

Human ITCH / AIP4 Protein (aa 526-903)



Sino Biological
Biological Solution Specialist

Catalog Number: 11131-HNCE

General Information

Gene Name Synonym:

ADMFD; AIF4; AIP4; dJ468O1.1; NAPP1

Protein Construction:

A DNA sequence encoding the human ITCH (NP_113671.3) N-terminal segment (Arg 526-Glu 903) was expressed and purified, with two additional amino acids (Gly & Pro) at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Gly

Molecular Mass:

The recombinant human ITCH (aa 526-903) consisting of 380 amino acids and has a calculated molecular mass of 40 kDa. as estimated in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 200mM NaCl, 10% glycerol, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

E3 ubiquitin-protein ligase Itchy homolog, also known as Atrophin-1-interacting protein 4, NFE2-associated polypeptide 1, NAPP1 and ITCH, is a cell membrane protein which contains one C2 domain, one HECT (E6AP-type E3 ubiquitin-protein ligase) domain and contains four WW domains. ITCH acts as an E3 ubiquitin-protein ligase which accepts ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester and then directly transfers the ubiquitin to targeted substrates. It catalyzes 'Lys-29', 'Lys-48' and 'Lys-63'-linked ubiquitin conjugation. ITCH is involved in the control of inflammatory signaling pathways. It is an essential component of a ubiquitin-editing protein complex, comprising also TNFAIP3, TAX1BP1 and RNF11, that ensures the transient nature of inflammatory signaling pathways. ITCH promotes the association of the complex after TNF stimulation. Once the complex is formed, TNFAIP3 deubiquitinates 'Lys-63' polyubiquitin chains on RIPK1 and catalyzes the formation of 'Lys-48' polyubiquitin chains. This leads to RIPK1 proteasomal degradation and consequently termination of the TNF- or LPS-mediated activation of NF- κ B1. Defects in ITCH are the cause of syndromic multisystem autoimmune disease (SMAD) which is characterized by organomegaly, failure to thrive, developmental delay, dysmorphic features and autoimmune inflammatory cell infiltration of the lungs, liver and gut.

References

1. Marchese A. et al., 2003, Dev. Cell 5:709-22. 2. Wang Y. et al., 2006, EMBO J. 25: 5058-70. 3. Bhandari D. et al., 2009, Mol. Biol. Cell 20:1324-39.

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