



Datasheet for ABIN7538552

TLR4 Protein



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2 Images

Overview

| | |
|---------------|--------------------|
| Quantity: | 50 µg |
| Target: | TLR4 |
| Origin: | Human |
| Source: | Mammalian Cells |
| Protein Type: | Synthetic Nanodisc |

Product Details

| | |
|------------------|--|
| Purpose: | Human TLR4 full length protein-synthetic nanodisc |
| Characteristics: | Unlike other membrane scaffold protein (MSP) Nanodisc on the market, our synthetic Nanodisc can be prepared directly from the cells. The polymers used during this process have a dual function. It dissolves the cell membranes, like the detergent, and uses cellular phospholipids to form Nanodisc around the membrane proteins. The target protein embedded Nanodiscs can then be purified. |

Target Details

| | |
|-------------------|--|
| Target: | TLR4 |
| Alternative Name: | TLR4 (TLR4 Products) |
| Background: | The protein is a member of the Toll-like receptor (TLR) family which plays a fundamental role in pathogen recognition and activation of innate immunity. TLRs are highly conserved from Drosophila to humans and share structural and functional similarities. They recognize pathogen-associated molecular patterns that are expressed on infectious agents, and mediate the production of cytokines necessary for the development of effective immunity. The various |

Target Details

TLRs exhibit different patterns of expression. In silico studies have found a particularly strong binding of surface TLR4 with the spike protein of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of Coronavirus disease-2019 (COVID-19). This receptor has also been implicated in signal transduction events induced by lipopolysaccharide (LPS) found in most gram-negative bacteria. Mutations in this gene have been associated with differences in LPS responsiveness, and with susceptibility to age-related macular degeneration.

Molecular Weight: The human full length TLR4 protein has a MW of 95.7 kDa

UniProt: [O00206](#)

Pathways: [TLR Signaling](#), [Activation of Innate immune Response](#), [Cellular Response to Molecule of Bacterial Origin](#), [Positive Regulation of Immune Effector Process](#), [Production of Molecular Mediator of Immune Response](#), [Toll-Like Receptors Cascades](#), [Inflammasome](#), [S100 Proteins](#)

Application Details

Comment: Advantages of Synthetic Nanodiscs:

- Highly purified membrane proteins
- High solubility in aqueous solutions
- High stability
- Proteins are in a native membrane environment and remain biologically active
- No detergent and can be used for cell-based assays
- No MSP backbone proteins

Limitations of Synthetic Nanodiscs:

- Intolerant to acids and high concentrations of divalent metal ions

Restrictions: For Research Use only

Handling

Format: Lyophilized

Buffer: Lyophilized from nanodisc solubilization buffer (20 mM Tris-HCl, 150 mM NaCl, pH 8.0). Normally 5 % - 8 % trehalose is added as protectants before lyophilization.

Storage: -20 °C, -80 °C

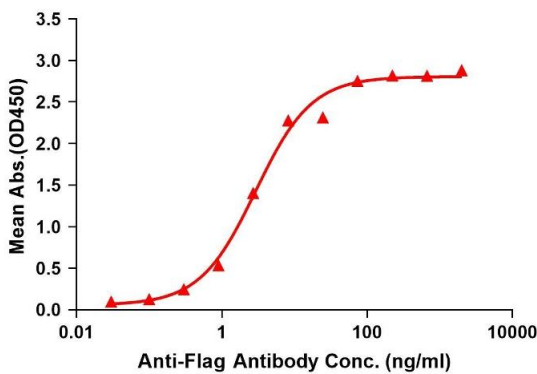
Storage Comment: Store at -20°C to -80°C for 12 months in lyophilized form. After reconstitution, if not intended for use within a month, aliquot and store at -80°C (Avoid repeated freezing and thawing). Lyophilized proteins are shipped at ambient temperature.



SDS-PAGE

Image 1. Human -Nanodisc, Flag Tag on SDS-PAGE

ELISA assay to evaluate TLR4-Nanodisc
0.2µg Human TLR4-Nanodisc per well



ELISA

Image 2. Elisa plates were pre-coated with Flag Tag - Nanodisc (0.2 µg/per well). Serial diluted anti-Flag monoclonal antibody solutions were added, washed, and incubated with secondary antibody before Elisa reading. From above data, the EC50 for anti-Flag monoclonal antibody binding with -Nanodisc is 2.939 ng/mL.