Resource Summary Report

Generated by RRID on Aug 18, 2026

pComb3XSS

RRID:Addgene_63890
Type: Plasmid

Proper Citation

RRID:Addgene_63890

Plasmid Information

URL: http://www.addgene.org/63890

Proper Citation: RRID:Addgene_63890

Insert Name: SS Stuffer

Organism: Synthetic

Bacterial Resistance: Ampicillin

Defining Citation: PMID:10986398

Vector Backbone Description: Backbone Size:3300; Vector Backbone:pComb3H; Vector Types:Bacterial Expression, phage display; Bacterial Resistance:Ampicillin

Comments: pComb3X is the newest of the pComb vectors. Improvements over pComb3 include increased stability and introduction of an asymmetric SfiI cassette for directional cloning of full Fab, scFv, peptide and other protein for phage display. 6xHis and HA tags allow for purification and detection. An amber stop codon was introduced to turn-off expression of the pIII fusion protein by switching to a non-supressor strain of E. coli allowing production of soluble protein without subcloning. Alternatively, the gene for phage protein pIII can be removed by SpeI/NheI digest. pComb3XSS is recommended for preparation of vector for library cloning. The “SS” refers to the double stuffer, a 1200bp stuffer in the Fab light chain cloning region bounded by SacI and XbaI restriction sites and a 300bp stuffer in Fab heavy chain cloning region bound by XhoI and SpeI restriction sites. Also, the 1600bp double stuffer (both stuffers plus the leader sequence between the Fab light chain and heavy chain cloning regions) can be removed by SfiI digest so that non-Fab genes of interest can be cloned. Also available on Addgene: pComb3XTT and pComb3XLambda are only needed at templates for the construction of chimeric Fab libraries as described in Phage Display: A Laboratory Manual. pComb3XTT can also be used as an Fab expression control. Select References: Barbas, C. F., III; Burton, D. R.; Scott, J.K., Silverman, G.J. Eds. (2001) Phage Display: A Laboratory Manual; Cold Spring Harbor Laboratory Press: Cold Spring Harbor, New York Rader, C; Popkov, M.; Neves,

J.A.; Barbas III, C.F. (2002) Integrin _v_3 Targeted Therapy of Kaposi's Sarcoma with an In Vitro Evolved Antibody. FASEB, 16(14):2000-2. Berry, J.D.; Rutherford, J.; Silverman, G.J.; Kaul, R.; Elia, M.; Gobuty, S.; Fuller, R.; Plummer, F.A.; & Barbas III, C.F. (2003) Development of Functional Human Monoclonal Single-Chain Variable Fragment Antibody Against HIV-1 From Human Cervical B cells. Hybridoma and Hybridomics, 22(2):, 97-108. Jendreyko N, Popkov M, Beerli RR, Chung J, McGavern DB, Rader C, Barbas CF 3rd. (2003) Intra-diabodies: Bispecific, tetravalent antibodies for the simultaneous functional knockout of two cell surface receptors. J Biol Chem., 278(48):, 47812-9. Steinberger, P.; Sutton, J.K.; Rader, C.; Elia, M.; and Barbas III, C. F. (2000) Generation and Characterization of a Recombinant Human CCR5-specific Antibody: A Phage Display Approach for Rabbit Antibody Humanization. J. Biol. Chem., 275,, 36073-36078. Goncalves, J.; Kilva, F.; Freitas-Vieira, A.; Santa-Marta, M.; Malho, R.; Yang, X.; Gabuzda, D.; and Barbas III, C.F. (2002) Functional Neutralization of HIV-1 Vif Protein by Intracellular Immunization Inhibits Reverse Transcription and Viral Replication. J. Biol. Chem., 277(35):32036-45. Popkov, M.; Mage, R.G.; Alexander, C.B.; Thundivalappil, S.; Barbas III, C.F.; Rader, C. (2003) Rabbit immune repertoires as sources for therapeutic monoclonal antibodies: The impact of Kappa Allotype-correlated variation in cysteine content on antibody libraries selected by phage display. J. Mol. Biol., 325:325-335. Chung, J.; Rader, C.; Popkov, M.; Hur, Y.-M.; Kim, H.-K.; Lee, Y.-J.; & Barbas III, C. F. (2004) Integrin _IIb_3 specific synthetic human monoclonal antibodies and HCDR3 peptides that potently inhibit platelet aggregation,FASEB 18(2):361-3. Popkov, M.; Jendreyko, N.; Gonzalez-Sapienza, G.; Mage, R.G.; Rader, C.; Barbas III, C.F. (2004) Human/mouse cross-reactive anti-VEGF receptor 2 recombinant antibodies selected from animmune b9 allotype rabbit antibody library, J. Immunol. Methods, 288(1-2):149-164. Popkov, M.; Rader, C.; Barbas III, C.F. (2004) Isolation of human prostate cancer reactive antibodies using phage display technology, J. Immunol. Methods, 291:137-151. Tanaka, F.; Fuller, R.; Barbas III, C.F. (2005) Development of Small Designer Aldolase Enzymes: Catalytic Activity, Folding, and Substrate Specificity. Biochemistry, 44:7583-7592. This plasmid has been found to be prone to multimerization. Multimerization often does not impact plasmid function, but may reduce transformation efficiencies. See our article on Plasmid Dimers and Multimers for more information (https://blog.addgene.org/plasmids-101-dimers-and-multimers)

