Data Sheet (Cat.No.TMAY-02172B)

TargetMol

Anti-M13 Bacteriophage Antibody-Biotin (4Z973)

Product Details

Ig Type:	Mouse IgG1
Reactivity:	other
Conjugation:	Biotin
Clone:	4Z973
Purification:	Protein A

Applications

Application:	ELISA
Recommended	ELISA: 0.1-0.4 μg/mL

Properties

Stability & Storage:	Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles. Preservative-Free.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	M13 Bacteriophage
Antigen Species:	other

Research Background

M13 is a filamentous bacteriophage composed of circular single-stranded DNA (ssDNA) which is 647 nucleotides long encapsulated in approximately 27 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 5 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 27 copies of p8 to make the coat about 9 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 uses 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.

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