Ordering Information

VENUS-fusion library

Cat. No.	Product Description	Option
S. cerevisiae **VENUS-Fusion Individual Strains**		
V-1010VN-A	*S. cerevisiae* VN-Fusion Individual Strains	agar type
V-1010VN-G		glycerol type
V-1010VC-A	*S. cerevisiae* VC-Fusion Individual Strains	agar type
V-1010VC-G		glycerol type
S. cerevisiae **VENUS-Fusion Library Set**		
V-1030VN	*S. cerevisiae* VN-Fusion Library Set	
V-1030VC	*S. cerevisiae* VC-Fusion Library Set	

BiFC VENUS vector

Cat. No.	Product Description
V-1010-V1	pFA6a-VN173-HIS3MX6
V-1010-V2	pFA6a-VN173-HIS3MX6
V-1010-V3	pFA6a-VN173-TRP1
V-1010-V4	pFA6a-VN173-TRP1
V-1010-V5	pFA6a-VN173-kanMX6
V-1010-V6	pFA6a-VN173-kanMX6
V-1010-V7	pFA6a-HIS3MX6-PGAL1-VN173
V-1010-V8	pFA6a-HIS3MX6-PGAL1-VN173
V-1010-V9	pFA6a-TRP1-PGAL1-VN173
V-1010-V10	pFA6a-TRP1-PGAL1-VN173
V-1010-V11	pFA6a-kanMX6-PGAL1-VN173
V-1010-V12	pFA6a-kanMX6-PGAL1-VN173
V-1010-V13	pFA6a-HIS3MX6-PCET1-VN173
V-1010-V14	pFA6a-HIS3MX6-PCET1-VN173
V-1010-V15	pFA6a-TRP1-PCET1-VN173
V-1010-V16	pFA6a-TRP1-PCET1-VN173
V-1010-V17	pFA6a-kanMX6-PCET1-VN173
V-1010-V18	pFA6a-kanMX6-PCET1-VN173

Related Product

Cat. No.	Product Description	Option
S-1001	Oligo synthesis	25 nmole
K-3112	*AccuPrep*® Nano-Plus Plasmid Mini Extraction Kit	50 reactions
K-2301	*AccuPower*® HotStart *Pfu* PCR PreMix	50 µl reaction
K-3038	*AccuPrep*® PCR/Gel Purification Kit	50 reactions
A-2041-1F	*AllInOneCycler*™ PCR system	

Contact Us

venus-support@bioneer.co.kr

BIONEER
www.bioneer.com

Bioneer Corporation
8-11 Munpyeongseo-ro, Daedeok-gu
Daejeon, 34302, Republic of Korea
Tel: +82-42-930-8777 (Korea: 1588-9788)
Fax: +82-42-930-8688
E-mail: sales@bioneer.com

Bioneer Inc.
155 Filbert St.Suite 216
Oakland, CA 94607, USA
Toll Free: +1-877-264-4300
Fax: +1-510-865-0350
E-mail: order.usa@bioneer.us.com

Bioneer R&D Center
Korea Bio Park BLDG #B-702
700 Daewangpangyo-ro, Bundang-gu, Seongnam-si
Gyeonggi-do, 13488, Republic of Korea
Tel: +82-31-628-0500
Fax: +82-31-628-0555

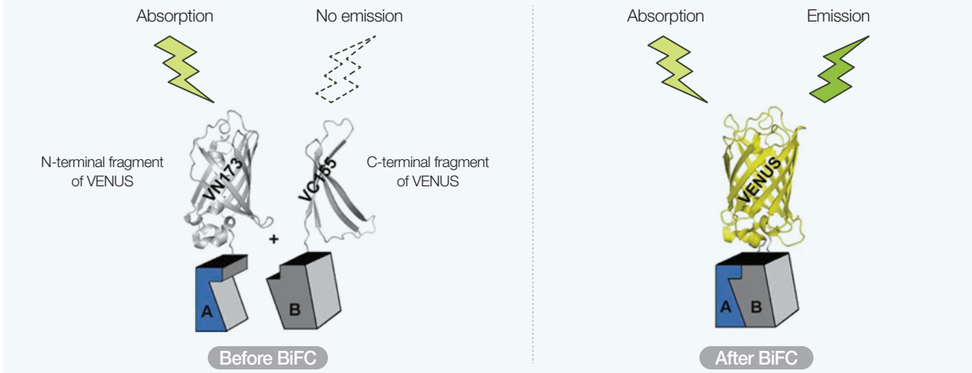
S. cerevisiae Genome-wide VENUS-Fusion Library & BiFC Vector System

