Data Sheet (Cat.No.TMPY-03465)

TargetMol

Flagellin Protein, Listeria monocytogenes, Recombinant (His)

General Information

Synonyms: flaA

Protein Construction: A DNA sequence encoding the flaA (YP_013330.1) (Met1-Ser287) was expressed with a N-terminal polyhistidine tag. Predicted N terminal: His

Species: Listeria monocytogenes

Expression Host: E. coli

Accession: YP_013330.1

Molecular Weight: 32.3 kDa (predicted); 33-37 kDa (reducing conditions)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 95 % as determined by SDS-PAGE

Endotoxin: Please contact us for more information.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The role of flagella and motility in the attachment of the foodborne pathogen Listeria monocytogenes to various surfaces is mixed with some systems requiring flagella for an interaction and others needing only motility for cells to get to the surface. In nature this bacterium is a saprophyte and contaminated produce is an avenue for infection. Previous studies have documented the ability of this organism to attach to and colonize plant tissue. Motility mutants were generated in three wild type strains of L. monocytogenes by deleting either FlaA, the gene

encoding flagellin, or motAB, genes encoding part of the flagellar motor, and tested for both the ability to colonize sprouts and for the fitness of that colonization. The motAB mutants were not affected in the colonization of alfalfa, radish, and broccoli sprouts; however, some of the FlaA mutants showed reduced colonization ability. The best colonizing wild type strain was reduced in colonization on all three sprout types as a result of a FlaA deletion. A mutant in another background was only affected on alfalfa. The third, a poor alfalfa colonizer was not affected in colonization ability by any of the deletions. Fitness of colonization was measured in experiments of competition between mixtures of mutant and parent strains on sprouts. Here the FlaA and motAB mutants of the three strain backgrounds were impaired in fitness of colonization of alfalfa and radish sprouts, and one strain background showed reduced fitness of both mutant types on broccoli sprouts. Together these data indicate a role for flagella for some strains to physically colonize some plants, while the fitness of that colonization is positively affected by motility in almost all cases.

Reference

Gorski L. et al., 2009, PLoS ONE. 4 (4): E5142.
Tresse O. et al., 2009, Can J Microbiol. 55: 189-96.
Schirm M. et al., 2004, J Bacteriol. 186: 6721-7.

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