

# Oct-1 (YL15): sc-53830



The Power to Question

## BACKGROUND

POU domain proteins contain a bipartite DNA binding domain divided by a flexible linker that enables them to adopt various monomer configurations on DNA. The versatility of POU protein operation is additionally conferred at the dimerization level. The POU dimer from the Oct-1 gene formed on the palindromic Oct factor-recognition element, or PORE (ATTGAAATGCAAAT), could recruit the transcriptional co-activator OBF1. Studies of tissue-specific expression of immunoglobulin promoters demonstrate the importance of an octamer, ATTTGCAT, and the proteins that bind to it. This is a regulatory element important for tissue- and cell-specific transcription, as well as for transcription of a number of housekeeping genes. The Oct-1 gene encodes one protein, NF-A1, which is found in nuclear extracts from all cell types and thus is not specific to lymphoid cells as is the protein NF-A2, which is encoded by the Oct-2 gene.

## REFERENCES

1. Clerc, R.G., et al. 1988. The B cell specific Oct-2 protein contains POU box- and homeobox-type domains. *Genes Dev.* 2: 1570-1581.
2. Sturm, R.A., et al. 1988. The ubiquitous octamer-binding protein Oct-1 contains a POU domain with a homeobox subdomain. *Genes Dev.* 2: 1582-1599.
3. Scheidereit, C., et al. 1988. A human lymphoid-specific transcription factor that activates immunoglobulin genes is a homeobox protein. *Nature* 336: 551-557.
4. Kristie, T.M., et al. 1989. The octamer-binding proteins form multi-protein DNA complexes with the HSV  $\alpha$  TIF regulatory protein. *EMBO J.* 8: 4229-4238.
5. Verrijzer, C.P., et al. 1990. The DNA binding domain (POU domain) of transcription factor Oct-1 suffices for stimulation of DNA replication. *EMBO J.* 9: 1883-1888.
6. Petryniak, B., et al. 1990. Characterization of chicken octamer-binding proteins demonstrates that POU domain-containing homeobox transcription factors have been highly conserved during vertebrate evolution. *Proc. Natl. Acad. Sci. USA* 87: 1099-1103.
7. Verrijzer, C.P., et al. 1990. The Oct-1 homeodomain contacts only part of the octamer sequence and full Oct-1 DNA-binding activity requires the POU-specific domain. *Genes Dev.* 4: 1964-1974.
8. Schonemann, M.D., et al. 1998. POU domain factors in neural development. *Adv. Exp. Med. Biol.* 449: 39-53.

## CHROMOSOMAL LOCATION

Genetic locus: POU2F1 (human) mapping to 1q24.1; Pou2f1 (mouse) mapping to 1 H2.3.

## SOURCE

Oct-1 (YL15) is a mouse monoclonal antibody raised against recombinant full length Oct-1 of human origin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Oct-1 (YL15) is recommended for detection of Oct-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Oct-1 siRNA (h): sc-36119, Oct-1 siRNA (m): sc-36120, Oct-1 shRNA Plasmid (h): sc-36119-SH, Oct-1 shRNA Plasmid (m): sc-36120-SH, Oct-1 shRNA (h) Lentiviral Particles: sc-36119-V and Oct-1 shRNA (m) Lentiviral Particles: sc-36120-V.

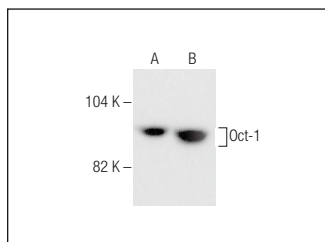
Molecular Weight of Oct-1: 95 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

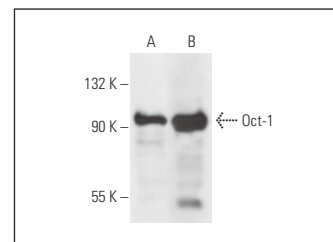
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



Oct-1 (YL15): sc-53830. Western blot analysis of Oct-1 expression in Jurkat (A) and Ramos (B) nuclear extracts.



Oct-1 (YL15): sc-53830. Western blot analysis of Oct-1 expression in Ramos whole cell lysate (A) and HeLa nuclear extract (B).

## SELECT PRODUCT CITATIONS

1. Lu, H., et al. 2014. CK2 phosphorylates and inhibits TAp73 tumor suppressor function to promote expression of cancer stem cell genes and phenotype in head and neck cancer. *Neoplasia* 16: 789-800.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.