGGCTC CCCAGCAGG AGAAGTATGC AAAGCATGCA
1600 TCTCAATTAG TCAGCAACCA GGTGTGGAAG GTCCCCAGG TCCCCAGCAG GCAGAAGTAT GCAAAGCATG CATCTCAATT AGTCAGCAAC CATAGTCCCG
1700 CCCCTAACTC CGCCCATCCC GCCCTAACT CGCCCAAGT CGCCCATTC TCCGCCCAT GGTGACTAA TTTTTTTTAT TTATGCAGAG GCCGAGGCCG
1800 CCTCTGCCTC TGAGCTATT CAGAAGTAGT GAGGAGGCTT TTTTGGAGGC CTAGGCTTTT GCAAAAAGCT CCCGGGAGCT TGTATATCCA TTTTCGGATC
1900 TGATCAAGAG ACAGGATGAG GATCGTTTCG CATGATTGAA CAAGATGGAT TGCACGCAGG TTCTCCGGCC GCTTGGGTGG AGAGGCTATT CGGCTATGAC
2000 TGGGCACAAC AGACAATCG CTGCTCTGAT GCCGCCGTGT TCCGGCTGTC AGCGCAGGGG CGCCCGGTTT TTTTGTCAA GACCGACCTG TCCGGTGCCC
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2200 CTGGCTGCTA TTGGGCGAAG TGCCGGGGCA GGATCTCTG TCATCTCACC TTGCTCCTGC CGAGAAAGTA TCCATCATGG CTGATGCAAT GCGGCGGGTG
2300 CATACGCTTG ATCCGGCTAC CTGCCCATTC GACCACCAAG GAAACATCG CATCGAGCGA GCACGTACTC GGATGGAAAG CGGTCTTGTC GATCAGGATG
2400 ATCTGGACGA AGAGCATCAG GGGCTCGCGC CAGCCGAACT GTTCGCCAGG CTCAAGGCGC GCATGCCCGA CGGCGAGGAT CTGCTCGTGA CCCATGGCGA
2500 TGCTGCTTG CCGAATATCA TGGTGGAAAA TGCCGCTTT TCTGGATTCA TCGACTGTGG CCGGCTGGGT GTGGCGGACC GCTATCAGGA CATAAGCTTG
2600 GCTACCGGTG ATATTGCTGA AGAGCTTGGC GCGAATGGG CTGACCGCTT CCTCGTGTCT TACGGTATCG CCGCTCCCGA TTCGACGCGC ATCGCCTTCT
2700 ATCGCCTTCT TGACGAGTTC TTCTGAGCGG GACTCTGGGG TTGAAATGA CCGACCAAGC GACGCCAAC CTGCCATCAC GAGATTTCTGA TTCCACCGCC
2800 GCCTTCTATG AAAGGTTGGG CTTGCGAATC GTTTTCCGGG ACGCCGGCTG GATGATCCTC CAGCGCGGGG ATCTCATGCT GAGATTCTTC GCCACCCCA
2900 ACTTGTTTAT TGCAGCTTAT AATGGTTACA AATAAAGCAA TAGCATCACA AATTTACAA ATAAAGCATT TTTTCACTG CATTCTAGTT GTGGTTTGTG
3000 CAAACTCATC AATGTATCTT ATCATGTCTG TATACCGTCG ACCTCTAGCT AGAGCTTGGC GTAATCATGG TCATAGCTGT TTCTGTGTG AAATTGTTAT
3100 CCGCTCACA TCCACACAA CATACGAGCC GGAAGCATAA AGTGATAAGC CTGGGGTGCC TAATGAGTGA GCTAACTCAC ATTAATTGCG TTGCGCTCAC
3200 TGCCCGCTTT CAGTCGCGG AACTGTCTGT GCCAGCTGCA TTAATGAATC GGCCAACGCG CGGGGAGAGG CGGTTTGCCT ATTGGGCGCT CTTCCGCTTC
3300 CTCGCTCACT GACTCGCTGC GCTCGGTCTG TCGGCTGCGG CGAGCGGTAT CAGCTCACTC AAAGGCGGTA ATACGGTTAT CCACAGAATC AGGGGATAAC
