

# Recombinant Full Length Human POU Class 5 Homeobox 1/POU5F1 Protein

**Cat. No.** POU5F1-3631H    **Lot. No.** (See product label)

## SPECIFICATION

**Product Overview**                      The recombinant Human Oct4 is produced as N-terminal TAT (transcriptional activator protein) fusion protein. Recombinant Human TAT-Oct4 produced in E. coli is a single, non-glycosylated, polypeptide chain containing 360 amino acids and having a molecular mass of 38.6 kDa.

**Species**                                      Human

**Source**                                        E.coli

**ProteinLength**                            1-360 a.a.

**Description**                                Octamer-binding protein 4 (Oct4) is a homeodomain transcription factor of the POU family, expressed in embryonic stem (ES) cells and embryonic carcinoma (EC) cells. Oct4 is critically involved in the signaling pathway for maintaining self-renewal and pluripotency of ES cells. Oct4 has two distinct DNA binding domains which independently bind half-sites of the canonical octamer motif. This flexibility enables Oct4 to bind with distinct DNA motifs by forming heterodimers with other transcription factors or by forming homodimers in several conformations. Human Oct4 contains a 75a.a. POU specific (POUS) domain and a 60aa POU-Homeo-(POUH) domain connected by a linker region. Human Oct4 specifically interact with Octamer motif ATGCAAAT. Moreover, two proline-rich domains in N-terminal and C-terminal regions are critical for Oct4 transactivation. Oct4 regulates a number of target genes and it has been shown to work in concert with other transcription factors including Sox2 as

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well as Nanog to support stem cell potency and self-renewal.

**Purity**

Greater than 95% as determined by (a) Analysis by RP-HPLC; (b) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

**Amino-Acid Sequence**

The sequence of the first five N-terminal amino acids was determined and was found to be Met-Gly-Arg-Lys-Lys.

**Endotoxin**

Less than 0.1ng/μg (1.0EU/μg) of rHuTAT-Oct4 as determined by LAL test.

**Form**

The protein was lyophilized after extensive dialysis against PBS.

**Reconstitution**

It is recommended to reconstitute the lyophilized rHuTAT-Oct4 in sterile PBS not less than 100g/ml, which can then be further diluted to other aqueous solutions.

**Storage**

Lyophilized rHuTAT-Oct4 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rHuTAT-Oct4 should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles.

## GENE INFORMATION

**Gene Name**

POU5F1 POU class 5 homeobox 1 [ Homo sapiens ]

**Official Symbol**

POU5F1

**Synonyms**

POU5F1; POU class 5 homeobox 1; OCT3; OCT4; OTF3; OTF4; OTF-3; Oct-3; Oct-4; MGC22487; POU domain, class 5, transcription factor 1; OTTHUMP00000029292; OTTHUMP00000221150; OTTHUMP00000221151; OTTHUMP00000239665; octamer-binding protein 3; octamer-binding protein 4; POU domain transcription

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factor OCT4; octamer-binding transcription factor 3; octamer-binding transcription factor-3; POU-type homeodomain-containing DNA-binding protein; Octamer-binding protein 3; Octamer-binding protein 4; Octamer-binding transcription factor 3

**Gene ID** [5460](#)

**mRNA Refseq** [NM\\_002701](#)

**Protein Refseq** [NP\\_002692](#)

**MIM** [164177](#)

**UniProt ID** [Q01860](#)

**Chromosome Location** 6p21.31

**Function** DNA binding; miRNA binding; protein binding; sequence-specific DNA binding; sequence-specific DNA binding RNA polymerase II transcription factor activity; sequence-specific DNA binding transcription factor activity; transcription factor binding; ubiquitin protein ligase binding

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