

# Asparagine synthetase (86.48): sc-135728

## 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, it 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

1. Andrulis, I.L., Chen, J. and Ray, P.N. 1987. Isolation of human cDNAs for Asparagine synthetase and expression in Jensen rat sarcoma cells. *Mol. Cell. Biol.* 7: 2435-2443.
2. Van Heeke, G. and Schuster, S.M. 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.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.

## SOURCE

Asparagine synthetase (86.48) is a mouse monoclonal antibody raised against recombinant Asparagine synthetase of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

Asparagine synthetase (86.48) is recommended for detection of Asparagine synthetase of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of Asparagine synthetase: 64 kDa.

## RESEARCH USE

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

## PROTOCOLS

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



See **Asparagine synthetase (G-10): sc-365809** for Asparagine synthetase antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.