Antibody Expression Vector

pFB-CHIg-rmG1: Rhesus monkey IgG1 Mammalian Expression Vector

Catalog#: AEV-30

Product Overview

When deciding between **Cynomolgus (*Macaca fascicularis*)** and **Rhesus (*Macaca mulatta*)** IgG1 constant regions for antibody engineering, the choice is usually dictated by your specific preclinical drug development goals.

Feature	Cynomolgus IgG1	Rhesus IgG1
Primary Use Case	Biotherapeutic Tox/PK studies	Virology, Vaccine, and SIV/SHIV research
Sequence Identity to Human	High (~90–93%)	High (~90–93%)
Inter-species Identity	Highly conserved with Rhesus (98%+)	Highly conserved with Cyno (98%+)
Haplotype Diversity	Lower (especially Mauritian cynos)	High (abundant polymorphisms/allotypes)
Availability	Standard CRO favorite for biopharma	Common in academic/government facilities

This vector is a constitutive mammalian expression vector designed to deliver exceptionally high levels of antibody expression. This circular vector features an enhanced, full-length CMV promoter and other expression elements that typically enable higher expression levels. It can be used in suspension-adapted cells, such as Expi293F™ and ExpiCHO™, for transient protein expression. Additionally, it can serve as a Geneticin®-selectable expression plasmid for engineering stable cell lines. The vector carries an ampicillin resistance gene.

Specifications

Antibiotic Resistance	Ampicillin (AmpR)
Constitutive or Inducible System	Constitutive
Delivery Type	Transfection
Promoter	CMV
Product Type	Mammalian Expression Vector
Cloning Method	Restriction Enzyme (5'-AgeI; 3'-XhoI) or Homologous Assembly

Contents & Storage

- 5.0 µg of pFB-CHIg-cmG1 in Tris-EDTA buffer
- Store at -20°C. Vectors are guaranteed stable for 12 months when properly stored.

Materials required for antibody generation and isotype switching

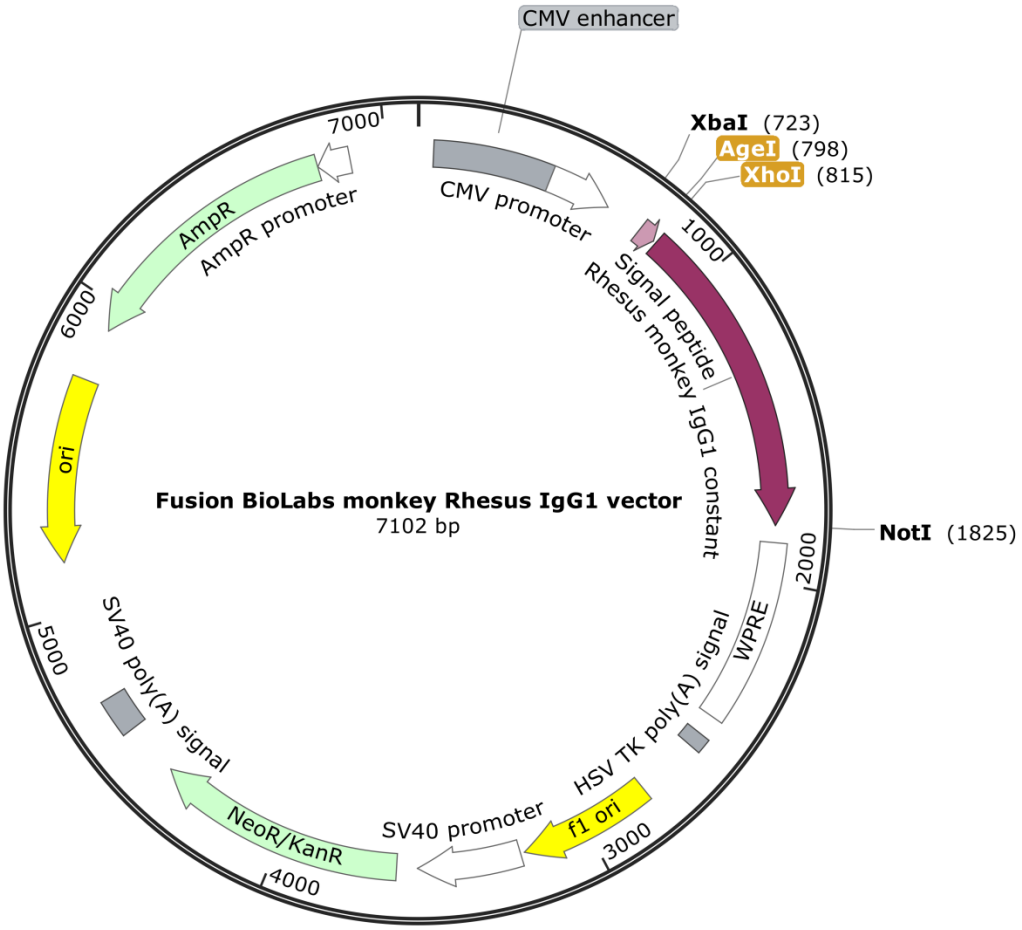
- pFB-CLIg-rmk plasmid that expression the constant region of the Rhesus monkey kappa light chain.