Plasmid Name: pComb3XSS

Record Creation Time: 20220422T222406+0000

Record Last Update: 20260815T081807+0000

Ratings and Alerts

No rating or validation information has been found for pComb3XSS.

No alerts have been found for pComb3XSS.

Data and Source Information

Source: Addgene

Usage and Citation Metrics

We found 18 mentions in open access literature.

Listed below are recent publications. The full list is available at RRID .

Kim S, et al. (2026) Gut microbiota transfer from autoimmune dry eye mice imprints stereotypic B cell receptor repertoires in the lacrimal gland and induces disease. Frontiers in immunology, 17, 1827057.

Páez-Hernández ZY, et al. (2025) Neutralization of the Pandemic Influenza A/H1N1 Virus with Lama glama Humanized Nanobodies (VHH). Antibodies (Basel, Switzerland), 14(2).

Bernasconi-Bisio F, et al. (2025) Discovery and preclinical development of a SdAb-based CAR-T technology for targeting CD33 in AML. Molecular therapy. Oncology, 33(1), 200949.

Zeng Y, et al. (2025) Development of an Anti-Zearalenone Nanobody Phage Display Library and Preparation of Specific Nanobodies. Current issues in molecular biology, 47(3).

Liu Z, et al. (2024) A Detailed Protocol for Constructing a Human Single-Chain Variable Fragment (scFv) Library and Downstream Screening via Phage Display. Methods and protocols, 7(1).

Xu M, et al. (2024) Functional Divergence in the Affinity and Stability of Non-Canonical Cysteines and Non-Canonical Disulfide Bonds: Insights from a VHH and VNAR Study. International journal of molecular sciences, 25(18).

Liang T, et al. (2024) AI-based IsAb2.0 for antibody design. Briefings in bioinformatics, 25(5).

Visvanathan A, et al. (2024) Early rhombic lip Protogenin+ve stem cells in a human-specific neurovascular niche initiate and maintain group 3 medulloblastoma. Cell, 187(17), 4733.

Brišar N, et al. (2024) An Engineered M13 Filamentous Nanoparticle as an Antigen Carrier for a Malignant Melanoma Immunotherapeutic Strategy. Viruses, 16(2).

Zhao GX, et al. (2024) Potent human monoclonal antibodies targeting Epstein-Barr virus gp42 reveal vulnerable sites for virus infection. Cell reports. Medicine, 5(5), 101573.

Yu C, et al. (2023) Screening and characterization of inhibitory vNAR targeting nanodisc-assembled influenza M2 proteins. iScience, 26(1), 105736.

Petrosino A, et al. (2023) A modular phage vector platform for targeted photodynamic therapy of Gram-negative bacterial pathogens. iScience, 26(10), 108032.

Bordeau BM, et al. (2023) Payload-Binding Fab Fragments Increase the Therapeutic Index of MMAE Antibody-Drug Conjugates. Molecular cancer therapeutics, 22(4), 459.

Feng Z, et al. (2022) Potent suppression of neuroendocrine tumors and gastrointestinal cancers by CDH17CAR T cells without toxicity to normal tissues. Nature cancer, 3(5), 581.

Heeb SR, et al. (2022) Naturally Occurring Anti-Idiotypic Antibodies Portray a Largely Private Repertoire in Immune-Mediated Thrombotic Thrombocytopenic Purpura. Journal of immunology (Baltimore, Md. : 1950), 208(11), 2497.

Morgenstern TJ, et al. (2019) A potent voltage-gated calcium channel inhibitor engineered from a nanobody targeted to auxiliary CaV? subunits. eLife, 8.

Tang F, et al. (2019) Anti-secretogranin III therapy of oxygen-induced retinopathy with optimal safety. Angiogenesis, 22(3), 369.

Dong JX, et al. (2019) A toolbox of nanobodies developed and validated for use as intrabodies and nanoscale immunolabels in mammalian brain neurons. eLife, 8.