



# Antibody Phage Display Library Construction Kit

## pAPD-m-Fab: Mouse Fab phage display library construction kit

Catalog#: APD-03

### Product Overview

Fusion BioLabs offers a range of library primer sets and phagemid vector combination for antibody phage display and peptide phage display construction. With customizable features and robust performance, our primer sets and phagemid vectors are designed for facilitating phage display library generation as fast as within one week.

**pAPD-m-Fab** is the phagemid vector for construction of a fragment antigen-binding (Fab) library for **mouse** antibodies. Here are the key steps involved in constructing such a library:

- Amplify V genes from cDNA reverse transcript from RNA isolated from peripheral blood lymphocytes (PBL) or lymphoid tissue of non-immunized or immunized donors using PCR primers corresponding to Variable repertoires of  $V_H$ ,  $V_K$ ,  $V_\lambda$  and constant regions of  $C_{H1}$ ,  $C_K$  and  $C_\lambda$ .
- Combine  $V_H$  repertoires and  $C_{H1}$  fragment to create  $V_H-C_{H1}$  repertoires,  $V_K$  repertoires and  $C_K$  fragment to create  $V_K-C_K$  repertoires,  $V_\lambda$  repertoires and  $C_\lambda$  fragment to create  $V_\lambda-C_\lambda$  repertoires, using a simple two-fragment PCR assembly procedure respectively.
- Restriction enzyme digestion **pAPD-m-Fab** vector and  $V_K-C_K$  repertoires or  $V_\lambda-C_\lambda$  repertoires with  $SacI/XbaI$ , or **pAPD-m-Fab** vector and  $V_H-C_{H1}$  repertoires with  $XhoI/Spel$ .
- Ligation of digested and purified fragment into corresponding restriction enzymes digested and purified **pAPD-m-Fab** vector to make either **Light chain sub-library** or **heavy chain sub-library**.
- Restriction enzyme digestion **light chain sub-library** and  $V_H-C_{H1}$  repertoires with  $XhoI/Spel$  or **heavy chain sub-library** and  $V_{K,\lambda}-C_{K,\lambda}$  repertoires with  $SacI/XbaI$ , to make mouse Fab libraries.

### Key Features

**High expression efficiency:** Engineered for efficient expression and display of antibody fragment Fab on the surface, allowing for easy screening and selection of target molecules.

**Flexibility and versatility:** One vector for both antibody library construction and downstream antibody fragment expression. No need subcloning into expression vector for downstream application.

### Specifications

Antibiotic Resistance	Ampicillin (Amp <sup>R</sup> )
Constitutive or Inducible System	Inducible for downstream expression
Delivery Type	Transformation
Product Type	Bacterial Expression Vector
Cloning Method	Restriction Enzymes for (5'- $SacI$ and 3'- $XbaI$ for $V_{K,\lambda}-C_{K,\lambda}$ repertoires; 5'- $XhoI$ and 3'- $Spel$ for $V_H-C_{H1}$ repertoire)

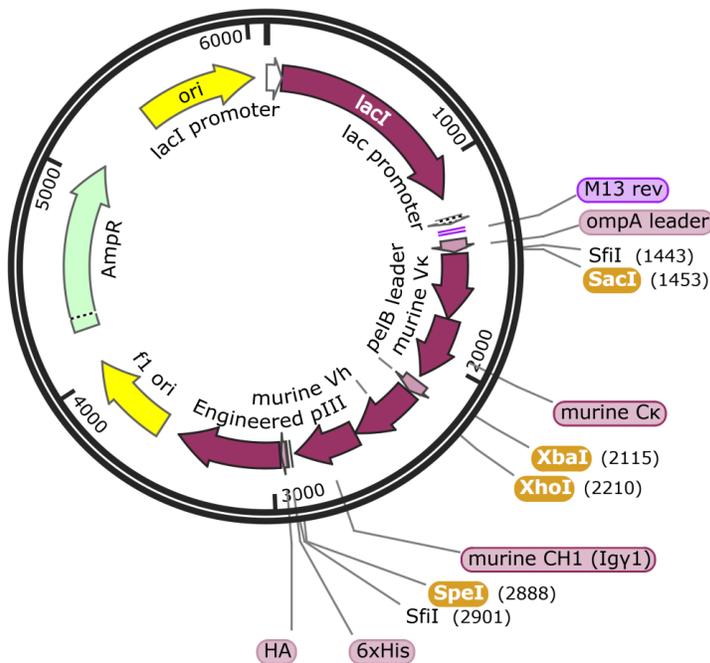


### Contents & Storage

Primer Set		
Vial 1	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $V_k$ repertoire amplification
Vial 2	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $V_\lambda$ repertoire amplification
Vial 3	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $V_H$ repertoire amplification
Vial 4	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $C_k$ fragment amplification
Vial 5	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $C_\lambda$ fragment amplification
Vial 6	100 $\mu$ l, 10 $\mu$ M	Primer mix (F+R) for $C_{H1}$ fragment amplification
Vial 7	100 $\mu$ l, 10 $\mu$ M	Assembly Primer mix (F+R) for $V_k$ - $C_k$ repertoire construction
Vial 8	100 $\mu$ l, 10 $\mu$ M	Assembly Primer mix (F+R) for $V_\lambda$ - $C_\lambda$ repertoire construction
Vial 9	100 $\mu$ l, 10 $\mu$ M	Assembly Primer mix (F+R) for $V_H$ - $C_{H1}$ repertoire construction
Vial 10	100 $\mu$ l, 10 $\mu$ M	M13 rev Forward sequencing primer
Vial 11	100 $\mu$ l, 10 $\mu$ M	pIII rev Reverse sequencing primer
pAPD-m-Fab cloning vector for phage display mouse Fab library construction		
Vial 12	10.0 $\mu$ g in Tris-EDTA buffer	

- Store at -20°C. Primer sets and vectors are guaranteed stable for 12 months when properly stored.

### Vector for library Construction



### phagemid vector for mouse Fab library construction

6074 bp