S. cerevisiae protein-protein interaction system

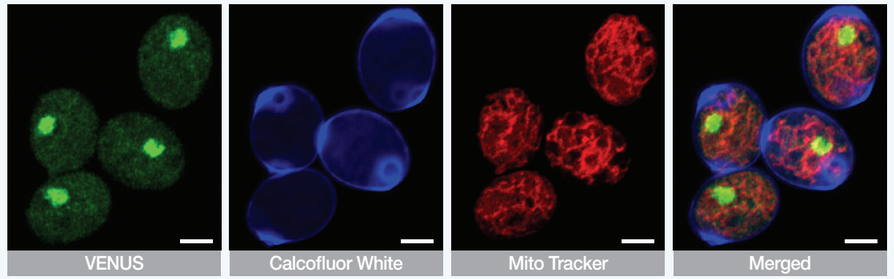
Description

Most vital life activities are related to protein interactions. Therefore, understanding and confirming their interactions are essential for studying the intracellular function of proteins. BIONEER's *Saccharomyces cerevisiae* protein-protein interaction (PPI) system is based on a bimolecular fluorescence complementation (BiFC).
BiFC is a assay for detecting intracellular protein-protein interactions that uses reconstitution of two fluorescent fragments attached to proteins of interest. In BIONEER's PPI system, when protein partners are interacted, the two fragment (N-terminal (VN) and C-terminal (VC) of the VENUS fluorescent complex are also combined to form a fluorescent complex, which emits fluorescence.
BIONEER's PPI system enables convenient observation of protein-protein interactions at the proteome level. In addition, it can be observed the protein-protein interaction and co-localization directly through a fluorescence microscope in the live cell.

Principle of bimolecular fluorescence complementation (BiFC) assay



Example of VENUS imaging



Multicolor fluorescence imaging of *Saccharomyces cerevisiae* using confocal microscopy (Carl Zeiss LSM 880).
Green: nucleolus with VN-VC complex fluorescence (VENUS fluorescence), Blue: cell wall stained with calcofluor white,
Red: Mitochondria stained with MitoTracker Red CMXRos. Scale bar: 2 µm.

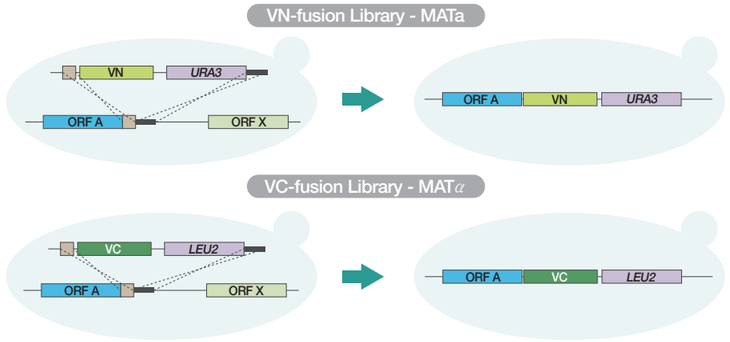
BIONEER
Innovation • Value • Discovery

Bioneer Corporation is Korea's leading biotech company.
Bioneer is the first Korean biotechnology company when it was established in 1992.

S. cerevisiae VENUS-fusion library

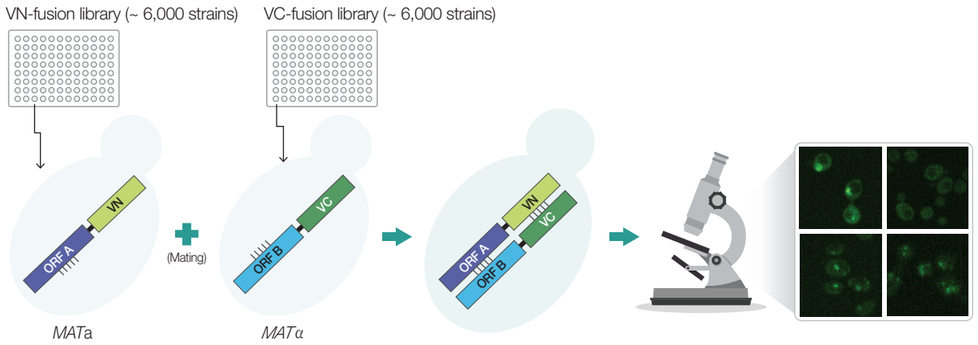
Description

S. cerevisiae VENUS-fusion library was developed at Seoul National University (VN-fusion Library: ***Genome Res***. 2013. 23:736-746 & VC-fusion Library: ***Genome Res***. 2019. 29:135-145). The VENUS-fusion library consists of *S. cerevisiae* strains expressing an ORF containing each fragment of VENUS (VN & VC) at the C-terminus. The VN/VC fusion protein was inserted into the yeast chromosome via homologous recombination and expressed using its own promoter. The libraries consisted of over 5,000 strains, covering more than 90% of the *S. cerevisiae* proteome.



Scheme

S. cerevisiae VENUS fluorescent strain is produced through mating two haploid strains, VN and VC-fusion strains in the libraries. It can be immediately confirmed by observing under fluorescence microscope.



