

BM5516P

Monoclonal Antibody to M13 Bacteriophage G8P Capsid - Purified

Alternate names: Coat protein B, Gene 8 protein, Major coat protein

Quantity: 0.1 mg

Concentration: 0.1 mg/ml (after reconstitution)

Background: M13 is a filamentous bacteriophage composed of circular single stranded DNA (ssDNA) which is 6407 nucleotides long encapsulated in approximately 2700 copies of the major coat protein P8, and capped with 5 copies of two different minor coat proteins (P9, P6, P3) on the ends. The minor coat protein P3 attaches to the receptor at the tip of the F pilus of the host *Escherichia coli*. Infection with filamentous phages is not lethal, however the infection causes turbid plaques in *E. coli*. It is a non-lytic virus. However a decrease in the rate of cell growth is seen in the infected cells. Antibodies to M13 filamentous phage coat proteins are instrumental in the selection and detection of phages expressing specific antibody fragments or peptide sequences at their surface.

The display of repertoires of antibody fragments on the surface of filamentous phage offers a new way to produce immunoreagents with defined specificities. Phage derived antibody fragments offer a number of advantages over mouse monoclonal antibodies, such as better clearance from the blood, the possibility to select from human combinatorial libraries and the relative ease by which such fragments can be manipulated.

The phage display technique thus facilitates the selection of antibody fragments of therapeutic value or research interest. Antibodies to M13 filamentous phage coat proteins are instrumental in the selection and detection of phages expressing specific antibody fragments or peptide sequences at their surface.

Uniprot ID: [P69541](#)

NCBI: [NP_510890.1](#)

GeneID: [927333](#)

Host / Isotype: Mouse / IgG2b

Recommended Isotype Controls: SM12P, AM03110PU-N

Clone: B62-FE2

Immunogen: fd phages from *E. coli* F⁺ strain (JM109)

Format: **State:** Lyophilized purified IgG fraction

Purification: Affinity Chromatography on Protein A

Buffer System: PBS, pH 7.4

Preservatives: 0.09% Sodium Azide

Stabilizers: 0.5% BSA

Reconstitution: Restore in 1.0 ml distilled water to a concentration of 1 mg/ml.

Applications:	Phage Display: Immunoassay for identification of recombinant antigen- or antibody-phages. <u>Detection limit:</u> 10^7 phage particles. Immunoblotting. Immunoelectron Microscopy. ELISA: 1/10 000. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	<i>B62-FE2</i> binds to an epitope on pVIII (phage coat protein) covering the N-terminal region of g8p AEGDDPAKAAFDLSLQASAT (See <i>Kneissel et al.</i>).
Storage:	Prior to reconstitution store at 2-8°C. Following reconstitution store the antibody at -20°C. For prolonged storage of reconstituted antibody solution we strongly recommend addition of a stabilizing protein (e.g. 0.5% BSA) and a preservative (e.g. Thimerosal or Sodium Azide). Avoid repeated freezing and thawing. Shelf life: one year from despatch. Note: Antibody shows a tendency to precipitate at neutral pH.
General Readings:	1. Micheel B, Heymann S, Scharte G, Böttger V, Vogel F, Dübel S, et al. Production of monoclonal antibodies against epitopes of the main coat protein of filamentous fd phages. <i>J Immunol Methods</i>. 1994 May 2;171(1):103-9. PubMed PMID: 7513731. 2. Kneissel S, Queitsch I, Petersen G, Behrsing O, Micheel B, Dübel S. Epitope structures recognised by antibodies against the major coat protein (g8p) of filamentous bacteriophage fd (Inoviridae). <i>J Mol Biol</i>. 1999 Apr 23;288(1):21-8. PubMed PMID: 10329123. 3. Rondot S, Koch J, Breitling F, Dübel S. A helper phage to improve single-chain antibody presentation in phage display. <i>Nat Biotechnol</i>. 2001 Jan;19(1):75-8. PubMed PMID: 11135557.