

# TYW4 (G-14): sc-160890

## BACKGROUND

Wybutosine, a derivative of wyosine, is a tricyclic hypermodified guanosine found in eukaryotic and archaeal tRNAs. TYW4 (tRNA-yW synthesizing protein 4), also known as PPM2 (p21WAF1/CIP1 promoter-interacting protein) or LCMT2 (leucine carboxyl methyltransferase 2), is a 686 amino acid protein belonging to the methyltransferase superfamily. A component of the wybutosine (yW) biosynthesis pathway, TYW4 may act as a S-adenosyl-L-methionine-dependent methyltransferase that catalyzes the final step of yW biosynthesis, methylation and methoxycarbonylation. TYW4 is encoded by a gene located on human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome. Angelman syndrome, Prader-Willi syndrome, Tay-Sachs disease and Marfan syndrome are all associated with defects in chromosome 15-localized genes.

## REFERENCES

1. Noma, A., et al. 2006. Biosynthesis of wybutosine, a hyper-modified nucleoside in eukaryotic phenylalanine tRNA. *EMBO J.* 25: 2142-2154.
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3. Zody, M.C., et al. 2006. Analysis of the DNA sequence and duplication history of human chromosome 15. *Nature* 440: 671-675.
4. Makoff, A.J. and Flomen, R.H. 2007. Detailed analysis of 15q11-q14 sequence corrects errors and gaps in the public access sequence to fully reveal large segmental duplications at breakpoints for Prader-Willi, Angelman, and inv dup(15) syndromes. *Genome Biol.* 8: R114
5. Suzuki, Y., et al. 2007. Crystal structure of the radical SAM enzyme catalyzing tricyclic modified base formation in tRNA. *J. Mol. Biol.* 372: 1204-1214.
6. Goto-Ito, S., et al. 2007. Structure of an archaeal TYW1, the enzyme catalyzing the second step of wye-base biosynthesis. *Acta Crystallogr. D Biol. Crystallogr.* 63: 1059-1068.
7. Suzuki, Y., et al. 2009. Structural basis of tRNA modification with CO<sub>2</sub> fixation and methylation by wybutosine synthesizing enzyme TYW4. *Nucleic Acids Res.* 37: 2910-2925.

## CHROMOSOMAL LOCATION

Genetic locus: LCMT2 (human) mapping to 15q15.3; Lcmt2 (mouse) mapping to 2 E5.

## SOURCE

TYW4 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TYW4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160890 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TYW4 (G-14) is recommended for detection of TYW4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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); non cross-reactive with other TYW family members.

TYW4 (G-14) is also recommended for detection of TYW4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for TYW4 siRNA (h): sc-90110, TYW4 siRNA (m): sc-154830, TYW4 shRNA Plasmid (h): sc-90110-SH, TYW4 shRNA Plasmid (m): sc-154830-SH, TYW4 shRNA (h) Lentiviral Particles: sc-90110-V and TYW4 shRNA (m) Lentiviral Particles: sc-154830-V.

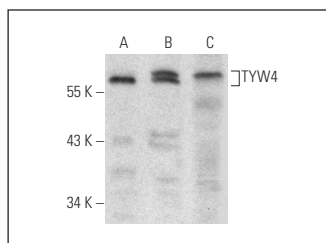
Molecular Weight of TYW4: 76 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SK-BR-3 cell lysate: sc-2218 or mouse liver extract: sc-2256.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



TYW4 (G-14): sc-160890. Western blot analysis of TYW4 expression in HeLa (A) and SKBR-3 (B) whole cell lysates and mouse liver tissue extract (C).

## 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.