

**Monoclonal Anti- Octamer-binding transcription factor 4, OCT-4****Catalog#** BMA1032**Lot #** Check on the product label**Size** 100 µg**Isotype** IgG1**Clone #** N65**Host** Mouse**Reactivity**

Human, mouse

**Product Form** Liquid**Purification** Protein A purified**Immunogen**

Recombinant OCT-4 protein.

**Recommend Application**

Western Blot, WB (1:500-1:2,000)

Immunocytochemistry, ICC (1:100)

Other applications have not been tested.

The optimal dilutions should be determined by end user.

**Storage Buffer**

1\*PBS (pH7.4), 0.2% BSA, 40% Glycerol and 0.05% Sodium Azide.

**Storage Instruction**

Store at 4°C after thawing (1 week).

Aliquot and store at -20°C for long term (at least one year).

Avoid repeated freeze and thaw cycles.

**Background**

Oct-4 (octamer-binding transcription factor 4) also known as POU5F1 (POU domain, class 5, transcription factor 1) is a homeodomain transcription factor of the POU family. This protein is critically

involved in the self-renewal of undifferentiated embryonic stem cells. [1]

As such, it is frequently used as a marker for undifferentiated cells. A critical amount of Oct3/4 is required to sustain stem cell self-renewal, and up- or downregulation induces divergent developmental programs. [2] It has also been showed that Oct3 has a role in cardiac development in the early mouse embryo. [3] Oct-4 expression must be closely regulated; too much or too little will cause differentiation of the cells. [4]

**Reference**

1. Young Lab- Core Transcriptional Regulatory Circuitry in Human Embryonic Stem Cells at MIT.

2. Niwa, H., Miyazaki, J., Smith, A. G. Quantitative expression of Oct-3/4 defines differentiation, dedifferentiation or self-renewal of ES cells. *Nature Genet.* 24: 372-376, 2000.

3. Zeineddine, D., Papadimou, E., Chebli, K., Gineste, M., Liu, J., Grey, C., Thurig, S., Behfar, A., Wallace, V. A., Skerjanc, I. S., Puceat, M. Oct-3/4 dose dependently regulates specification of embryonic stem cells toward a cardiac lineage and early heart development. *Dev. Cell* 11: 535-546, 2006.

4. Niwa H, Miyazaki J, Smith AG (April 2000). "Quantitative expression of Oct-3/4 defines differentiation, dedifferentiation or self-renewal of ES cells". *Nat. Genet.* 24 (4): 372–6.

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