

Recombinant Mouse ITCH Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51757

Size: 10ug, 100ug

Protein Name: E3 ubiquitin-protein ligase Itchy (EC 2.3.2.26) (HECT-type E3 ubiquitin transferase Itchy homolog)

Synonym: Itch

UniProt ID: Q8C863

UniProt Link: www.uniprot.org/uniprotkb/Q8C863/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 864 AA

Molecular Weight: 99 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSDSGPQLDSMGSLTMKSQLQITVISAKLKENKKNWFGSPYVEVTVDGQSKKTEKCNNTNSPKW
KQPLTVIVTPTSKLCFRVWSHQTLKSDVLLGTAGLDIYETLKSNMKEEVVMTLQLVGDKEPTETM
GDLSVCLDGLQVEAEVVTNGETSCSESTTQNDGCRTRDDTRVSTNGSEDPEVAASGENKRANGN
NSPSLSNGGFKPSRPPRPSRPPPTPRRPASVNGSPSTNSDSDGSSTGSLPPTNTNVNTSTSEGAT
SGLIPLTISGGSGPRPLNTVSQAPLPPGWEQRVDQHGRVYYVDHVEKRTTWDRPEPLPPGWERRV
DNMGRIYYVDHFTRTTTWQRPTLESVRNIEQWQLQRSQLQGAMQQFNQRFIYGNQDLFATSQNKE
FDPLGPLPPGWEKRTDSNGRVYFVNHNTRITQWEDPRSQQQLNEKPLPEGWEMRFTVDGIPYFVD
HNRRATTYIDPRTGKSALDNGPQIAYVRDFKAKVQYFRFWCQQLAMPQHIVTRKTLFEDSFQQI
MSFSPQDLRRRLWVIFPGEEGLDYGGVAREWFFLLSHEVLNPMYCLFEYAGKDNVCLQINPASYINP
DHLKYFRFIGRFIAMALFHGKFIDTGFSLPFYKRILNKPVGLKDLESIDPEFYNSLIWVKENNIEECGLE
MYFSVDKEILGEIKSHDLKPNGGNILVTEENKEEYIRMVAEWRLSRGVVEEQTAFFEGFNEILPQQYL
QYFDAKELEVLLCGMQEIDLNDWQRHAIYRHYTRTSKQIMWFWQFVKEIDNEKMRMLLQFVTGTCR
LPVGGFADLMGSNGPQKFCIEKVGKENWLPRSHTCFNRLDLPYKSYEQLKEKLLFAIEETEGFGQE

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant E3 ubiquitin-protein ligase Itchy (EC 2.3.2.26) (HECT-type E3 ubiquitin transferase Itchy homolog) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: 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 (PubMed:15358865, PubMed:16446428, PubMed:17592138, PubMed:18628966, PubMed:20392206, PubMed:25632008). It catalyzes 'Lys-29', 'Lys-48' and 'Lys-63'-linked ubiquitin conjugation (By similarity). Involved in the control of inflammatory signaling pathways (By similarity). 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 (By similarity). Promotes the association of the complex after TNF stimulation (By similarity). Once the complex is formed, TNFAIP3 deubiquitinates 'Lys-63' polyubiquitin chains on RIPK1 and catalyzes the formation of 'Lys-48'-polyubiquitin chains (By similarity). This leads to RIPK1 proteasomal degradation and consequently termination of the TNF- or LPS-mediated activation of NFkB1 (By similarity). Ubiquitinates RIPK2 by 'Lys-63'-linked conjugation and influences NOD2-dependent signal transduction pathways (By similarity). Regulates the transcriptional activity of several transcription factors involved in immune response (PubMed:11828324, PubMed:15358865). Ubiquitinates NFE2 by 'Lys-63' linkages and is implicated in the control of the development of hematopoietic lineages (By similarity). Mediates JUN ubiquitination and degradation (PubMed:15358865). Mediates JUNB ubiquitination and degradation (PubMed:11828324, PubMed:15358865). Critical regulator of type 2 helper T (Th2) cell cytokine production by inducing JUNB ubiquitination and degradation (PubMed:11828324). Involved in the negative regulation of MAVS-dependent cellular antiviral responses (By similarity). Ubiquitinates MAVS through 'Lys-48'-linked conjugation resulting in MAVS proteasomal degradation (By similarity). Following ligand stimulation, regulates sorting of Wnt receptor FZD4 to the degradative endocytic pathway probably by modulating PI42KA activity (By similarity). Ubiquitinates PI4K2A and negatively regulates its catalytic activity (By similarity). Ubiquitinates chemokine receptor CXCR4 and regulates sorting of CXCR4 to the degradative endocytic pathway following ligand stimulation by ubiquitinating endosomal sorting complex required for transport ESCRT-0 components HGS and STAM (By similarity). Targets DTX1 for lysosomal degradation and controls NOTCH1 degradation, in the absence of ligand, through 'Lys-29'-linked polyubiquitination (PubMed:18628966). Ubiquitinates SNX9 (By similarity). Ubiquitinates MAP3K7 through 'Lys-48'-linked conjugation (PubMed:25632008). Together with UBR5, involved in the regulation of apoptosis and reactive oxygen species levels through the ubiquitination and proteasomal degradation of TXNIP: catalyzes 'Lys-48'-'Lys-63'-branched ubiquitination of TXNIP (By similarity). ITCH synthesizes 'Lys-63'-linked chains, while UBR5 is branching multiple 'Lys-48'-linked chains of substrate initially modified (By similarity). Mediates the antiapoptotic activity of epidermal growth factor through the ubiquitination and proteasomal degradation of p15 BID (PubMed:20392206). Ubiquitinates BRAT1 and this ubiquitination is enhanced in the presence of

NDFIP1 (By similarity). Ubiquitinates NEDD9/HEF1, resulting in proteasomal degradation of NEDD9/HEF1 (By similarity).

Subcellular Localization: Cell membrane ; Peripheral membrane protein ; Cytoplasmic side . Cytoplasm . Nucleus . Early endosome membrane ; Peripheral membrane protein ; Cytoplasmic side . Endosome membrane ; Peripheral membrane protein ; Cytoplasmic side . Note=May be recruited to exosomes by NDFIP1. Localizes to plasma membrane upon CXCL12 stimulation where it co-localizes with CXCL4. Localization to early endosomes is increased upon CXCL12 stimulation where it co-localizes with DTX3L and CXCL4.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.