3400 GCAGGAAAGA ACATGTGAGC AAAAGGCCAG CAAAAGGCCA GGAACCGTAA AAAGGCCGCG TTGCTGCGCT TTTTCCATAG GCTCCGCCCC CCGTACGAGC
3500 ATCACAAAAA TCGACGCTCA AGTCAGAGGT GGCAGAACCC GACAGGACTA TAAAGATACC AGGCGTTTCC CCTGGAAAGC TCCCTCGTGC GCTCTCCTGT
3600 TCCGACCTTG CCGCTTACCG GATACCTGTC CCGCTTTCTC CCTTCGGGAA GCGTGCGGCT TTCTCATAAG TCACGCTGTA GGTATCTCAG TTCGGTGTAG
3700 GTCGTTGCT CCAAGCTGGG CTGTGTGCAC GAACCCCCCG TTCAGCCCGA CCGCTGCGCC TTATCCGGTA ACTATCGTCT TGAGTCCAAC CGGTAAGAC
3800 ACGACTTATC GCCACTGGCA GCAGCCACTG GTAACAGGAT TAGCAGAGCG AGGTATGTAG GCGGTGCTAC AGAGTTCTTG AAGTGGTGGC CTAACACGG
3900 CTACACTAGA AGAACAGTAT TTGGTATCTG CGCTCTGCTG AAGCCAGTTA CCTTCGGAAA AAGAGTTGGT AGCTCTTGAT CCGGCAACAA AACCACCGCT
4000 GGTAGCGGTG GTTTTTTTGT TTGCAAGCAG CAGATTACGC GCAGAAAAAA AGGATCTCAA GAAGATCCTT TGATCTTTTC TACGGGGTCT GACGCTCAGT
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4400 CAGCAATAAA CCAGCCAGCC GGAAGGGCCG AGCGCAGAAAG TGGTCTGCA ACTTTATCCG CCTCCATCCA GTCTATTAAT TGTGCGGGG AAGCTAGAGT
4500 AAGTAGTTTC CAGTTAATA GTTTGCGCAA CGTTGTTGCC ATTGCTACAG GCATCGTGGT GTCACGCTCG TCGTTTGGTA TGCTTCATT CAGCTCCGGT
4600 TCCCAACGAT CAAGGCGAGT TACATGATCC CCCATGTTGT GCAAAAAGC GGTAGCTCC TTCGGTCTC CGATCGTTGT CAGAAGTAAG TTGGCCGACG
4700 TGTATCACT CATGGTTATG GCAGCACTGC ATAATTCTCT TACTGTCTAT CCATCCGTAA GATGCTTTTC TGTGACTGGT GAGTACTCAA CCAAGTCATT
4800 CTGAGAATAG TGTATGCGGC GACCGAGTTG CTCTTGCCCG GCGTCAATAC GGGATAATAC CGCGCCACAT AGCAGAACTT TAAAGTGCT CATCATTGGA
4900 AAACGTTCTT CGGGGCGAAA ACTCTCAAGG ATCTTACCGC TGTGAGATC CAGTTCGATG TAACCCACTC GTGCACCCAA CTGATCTTCA GCATCTTTA
5000 CTTTCACCAG CGTTTCTGGG TGAGCAAAAA CAGGAAGGCA AAATGCCGCA AAAAAGGGAA TAAGGGCGAC ACGGAATGT TGAATACTCA TACTCTTCT
5100 TTTTCAATAT TATTGAAGCA TTTATCAGGG TTATTGTCTC ATGAGCGGAT ACATATTTGA ATGTATTTAG AAAAATAAAC AAATAGGGGT TCCGCGACA
5200 TTTCCCCGAA AAGTGCCACC TGACGTCGAC GGATCGGGAG ATCTCCCGAT CCCCTATGGT GCACTCTCAG TACAATCTGC TGTGATGCCG CATAGTTAAG
5300 CCAATATCTG CTCCCTGCTT GTGTGTTGGA GGTGCTGAG TAGTGCGCGA GCAAAATTTA AGCTACAACA AGGCAAGGCT TGACCGACAA TTGCATGAAG
5400 AATCTGCTTA GGGTTAGGCG TTTTGCCTG CTTGCGCATG T

