

Recombinant Rat PO4F1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52302

Size: 10ug, 100ug

Protein Name: POU domain, class 4, transcription factor 1 (Brain-specific homeobox/POU domain protein 3A) (Brain-3A) (Brn-3A)

Synonym: Pou4f1, Brn-3, Brn3, Brn3a

UniProt ID: P20266

UniProt Link: www.uniprot.org/uniprotkb/P20266/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 420 AA

Molecular Weight: 43 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMSMNSKQPHFAMHPTLPEHKYPSLHSSSEAIRRACLPTPPLQSNLFASLDETLLARAEALAAVDIA
VSQGKSHPFKPDATYHTMNSVPCTSTSTVPLAHHHHHHHHHHQALEPGDLLDHISSPSLALMAGAGG
AGAAGGGGAPTRPRGAGGPGGGGGPGGGGPGVAGRRRGPGGGGGPGGGLLGXSAHPPHMH
HGXGHLSHPAAAAAMNMPGSLPHPLVAAAAHHGAAAAAAAAAAGQVAAASAAAAVVGAAGLASI
CSDTDPRELEAFAERFKQRRIKLGVQTADVGSALANLKIPGVGSLSQSTICRFESLTLSHNNMIALK
PILQAWLEEAEGAQREKMNKPELFNGGEKKRKRTSIAAPEKRSLEAYFAVQPRPSSEKIAAIAEKLDL
KKNVVRVWFCNQRQKQKRMKFSATY

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 POU domain, class 4, transcription factor 1 (Brain-specific homeobox/POU domain protein 3A) (Brain-3A) (Brn-3A) 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: Multifunctional transcription factor with different regions mediating its different effects (PubMed:10640682). Acts by binding (via its C-terminal domain) to sequences related to the consensus octamer motif 5'-ATGCAAAT-3' in the regulatory regions of its target genes. Regulates the expression of specific genes involved in differentiation and survival within a subset of neuronal lineages (PubMed:11053412). It has been shown that activation of some of these genes requires its N-terminal domain, maybe through a neuronal-specific cofactor. Activates BCL2 expression and protects neuronal cells from apoptosis (via the N-terminal domain). Induces neuronal process outgrowth and the coordinate expression of genes encoding synaptic proteins. Exerts its major developmental effects in somatosensory neurons and in brainstem nuclei involved in motor control. Stimulates the binding affinity of the nuclear estrogen receptor ESR1 to DNA estrogen response element (ERE), and hence modulates ESR1-induced transcriptional activity. May positively regulate POU4F2 and POU4F3. Regulates dorsal root ganglion sensory neuron specification and axonal projection into the spinal cord. Plays a role in TNFSF11-mediated terminal osteoclast differentiation. Negatively regulates its own expression interacting directly with a highly conserved autoregulatory domain surrounding the transcription initiation site (By similarity).; [Isoform 2]: Able to act as a transcription factor, cannot regulate the expression of the same subset of genes as isoform 1. Does not have an antiapoptotic effect on neuronal cells.

Subcellular Localization: Nucleus . Cytoplasm .

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.