

Antibody Expression Vector

pFB-CHIg-hM (pentamer): Human IgM Mammalian Expression Vector

Catalog#: AEV-08

Product Overview

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'-Agel; 3'-XhoI) or Homologous Assembly

Contents & Storage

- 5.0 µg of pFB-CHIg-hM (pentamer) 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

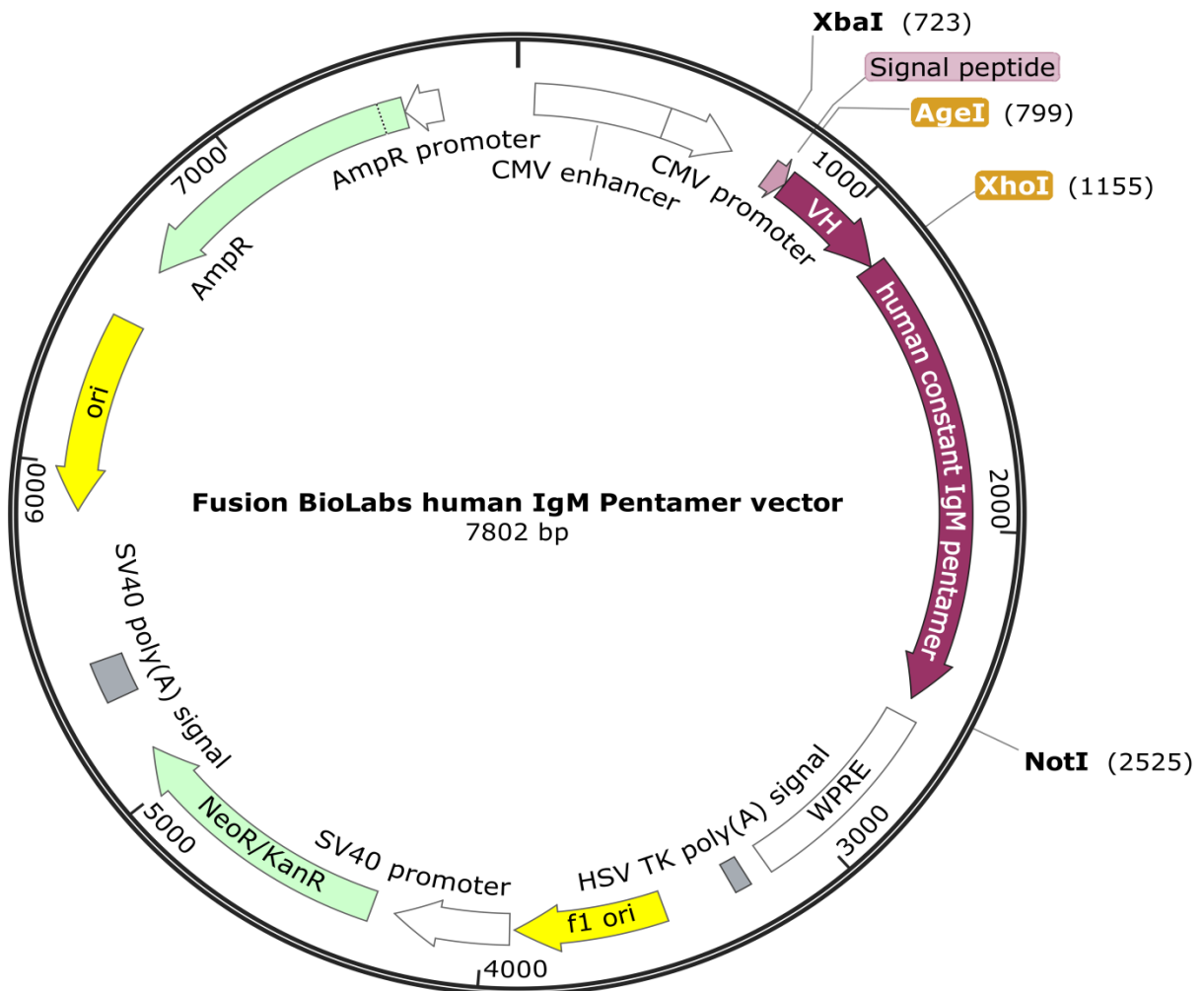
- pFB-CLIg-hk or pFB-CLIg-hl plasmid expressing the constant region of the human kappa or lambda light chain.
- pFB-hlgJ (Cat# AEV-00) plasmid that express human J-chain protein.

Vector usage



- **Entire monoclonal IgM (pentamer) 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-CHlg-hM (pentamer) with pFB-hlgJ plasmid and pFB-CLlg-hk or pFB-CLlg-hl 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'- CTAGTAGCAACTGCAACCGGTGTACATTCA_{N_{VHF}(15-18)}

Reverse Primer: 5'- TGGGGCGGATGCACTCCC_{GCTCGAGACN_{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'- TGGGGCGGATGCACTCCCN_{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'