BASIC INFORMATION

Vector Name	Vector Type	Vector Size	Bacterial Resistance
pcDNA3.1(+)-C-HA	Mammalian	5441	Ampicillin

Vector Key Elements/Components

Name	Position	Size(bp)	Type	Description
CMV enhancer	● 21-400	380	Enhancer	The CMV immediate-early enhancer, from human cytomegalovirus (HCMV), is a potent regulatory element widely used to drive high levels of gene expression in mammalian systems. It is often paired with the CMV promoter and is extensively used in gene expression studies in mammalian cells.
CMV promoter	● 401-604	204	Promoter	The CMV promoter is derived from the immediate-early (IE) gene of the human cytomegalovirus (HCMV). It is one of the most commonly used strong, constitutive promoters in mammalian expression systems.
T7 promoter	● 649-667	19	Promoter	The T7 promoter is recognized by T7 RNA polymerase, a bacteriophage T7-encoded enzyme that transcribes DNA into RNA.
MCS	● 681-771	91	misc_feature	multiple cloning site
HA	● 772-798	27	Epitope tag	A nine-amino acid sequence derived from the influenza hemagglutinin protein (YPYDVPDYA). It can be used for protein detection and purification.
Stop1	● 799-801	3	misc_feature	
bGH poly(A) signal	● 824-1048	225	polyA_signal	The bGH polyA signal, derived from the 3' untranslated region (UTR) of the bovine growth hormone (bGH) gene, is used to terminate transcription and add a polyadenylate (polyA) tail to the mRNA. The polyA tail is essential for mRNA stability, nuclear export, and efficient translation.
f1 ori	● 1094-1522	429	rep_origin	The f1 origin of replication (f1 ori) is a specific type of origin used in phagemid vectors, which are plasmids that contain a single-stranded DNA (ssDNA) origin derived from filamentous bacteriophages such as M13, f1, or fd. Phagemid vectors are designed to replicate as double-stranded plasmids under normal conditions but can be induced to produce single-stranded DNA in the

Name	Position	Size(bp)	Type	Description
				presence of a helper phage. This dual functionality makes f1 ori extremely valuable in molecular cloning, sequencing, and mutagenesis. The (+) strand is synthesized in the direction of the arrow.
SV40 promoter	● 1536-1865	330	Promoter	The SV40 (Simian Virus 40) promoter includes the SV40 enhancer, early promoter region, and origin of replication to enable high-level expression and replication in cell lines that contain the SV40 large T-antigen, such as COS-7 and 293T cells.
SV40 ori	● 1716-1851	136	rep_origin	SV40 (Simian Virus 40) origin of replication
NeoR/KanR	● 1932-2726	795	selection marker	It encodes aminoglycoside phosphotransferase, conferring resistance to neomycin, kanamycin (in bacteria), and G418 (in mammalian cells).
SV40 poly(A) signal	● 2900-3021	122	polyA_signal	The SV40 polyA signal, derived from the 3' UTR of the simian virus 40 (SV40) early region, is used to terminate transcription and add a polyadenylate (polyA) tail to the mRNA.
lac operator	● 3094-3110	17	cis-regulatory element	The binding of lac repressor (encoded by lacI) to the operator inhibits the transcription in E. coli. Lactose or IPTG (isopropyl-beta-D-thiogalactopyranoside) can relieve the inhibition and induce the transcription.
lac promoter	● 3118-3148	31	Promoter	Promoter of the lac operon in E. coli
CAP binding site	● 3163-3184	22	cis-regulatory element	E. coli catabolite activator protein (CAP) binding can activate transcription in the presence of cAMP.
pUC ori	● 3472-4060	589	rep_origin	High-copy-number origin of replication. The pUC origin is derived from the ColE1 plasmid.
AmpR	● 4231-5091	861	selection marker	It encodes for beta-lactamase, conferring resistance to ampicillin and related antibiotics.
AmpR promoter	● 5092-5196	105	Promoter	Promoter for ampicillin resistance gene

