

# Asparagine synthetase (C-14): sc-46785

## BACKGROUND

Glutamine-hydrolyzing Asparagine synthetase is also commonly designated cell cycle control protein TS11. Asparagine synthetase plays an important role in the amino-acid biosynthesis pathway and is also important for L-asparagine biosynthesis. Via the L-glutamine route, Asparagine synthetase is involved in the synthesis of L-asparagine from L-aspartate. The protein contains one Asparagine synthetase domain and one type-2 glutamine amidotransferase domain. The cell-cycle regulated gene encoding for Asparagine synthetase, TS11, is necessary for G<sub>1</sub> progression.

## REFERENCES

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2. Van Heeke, G. and Schuster, S. 1989. The N-terminal cysteine of human Asparagine synthetase is essential for glutamine-dependent activity. *J. Biol. Chem.* 264: 19475-19477.
3. Greco, A., Gong, S., Ittmann, M. and Basilico, C. 1989. Organization and expression of the cell cycle gene, TS11, that encodes Asparagine synthetase. *Mol. Cell. Biol.* 9: 2350-2359.
4. Chen, H., Pan, Y.X., Dudenhausen, E.E. and Kilberg, M.S. 2004. Amino acid deprivation induces the transcription rate of the human Asparagine synthetase gene through a timed program of expression and promoter binding of nutrient-responsive basic region/leucine zipper transcription factors as well as localized histone acetylation. *J. Biol. Chem.* 279: 50829-50839.
5. Krejci, O., Starkova, J., Otova, B., Madzo, J., Kalinova, M., Hrusak, O. and Trka, J. 2004. Upregulation of Asparagine synthetase fails to avert cell cycle arrest induced by L-asparaginase in TEL/AML1-positive leukaemic cells. *Leukemia* 18: 434-441.
6. Fine, B.M., Kaspers, G.J., Ho, M., Loonen, A.H. and Boxer, L.M. 2005. A genome-wide view of the *in vitro* response to L-asparaginase in acute lymphoblastic leukemia. *Cancer Res.* 65: 291-299.

## CHROMOSOMAL LOCATION

Genetic locus: ASNS (human) mapping to 7q21.3; Asns (mouse) mapping to 6 A1.

## SOURCE

Asparagine synthetase (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Asparagine synthetase 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-46785 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Asparagine synthetase (C-14) is recommended for detection of Asparagine synthetase 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).

Asparagine synthetase (C-14) is also recommended for detection of Asparagine synthetase in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Asparagine synthetase siRNA (h): sc-60212, Asparagine synthetase siRNA (m): sc-60213, Asparagine synthetase shRNA Plasmid (h): sc-60212-SH, Asparagine synthetase shRNA Plasmid (m): sc-60213-SH, Asparagine synthetase shRNA (h) Lentiviral Particles: sc-60212-V and Asparagine synthetase shRNA (m) Lentiviral Particles: sc-60213-V.

Molecular Weight of Asparagine synthetase: 64 kDa.

## 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.

## 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.

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Try **Asparagine synthetase (G-10): sc-365809** or **Asparagine synthetase (F-3): sc-376151**, our highly recommended monoclonal alternatives to Asparagine synthetase (C-14). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Asparagine synthetase (G-10): sc-365809**.