Recombinant TFE2 protein (His tag)

Catalog Number	537557
Synonyms	Class B basic helix-loop-helix protein 21; bHLHb21; Immunoglobulin enhancer-binding factor E12/E47; Immunoglobulin transcription factor 1; Kappa-E2-binding factor; Transcription factor 3; TCF-3; Transcription factor ITF-1
Species	Human
Expression System	E. coli
Accession	P15923
Molecular Weight	Predictes a molecular mass of 10.66 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 11 kDa band.

Product Information

Sequence Region	538-613
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 538-613 aa (P15923) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Introducing the recombinant human Transcription factor E2-alpha (TCF3) bHLH domain fragment (residues 538-613), a highly specific tool designed for researchers studying transcriptional regulation, neuronal differentiation, and mesenchymal to epithelial transition. This 76-amino acid fragment fully encompasses the essential basic helix-loop-helix (bHLH) domain, enabling targeted investigation of DNA binding and protein dimerization mechanisms. Transcription factor E2-alpha (TCF3) is a crucial transcriptional regulator in human cells that initiates neuronal differentiation and facilitates mesenchymal to epithelial transition. It functions through heterodimerization with tissue-specific bHLH proteins to determine cell fate during embryogenesis, particularly in muscle and early B-cell differentiation. The protein binds E-box DNA motifs (5'-CANNTG-3'), including the kappa-E2 site in immunoglobulin gene enhancers and insulin gene regulatory sequences. Isoform E47 specifically assists ATOH7 in DNA binding at 5'-CAGGTG-3' consensus sequences. TCF3 is localized to the nucleus, where it executes its transcriptional regulatory functions. The bHLH domain contained within this fragment represents the core functional region responsible for DNA recognition and protein-protein interactions central to these biological processes.