Mouse Monoclonal Antibody to phage coat proteins of fd phage or M13 phage (Biotin)

Catalog Number: **11973-MM05-B**

General Information	
Immunogen:	M13 Bacteriophage
Clone ID:	MM05
Ig Type:	Mouse IgG1
Applications:	ELISA
Specificity:	The antibody binds specifically to phage coat proteins of fd phage or M13 phage
Formulation:	0.2 μm filtered solution in PBS
Storage:	＜ -20℃

Preparation

This antibody was produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with M13 Bacteriophage. The IgG fraction of the cell culture supernatant was purified by Protein A affinity chromatography and then conjugated with Biotin.

Specificity

The antibody binds specifically to phage coat proteins of fd phage or M13 phage

Storage

This antibody can be stored at 2℃-8℃ for one month without detectable loss of activity. Antibody products are stable for twelve months from date of receipt when stored at -20℃ to -80℃. **Preservative-Free.**
Sodium azide is recommended to avoid contamination (final concentration 0.05%-0.1%). It is toxic to cells and should be disposed of properly. **Avoid repeated freeze-thaw cycles.**

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. 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. M13 plasmids are used for many recombinant DNA processes, and the virus has also been studied for its uses in nanostructures and nanotechnology. The phage coat is primarily assembled from a 50 amino acid protein called pVIII (or p8), which is encoded by gene VIII (or g8) in the phage genome. For a wild type M13 particle, it takes about approximately 2700 copies of p8 to make the coat about 900 nm long. The coat's dimensions are flexible though and the number of p8 copies adjusts to accommodate the size of the single stranded genome it packages. The general stages to a viral life cycle are: infection, replication of the viral genome, assembly of new viral particles and then release of the progeny particles from the host. Filamentous phage use a bacterial structure known as the F pilus to infect E. coli, with the M13 p3 tip contacting the TolA protein on the bacterial pilus. The phage genome is then transferred to the cytoplasm of the bacterial cell where resident proteins convert the single stranded DNA genome to a double stranded replicative form.

Reference

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Mori, K. et al., 1996, Antiviral Res. 31 (1-2): 79-86.

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Sitohy, M. et al., 2006, J Agric Food Chem. 54 (11): 3800-6.

Khalil, A.S. et al., 2007, Proc Natl Acad Sci. USA. 104 (12): 4892-7.

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Applications

Direct ELISA – This antibody can be used at 0.1-0.4 μg/mL in ELISA.