Vector usage

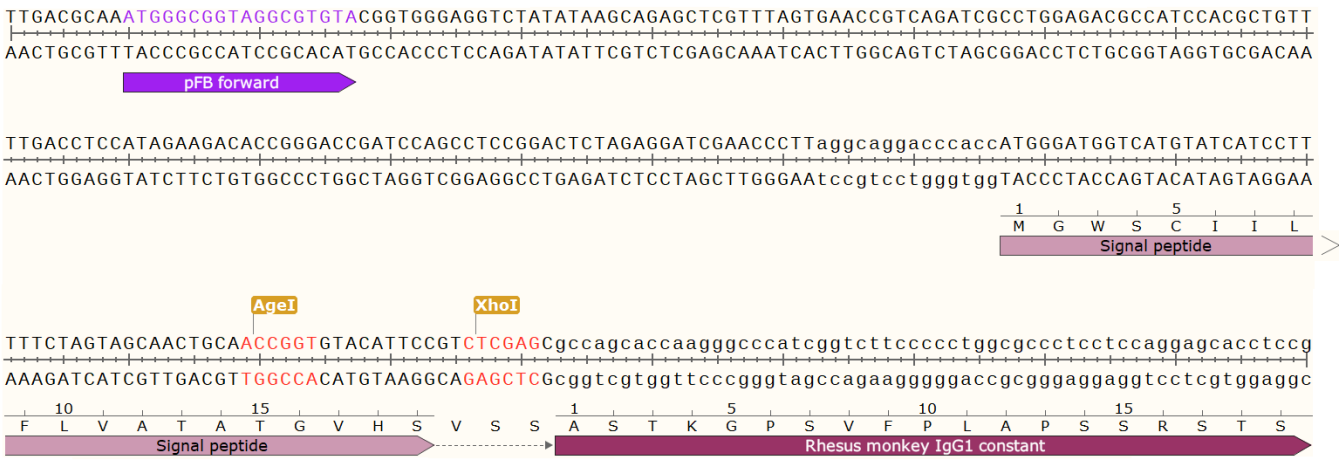
- **Entire Rhesus monkey IgG monoclonal antibodies production**: cloning your heavy/light chain variable regions in the cloning sites to preserve the integrity of the heavy/light chain constant region;

- **Isotype switching**: pFB-CHIg-rmG1 with pFB-CLIg-rmk plasmids are designed to switch a monoclonal antibody from one isotype to another, therefore, maintaining the generated new antibodies with the same antigen affinity (epitopes) but with different effector functions (enhanced or reduced or even disabled ADCC and CDC).

Vector map



Cloning Map



Primer Design for Restriction Enzyme Cloning (Traditional)

Forward primer: 5'- CTAGTAGCAACTGCAACCGGTGTACATTCAN_{VHF}(15-18)

Reverse Primer: 5'- TGGGCCCTTGGTGCTGGCGCTCGAGACN_{VHR}(15-18)

N_{VHF}(15-18): append 15-18 bases encoding 5-6 amino acids starting from the beginning of the VH region to the end of the forward primer.

N_{VHR}(15-18): append the Reverse Complement DNA Sequence of 15-18 base encoding 5-6 amino acids of starting from the end of the VH region to the reverse primer (i.e. from 9th--8th to 4th from the VH end, VSS has already been included in the reverse primer).

Primer Design for Homologous Recombination Cloning (Seamless)

Forward primer: 5'- CTAGTAGCAACTGCAACCGGTGTACATTCAN_{VHF}(15-18) -3'

Reverse Primer: 5'- TGGGCCCTTGGTGCTGGCN_{VHR}(15-18) -3'

N_{VHF}(15-18): append 15-18 bases encoding 5-6 amino acids starting from the beginning of the VH region to the end of the forward primer.

N_{VHR}(15-18): append the Reverse Complement DNA Sequence of 15-18 bases encoding 5-6 amino acids starting from the end of the VH region to the reverse primer.

Sequencing primer for confirming the correct VH insert (included in the Kit)

pFB forward: 5'- ATGGGCGGTAGGCGTGTA-3'