

Recombinant Human IRAK4 Protein

Catalog No.: RP02130 Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
Human	51135	Q9NWZ3-1

Tags

N-His

Synonyms

IPD1; IMD67; REN64; IRAK-4; NY-REN-64; IRAK4; IPD1; interleukin-1 receptor-associated kinase 4; IRAK-4; NY-REN-64; REN64

Product Information

Source	Purification
Baculovirus-Insect Cells	> 92% by SDS-PAGE.

Calculated MW	Observed MW
53.8 kDa	48 kDa

Endotoxin

< 1.0 EU/μg of the protein by LAL method.

Formulation

Lyophilized from a 0.22 μm filtered solution of 20mM Tris, 500mM NaCl, 0.5mM PMSF, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

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Background

Interleukin-1 receptor-associated kinase 4, also known as Renal carcinoma antigen NY-REN-64, IRAK-4, and IRAK4, is a member of the protein kinase superfamily, TKL Ser/Thr protein kinase family, and Pelle subfamily. IRAK4 contains one death domain and one protein kinase domain. IRAK4 is required for the efficient recruitment of IRAK1 to the IL-1 receptor complex following IL-1 engagement, triggering intracellular signaling cascades leading to transcriptional up-regulation and mRNA stabilization. It also phosphorylates IRAK1. A member of the IL-1 receptor (IL-1R)-associated kinase (IRAK) family, IRAK4, has been shown to play an essential role in Toll-like receptor (TLR)-mediated signaling. IL-1-mediated IRAK4 kinase activity in T cells is essential for the induction of IL-23R expression, Th17 differentiation, and autoimmune disease. Pharmacological blocking of IRAK4 kinase activity will retain some levels of host defense while reducing the levels and duration of inflammatory responses, which should provide beneficial therapies for sepsis and chronic inflammatory diseases. Defects in IRAK4 are the cause of recurrent isolated invasive pneumococcal disease type 1 (IPD1) which is defined as two episodes of IPD occurring at least 1 month apart, whether caused by the same or different serotypes or strains. Recurrent IPD occurs in at least 2% of patients in most series, making IPD the most important known risk factor for subsequent IPD. Defects in IRAK4 are also the cause of IRAK4 deficiency which causes extracellular pyogenic bacterial and fungal infections in otherwise healthy children.

Basic Information

Description

Recombinant Human IRAK4 Protein is produced by Baculovirus-Insect Cells expression system. The target protein is expressed with sequence (Met1-Ser460) of human IRAK4 (Accession #NP_001107654.1) fused with a 6×His tag at the N-terminus.

Bio-Activity

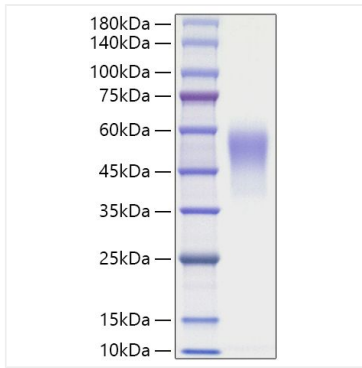
Storage

Store at -20°C. Store the lyophilized protein at -20°C to -80 °C up to 1 year from the date of receipt.

After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week.

Avoid repeated freeze/thaw cycles.

Validation Data



Recombinant Human IRAK4 Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 45-60 kD.