

# Tankyrase-1/2 (T-14): sc-54347

## BACKGROUND

Tankyrase-1 (TRF1-interacting ankyrin-related ADP-ribose polymerase 1) and Tankyrase-2 are closely related 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 has been shown to promote telomere elongation, suggesting that Tankyrase 1 may regulate access of telomerase to the telomeric complex. Overexpression of Tankyrase-2 in the nucleus has been shown to release 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, TNKS2 (human) mapping to 10q23.32; Tnks (mouse) mapping to 8 A4, Tnks2 (mouse) mapping to 19 C2.

## SOURCE

Tankyrase-1/2 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Tankyrase-1 of human origin.

## STORAGE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54347 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Tankyrase-1/2 (T-14) is recommended for detection of Tankyrase-1 and Tankyrase-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Tankyrase-1/2 (T-14) is also recommended for detection of Tankyrase-1 and Tankyrase-2 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Tankyrase-1/2: 130/170 kDa.

Positive Controls: A549 cell lysate: sc-2413, Jurkat whole cell lysate: sc-2204 or rat testis extract: sc-2400.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.



Try **Tankyrase-1/2 (E-10): sc-365897** or **Tankyrase-1 (BL-2): sc-130422**, our highly recommended monoclonal alternatives to Tankyrase-1/2 (T-14).