Resource Summary Report

Generated by RRID on Aug 11, 2026

Recombineering Information

RRID:SCR_008556
Type: Tool

Proper Citation

Recombineering Information (RRID:SCR_008556)

Resource Information

URL: http://recombineering.ncifcrf.gov/

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Description: Recombineering (recombination-mediated genetic engineering) is a powerful method for fast and efficient construction of vectors for subsequent manipulation of the mouse genome or for use in cell culture experiments. It is also an efficient way of manipulating the bacterial genome directly. Recombineering is a method based on homologous recombination in E. Coli using recombination proteins provided from ? phage. Our bacterial strains contain a defective ? prophage inserted into the bacterial genome. The phage genes of interest, exo, bet, and gam, are transcribed from the ?PL promoter. This promoter is repressed by the temperature-sensitive repressor cI857 at 32C and derepressed (the repressor is inactive) at 42C. When bacteria containing this prophage are kept at 32C no recombination proteins are produced. However, after a brief (15 minutes) heat-shock at 42C a sufficient amount of recombination proteins are produced. exo is a 5''-3'' exonuclease that creates single-stranded overhangs on introduced linear DNA. bet protects these overhangs and assists in the subsequent recombination process. gam prevents degradation of linear DNA by inhibiting E. Coli RecBCD protein. Linear DNA (PCR product, oligo, etc.) with sufficient homology in the 5'' and 3'' ends to a target DNA molecule already present in the bacteria (plasmid, BAC, or the bacterial genome itself) can be introduced into heat-shocked and electrocompetent bacteria using electroporation. The introduced DNA will now be modified by exo and bet and undergo homologous recombination with the target molecule. The method is so efficient that co-electroporation of a supercoiled plasmid and a linear piece of DNA into heat-shocked, electrocompetent bacteria will work as well.

Synonyms: Recombineering Information

Resource Type: data or information resource, database

Keywords: FASEB list

Resource Name: Recombineering Information

Resource ID: SCR_008556

Alternate IDs: nif-0000-31427

Record Creation Time: 20220129T080248+0000

Record Last Update: 20260811T043336+0000

Ratings and Alerts

No rating or validation information has been found for Recombineering Information.

No alerts have been found for Recombineering Information.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 35 mentions in open access literature.

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

Mancini C, et al. (2019) Mice harbouring a SCA28 patient mutation in AFG3L2 develop late-onset ataxia associated with enhanced mitochondrial proteotoxicity. Neurobiology of disease, 124, 14.

Grandjean CL, et al. (2017) Increased TCR signal strength in DN thymocytes promotes development of gut TCR??(+)CD8??(+) intraepithelial lymphocytes. Scientific reports, 7(1), 10659.

Ankers JM, et al. (2016) Dynamic NF-?B and E2F interactions control the priority and timing of inflammatory signalling and cell proliferation. eLife, 5.

Stein SJ, et al. (2016) Trib2 Suppresses Tumor Initiation in Notch-Driven T-ALL. PloS one, 11(5), e0155408.

Rosamilia A, et al. (2016) BoHV-4-based vector delivering Ebola virus surface glycoprotein. Journal of translational medicine, 14(1), 325.

Meir M, et al. (2015) The COP9 signalosome is vital for timely repair of DNA double-strand breaks. Nucleic acids research, 43(9), 4517.

Franceschi V, et al. (2015) BoHV-4-Based Vector Single Heterologous Antigen Delivery Protects STAT1(-/-) Mice from Monkeypoxvirus Lethal Challenge. PLoS neglected tropical diseases, 9(6), e0003850.

Franceschi V, et al. (2015) BoHV-4 immediate early 1 gene is a dispensable gene and its product is not a bone marrow stromal cell antigen 2 counteracting factor. BMC veterinary

research, 11, 224.

Franceschi V, et al. (2014) In vivo image analysis of BoHV-4-based vector in mice. PloS one, 9(4), e95779.

Peng C, et al. (2014) Kaposi's sarcoma-associated herpesvirus ORF6 gene is essential in viral lytic replication. PloS one, 9(6), e99542.

McMurray F, et al. (2013) Adult onset global loss of the fto gene alters body composition and metabolism in the mouse. PLoS genetics, 9(1), e1003166.

Thakur PB, et al. (2013) Characterization of five ECF sigma factors in the genome of Pseudomonas syringae pv. syringae B728a. PloS one, 8(3), e58846.

Donofrio G, et al. (2013) Clinical protection of goats against CpHV-1 induced genital disease with a BoHV-4-based vector expressing CpHV-1 gD. PloS one, 8(1), e52758.

Izumiya Y, et al. (2013) Kaposi's sarcoma-associated herpesvirus K-Rta exhibits SUMO-targeting ubiquitin ligase (STUbL) like activity and is essential for viral reactivation. PLoS pathogens, 9(8), e1003506.

Greenwald JW, et al. (2012) RNA-seq analysis reveals that an ECF ? factor, AcsS, regulates achromobactin biosynthesis in Pseudomonas syringae pv. syringae B728a. PloS one, 7(4), e34804.

Prömel S, et al. (2012) The GPS motif is a molecular switch for bimodal activities of adhesion class G protein-coupled receptors. Cell reports, 2(2), 321.

Jia J, et al. (2012) Regulation of pluripotency and self- renewal of ESCs through epigenetic-threshold modulation and mRNA pruning. Cell, 151(3), 576.

Leão RN, et al. (2012) OLM interneurons differentially modulate CA3 and entorhinal inputs to hippocampal CA1 neurons. Nature neuroscience, 15(11), 1524.

Chung JJ, et al. (2011) A novel gene required for male fertility and functional CATSPER channel formation in spermatozoa. Nature communications, 2, 153.

Kalay G, et al. (2010) Nomadic enhancers: tissue-specific cis-regulatory elements of yellow have divergent genomic positions among Drosophila species. PLoS genetics, 6(11), e1001222.