

Product Specification Sheet

**Flagellin from *S. typhimurium* Fla protein (TLR5 Ligand)**

□ **Cat #** FLGN17-N-50    Flagellin from *S. typhimurium* Fla protein/BOR), purified, Low Endotoxin    **SIZE:** 50 ug

Flagellin is a protein (495-aa; 30-60 Kda, refs 1) that arranges itself in a hollow cylinder to form the filament in bacterial flagellum. Individual *Salmonella* serotypes usually alternate between the production of 2 antigenic forms of flagella, termed phase 1 and phase 2, each specified by separate structural genes, *fliC* and *fliJ*. Flagellin is the principal protein of bacterial flagellum, and is present in large amounts on nearly all flagellated bacteria. It confers motility on a wide range of bacterial species. Flagellin is a potent stimulator of innate immune responses in a number of eukaryotic cells and organisms, including both mammals and plants. In mammals, flagellin is recognized by TLR51 and triggers defense responses both systemically and at epithelial surfaces. Flagellin induces the activation of NF-κB and the production of cytokines and nitric oxide depending on the nature of the TLR5 signaling complex.

The structure of flagellin is responsible for the helical shape of the flagellar filament, which is important for its proper function. The N- and C-termini of flagellin form the inner core of the flagellin protein, and is responsible for flagellin's ability to polymerize into a filament. The central portion of the protein makes up the outer surface of the flagellar filament. While the termini of the protein is quite similar between all bacterial flagellins, the central portion is wildly variable.

In plants, a 22 amino acid sequence (*flg22*) of the conserved N-terminal part of flagellin is known to activate plant defense mechanisms. Flagellin perception in *Arabidopsis thaliana* functions via the receptor-like-kinase, FLS2 (flagellin-sensitive-2). Mitogen-activated-protein-kinases (MAPK) acts as signalling compounds and more than 900 genes are affected upon *flg22* treatment. Pre-stimulation with a synthetic *flg22*-peptide led to enhanced resistance against bacterial invaders.

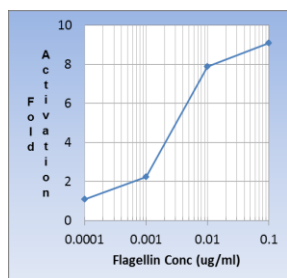
Name: Flagellinm, Phase 1-I flagellin, *fliC*  
Synonyms: *flaF*, *hag*  
Ordered Locus Names: STM1959

**Source of Antigen and Antibodies**

Flagellin was purified from *S. typhimurium* (Strain 14028). It is >95% pure by SDS-PAGE. Supplied in PBS, pH 7.4 in liquid (or see lot sp. conc on the vial) or in powder form. Reconstitute powder in water or other buffers at >100 ug/ml and store at -20oC for at least 6 month. Do not store diluted solutions at 4oC for more than a few days.

**Endotoxin:** <0.1EU/μg purified protein (LAL test)

**Biological activity:**



Flagellin activity is tested using Caco-2 cells transfected with plasmid encoding CCL20-LUC plasmid (0.0001-1 ug/ml) (refs 2). The figure shows fold activation Vs flagellin conc.

/8-ADI\_ELISA

**Stability:** 6-12 months at -20oC or below.  
**Shipping:** 4oC for solutions and room temp for powder

**Recommended Usage**

Western Blotting (1:1K-5K using Chemiluminescence technique)..

**ELISA** (1:10-50K; using 50-100 ng control antigen/well).

**Specific biological activity**

Flagellin have many known activities such as activation fo TLR5 in human epithelial cells assays based on NF-κB luciferase fusion, on expression of IL-8 (CXCL8), iNOS, beta-defensin 2 and and MMP7, maturation of dendritic cells. TLR5 can be stimulated in vitro at 5-50 ng/ml and in invivo at 0.1-1 ug/mouse.

**References:** (1) Joys TM (1985) JBC 260, 15785; Kanto S (1991) JMB 219, 471-480; Hayashi F (2001) Nature 410, 1099-1103; Mizel SB (2003) J. Immunol. 170, 6217-6223; Shcinder U (1994) Mol Cell. Biol. 14, 5820-5831; (2). Nempont C (2008) J. Immunol. 181, 2036

\*This product is for In vitro research use only.

**Related items**

Catalog#	ProdDescription
FLG15-P-1	Flg15 peptide (deletion peptide 30-44 aa, <i>FliC</i> , <i>P. aeruginosa</i> ) control,pure
FLG22-P-1	Flg22 peptide (30-51 aa, <i>FliC</i> , <i>P. aeruginosa</i> ), pure
FLG22-P-5	Flg22 peptide (30-51 aa, <i>FliC</i> , <i>P. aeruginosa</i> ), pure
FLGN11-M	Mouse monoclonal anti-flagellin protein ( <i>Fla/FliC/BOR</i> ) IgG
FLGN15-R-50	Recombinant ( <i>E. coli</i> ) purified <i>Borrelia</i> Flagellin p41 ( <i>Fla</i> protein/BOR)
FLGN16-N-50	Flagellin from <i>B. subtilis</i> Fla protein/BOR), purified
FLGN17-N-50	Flagellin from <i>S. typhimurium</i> Fla protein/BOR), purified
FLGN17-N-50	140522A

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