

# hTLR5-Fc

Soluble ectodomain of human TLR5 fused to an IgG1 Fc domain

Catalog # fc-htrl5

<http://www.invivogen.com/htrl5-fc>

For research use only, not for diagnostic or therapeutic use

Version # 17L04-MM

## PRODUCT INFORMATION

### **Content:**

- 50 µg lyophilized hTLR5-Fc

### **Formulation:**

0.2 µm filtered solution in phosphate buffer with glycine, saccharose and stabilizing agents

### **Storage:**

- Product is shipped at room temperature. Store lyophilized hTLR5-Fc at -20 °C. Product is stable for at least 1 year.

- Reconstituted hTLR5-Fc is stable for 1 month when stored at 4 °C and for 1 year when stored at -20 °C. Avoid repeated freeze-thaw cycles.

### **Quality control**

- This product has been validated for neutralization.  
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) is confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

The soluble TLR5 receptor, hTLR5-Fc, was generated by fusing the N-terminal extracellular domain of human TLR5 (aa 21-639) to the N-terminus of an engineered Fc region of human IgG1 with a 2 amino acid linker. The hTLR5-hFc fusion has an apparent molecular weight of 110 kDa on SDS-PAGE. Fc-hTLR5 is expressed in CHO cells and purified by protein G affinity chromatography.

## BACKGROUND

Toll-like receptor 5 (TLR5) is a type-1 transmembrane receptor comprising an N-terminal extracellular leucine rich repeat domain and a C-terminal intracellular TIR signaling domain. TLR5 recognizes flagellin from both Gram-positive and Gram-negative bacteria. Activation of the receptor stimulates the production of proinflammatory cytokines, such as TNF-α, through signaling via the adaptor protein MyD88 and the serine kinase IRAK<sup>1, 2</sup>. TLR5 can generate a proinflammatory signal as a homodimer suggesting that it might be the only TLR participating in flagellin recognition<sup>2</sup>. However, TLR5 may require the presence of a co-receptor or adaptor molecule for efficient ligand recognition and/or signaling<sup>3</sup>.

1. Gewirtz AT. *et al.*, 2001. Cutting edge: bacterial flagellin activates basolaterally expressed TLR5 to induce epithelial proinflammatory gene expression. *J Immunol*, 167(4):1882-5.  
2. Hayashi F. *et al.*, 2001. The innate immune response to bacterial flagellin is mediated by Toll-like receptor 5. *Nature*, 410(6832):1099-103. 3. Tallant T. *et al.*, 2004. Flagellin acting via TLR5 is the major activator of key signaling pathways leading to NF-kappa B and proinflammatory gene program activation in intestinal epithelial cells. *BMC Microbiol*. 4(1):33.

## METHOD

### **Preparation of stock solution (100 µg/ml)**

- Add 500 µl of sterile water to the 50 µg of hTLR5-Fc.

- Mix by pipetting. Do not vortex.

## APPLICATIONS

hTLR5-Fc can be used for receptor binding assays and to neutralize human TLR5-induced cellular activation. The optimal working concentration of hTLR5-Fc must be determined empirically for a given set of experimental conditions.

### **Receptor binding assays:**

Typically, 1 ng-1 µg/ml hTLR5-Fc is incubated with 0.1-5 µg of an immobilized TLR5 ligand. The receptor-ligand binding is detected using a labeled secondary anti-IgG antibody.

### **Neutralization studies:**

We recommend to incubate various concentrations of hTLR5-Fc (typically 10 ng-1 µg/ml) with human TLR5-expressing cells, prior to the addition of a TLR5 ligand (typically 10 ng-5 µg/ml). The neutralizing activity of hTLR5-Fc is determined by assessing flagellin-induced cell activation.

## RELATED PRODUCTS

Product	Catalog Code
<b>TLR5 ligands</b>	
FLA-BS Ultrapure (flagellin from <i>B. subtilis</i> )	trl-pbsfla
FLA-PA Ultrapure (flagellin from <i>P. aeruginosa</i> )	trl-pafla
FLA-ST Ultrapure (flagellin from <i>S. typhimurium</i> )	trl-epstfla
<b>Anti-Flagellin antibodies</b>	
Anti-Flagellin FliC	mabg-flic
<b>Anti-TLR5 antibody</b>	
Anti-hTLR5-IgA	maba2-htrl5
<b>TLR5 expressing cells</b>	
293/hTLR5	293-htrl5
HEK-Blue™ hTLR5 cells (SEAP reporter cells)	hkb-htrl5
<b>TLR5 plasmid</b>	
pUNO1-hTLR5	puno1-htrl5

## TECHNICAL SUPPORT

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