

Recombinant Human FOXP3 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50340

Size: 10ug, 100ug

Protein Name: Forkhead box protein P3 (Scurfin) [Cleaved into: Forkhead box protein P3, C-terminally processed; Forkhead box protein P3 41 kDa form]

Synonym: FOXP3, IPEX, JM2

UniProt ID: Q9BZS1

UniProt Link: www.uniprot.org/uniprotkb/Q9BZS1/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 431 AA

Molecular Weight: 47 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPNPRPGKPSAPSLALGPSGASPSWRAAPKASDLLGARGPGGTFQGRDLRGGAHASSSSLNPM
PPSQLQLPTLPLVMVAPSGARLGPLPHLQALLQDRPHFMHQLSTVDAHARTPVLQVHPLESPAMISL
TPPTTATGVFSLKARPGLPGLINVASLEWVSREPALLCTFPNPSAPRKDSTLSAVPQSSYPLLANGV
CKWPGCEKVFEEDFLKHCQADHLLDEKGRAQCLLQREMVQSLEQQLVLEKEKLSAMQAHLAKG
MALTKASSVASSDKGCCIVAAGSQGPVPAWSGPREADPSLFAVRRHLWGSHGNSTFPEFLHNM
DYFKFHNMRPPFTYATLIRWAILEAPEKQRTLNEIYHWFTRMFAFFRNHPATWKNAIRHNLSLHKCFV
RVESEKGAVWTVDELEFRKKRSQRPSRCSNPTPGP

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 Forkhead box protein P3 (Scurfin) [Cleaved into: Forkhead box protein P3, C-terminally processed; Forkhead box protein P3 41 kDa form] 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: Transcriptional regulator which is crucial for the development and inhibitory function of regulatory T-cells (Treg) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479, PubMed:24835996, PubMed:30513302, PubMed:32644293). Plays an essential role in maintaining homeostasis of the immune system by allowing the acquisition of full suppressive function and stability of the Treg lineage, and by directly modulating the expansion and function of conventional T-cells (PubMed:23169781). Can act either as a transcriptional repressor or a transcriptional activator depending on its interactions with other transcription factors, histone acetylases and deacetylases (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479). The suppressive activity of Treg involves the coordinate activation of many genes, including CTLA4 and TNFRSF18 by FOXP3 along with repression of genes encoding cytokines such as interleukin-2 (IL2) and interferon-gamma (IFNG) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479). Inhibits cytokine production and T-cell effector function by repressing the activity of two key transcription factors, RELA and NFATC2 (PubMed:15790681). Mediates transcriptional repression of IL2 via its association with histone acetylase KAT5 and histone deacetylase HDAC7 (PubMed:17360565). Can activate the expression of TNFRSF18, IL2RA and CTLA4 and repress the expression of IL2 and IFNG via its association with transcription factor RUNX1 (PubMed:17377532). Inhibits the differentiation of IL17 producing helper T-cells (Th17) by antagonizing RORC function, leading to down-regulation of IL17 expression, favoring Treg development (PubMed:18368049). Inhibits the transcriptional activator activity of RORA (PubMed:18354202). Can repress the expression of IL2 and IFNG via its association with transcription factor IKZF4 (By similarity).

Subcellular Localization: Nucleus . Cytoplasm . Note=Predominantly expressed in the cytoplasm in activated conventional T-cells whereas predominantly expressed in the nucleus in regulatory T-cells (Treg). The 41 kDa form derived by proteolytic processing is found exclusively in the chromatin fraction of activated Treg cells (By similarity).

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.