

# Tankyrase-1 (6D790): sc-73114

## BACKGROUND

Tankyrase-1 (TRF1-interacting ankyrin-related ADP-ribose polymerase-1) and the closely related homolog Tankyrase-2 are poly(ADP-ribose) polymerases (PARPs) that co-localize and use an ankyrin-repeat domain to bind diverse proteins, including TRF-1 (telomere-repeat-binding factor-1), IRAP (insulin-responsive aminopeptidase) and TAB182. Tankyrase-1 (also known as TNKS and TNKS1) and Tankyrase-2 (also known as TNKS2, TNKL and TANK2) interact with the same set of proteins and probably mediate overlapping functions, both at telomeres and in vesicular compartments. Overexpression of Tankyrase-1 in the nucleus promotes telomere elongation, suggesting that Tankyrase-1 may regulate access of telomerase to the telomeric complex. Overexpression of Tankyrase-2 in the nucleus releases endogenous TRF1 from telomeres, establishing Tankyrase-2 as a PARP with itself and TRF1 as acceptors of ADP-ribosylation, and suggesting the possibility of a role for Tankyrase-2 at telomeres. The ankyrin (ANK) domain of Tankyrase-2 comprises five subdomains that provide redundant binding sites for IRAP. Tankyrase-2 lacks the N-terminal histidine/proline/serine-rich region of Tankyrase-1, but contains a corresponding ankyrin repeat region, sterile  $\alpha$  motif module and poly(ADP-ribose) polymerase homology domain. The gene encoding Tankyrase-2 is widely expressed, with mRNA transcripts particularly abundant in skeletal muscle and placenta.

## REFERENCES

1. Uchida, K., et al. 1987. Nucleotide sequence of a full length cDNA for human fibroblast poly(ADP-ribose) polymerase. *Biochem. Biophys. Res. Commun.* 148: 617-622.
2. Schreiber, V., et al. 1992. The human poly(ADP-ribose) polymerase nuclear localization signal is a bipartite element functionally separate from DNA binding and catalytic activity. *EMBO J.* 11: 3263-3269.
3. Chong, L., et al. 1995. A human telomeric protein. *Science* 270: 1663-1667.
4. van Steensel, B., et al. 1997. Control of telomere length by the human telomeric protein TRF1. *Nature* 385: 740-743.
5. Smith, S., et al. 1998. Tankyrase, a poly(ADP-Ribose) polymerase at human telomeres. *Cell* 282: 1484-1487.
6. Smith, S., et al. 1999. Cell cycle dependent localization of the telomeric PARP, Tankyrase, to nuclear pore complexes and centrosomes. *J. Cell Sci.* 112: 3649-2656.

## CHROMOSOMAL LOCATION

Genetic locus: TNKS (human) mapping to 8p23.1; Tnks (mouse) mapping to 8 A4.

## SOURCE

Tankyrase-1 (6D790) is a mouse monoclonal antibody raised against full length Tankyrase-1 of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 500  $\mu$ l PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Tankyrase-1 (6D790) is recommended for detection of Tankyrase-1 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); may cross-react with Tankyrase-2.

Suitable for use as control antibody for Tankyrase-1 siRNA (h): sc-44139, Tankyrase-1 siRNA (m): sc-44140, Tankyrase-1 shRNA Plasmid (h): sc-44139-SH, Tankyrase-1 shRNA Plasmid (m): sc-44140-SH, Tankyrase-1 shRNA (h) Lentiviral Particles: sc-44139-V and Tankyrase-1 shRNA (m) Lentiviral Particles: sc-44140-V.

Molecular Weight of Tankyrase-1: 170 kDa.

Positive Controls: A549 cell lysate: sc-2413 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.