Specification

	S. cerevisiae VENUS-fusion Library	
	VN-fusion Library	VC-fusion Library
VENUS type	N-terminal fragment of VENUS	C-terminal fragment of VENUS
Genotype	*MATa his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 GENE X-VN::KIURA3*	*MATα his3Δ1 leu2Δ0 met15Δ0 ura3Δ0 GENE X-VC::LEU2*
Selectable marker	*KIURA3*	*LEU2*
Culture media for selection	SC-Ura	SC-Leu
Storage	Store at -80°C (glycerol type)	
Reference	***Genome Research***. 2013. 23:736-746	***Genome Research***. 2019. 29:135-145

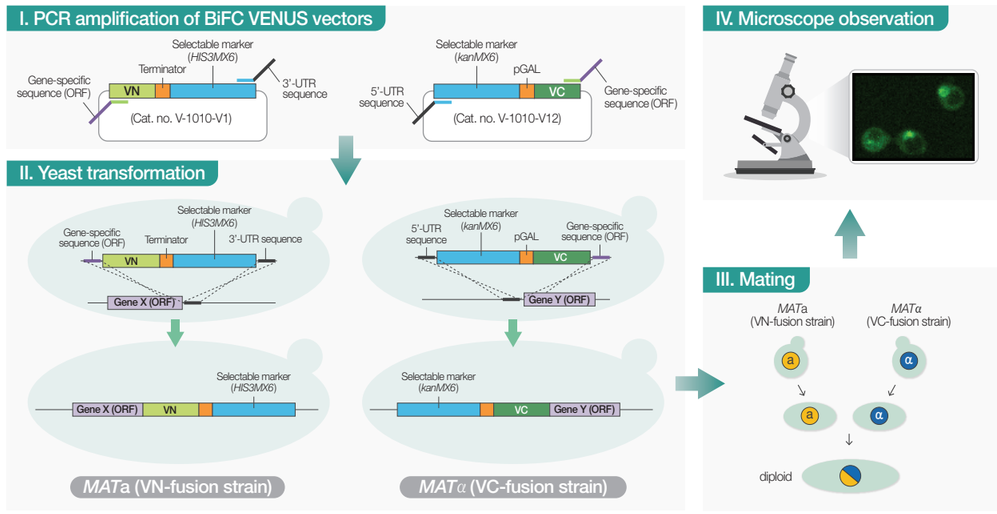
BiFC VENUS vector

Description

S. cerevisiae BiFC VENUS vector has a module that can insert the N-terminal (VN) or C-terminal (VC) fragment of the VENUS fluorescent protein at the end of a specific 18 type of protein. This product can be used to create haploid strains that can analyze intracellular protein interactions.

Scheme

Select vectors for each N-terminal (VN) and C-terminal (VC) type from the list of 18 BiFC vectors. DNA sequences ranging from VN or VC fragment of the VENUS fluorescent protein to the selectable marker are prepared by PCR amplification. Then, Transform the cassette into the *S. cerevisiae* haploid wild-type strain, respectively, to construct a strain with a PCR fragment inserted into the 5' or 3'-end of the target gene. A diploid strain able to confirm protein-protein interaction is produced by mating two haploid strains. The fluorescence signals generated by binding of proteins of interest can be imaged using a fluorescence microscope.



※ Cat. No. V-1010-V1 and V-1010-V12 are used as an example.

Selection guide

Product description		pFA6a-VN173 -HIS3MX6	pFA6a-VC155 -HIS3MX6	pFA6a-VN173 -TRP1	pFA6a-VC155 -TRP1	pFA6a-VN173 -kanMX6	pFA6a-VC155 -kanMX6	pFA6a-HIS3MX6 -PGAL1-VN173	pFA6a-HIS3MX6 -PGAL1-VC155	pFA6a-TRP1 -PGAL1-VN173	pFA6a-TRP1 -PGAL1-VC155	pFA6a-kanMX6 -PGAL1-VN173	pFA6a-kanMX6 -PGAL1-VC155	pFA6a-HIS3MX6 -PCET1-VN173	pFA6a-HIS3MX6 -PCET1-VC155	pFA6a-TRP1 -PCET1-VN173	pFA6a-TRP1 -PCET1-VC155	pFA6a-kanMX6 -PCET1-VN173	pFA6a-kanMX6 -PCET1-VC155
Cat. No. (V-1010-V1~V18)		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18
VENUS-tag type	VN	■		■		■		■		■		■		■		■		■	
	VC		■		■		■		■		■		■		■		■		■
Selectable marker	*His3MX6*	■	■					■	■					■	■				
	TRP1			■	■					■	■					■	■		
	KanMX5					■	■					■	■					■	■
VENUS-tag placement	N-terminal							■	■	■	■	■	■	■	■	■	■	■	■
	C-terminal	■	■	■	■	■	■												
Promoter	pGAL							■	■	■	■	■	■						
	pCET													■	■	■	■	■	■