

# ACSBG1 (G-14): sc-162474

## BACKGROUND

ACSBG1 (acyl-CoA synthetase bubblegum family member 1), also known as Lipodisin, BG1, BGM, LPD or GR-LACS, is a 724 amino acid protein that localizes to both the cytoplasm and the endoplasmic reticulum and belongs to the ATP-dependent AMP-binding enzyme family. Expressed primarily in brain and at lower levels in adrenal gland and testis, ACSBG1 functions to mediate the activation of long-chain and very long-chain fatty acids, thereby playing an important role in the synthesis and degradation of cellular lipids. Defects in the gene encoding ACSBG1 may be associated with X-linked adrenoleukodystrophy (X-ALD), a neurodegenerative disorder that affects the adrenal glands and the white matter of the brain and is characterized by urinary disturbances, sensory loss and cognitive defects.

## REFERENCES

- Smith, K.D., Kemp, S., Braiterman, L.T., Lu, J.F., Wei, H.M., Geraghty, M., Stetten, G., Bergin, J.S., Pevsner, J. and Watkins, P.A. 1999. X-linked adrenoleukodystrophy: genes, mutations, and phenotypes. *Neurochem. Res.* 24: 521-535.
- Moriya-Sato, A., Hida, A., Inagawa-Ogashiwa, M., Wada, M.R., Sugiyama, K., Shimizu, J., Yabuki, T., Seyama, Y. and Hashimoto, N. 2000. Novel acyl-CoA synthetase in adrenoleukodystrophy target tissues. *Biochem. Biophys. Res. Commun.* 279: 62-68.
- Steinberg, S.J., Morgenthaler, J., Heinzer, A.K., Smith, K.D. and Watkins, P.A. 2000. Very long-chain acyl-CoA synthetases. Human "bubblegum" represents a new family of proteins capable of activating very long-chain fatty acids. *J. Biol. Chem.* 275: 35162-35169.
- Pei, Z., Oey, N.A., Zuidervaart, M.M., Jia, Z., Li, Y., Steinberg, S.J., Smith, K.D. and Watkins, P.A. 2003. The acyl-CoA synthetase "bubblegum" (lipodisin): further characterization and role in neuronal fatty acid  $\beta$ -oxidation. *J. Biol. Chem.* 278: 47070-47078.
- Fraisl, P., Forss-Petter, S., Zigman, M. and Berger, J. 2004. Murine bubblegum orthologue is a microsomal very long-chain acyl-CoA synthetase. *Biochem. J.* 377: 85-93.
- Asheuer, M., Bieche, I., Laurendeau, I., Moser, A., Hainque, B., Vidaud, M. and Aubourg, P. 2005. Decreased expression of ABCD4 and BG1 genes early in the pathogenesis of X-linked adrenoleukodystrophy. *Hum. Mol. Genet.* 14: 1293-1303.
- Pei, Z., Jia, Z. and Watkins, P.A. 2006. The second member of the human and murine bubblegum family is a testis- and brainstem-specific acyl-CoA synthetase. *J. Biol. Chem.* 281: 6632-6641.

## CHROMOSOMAL LOCATION

Genetic locus: ACSBG1 (human) mapping to 15q25.1; Acsbg1 (mouse) mapping to 9 A5.3.

## SOURCE

ACSBG1 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ACSBG1 of human origin.

## 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-162474 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ACSBG1 (G-14) is recommended for detection of ACSBG1 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); non cross-reactive with ACSBG2.

ACSBG1 (G-14) is also recommended for detection of ACSBG1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACSBG1 siRNA (h): sc-89919, ACSBG1 siRNA (m): sc-140826, ACSBG1 shRNA Plasmid (h): sc-89919-SH, ACSBG1 shRNA Plasmid (m): sc-140826-SH, ACSBG1 shRNA (h) Lentiviral Particles: sc-89919-V and ACSBG1 shRNA (m) Lentiviral Particles: sc-140826-V.

Molecular Weight of ACSBG1: 80 kDa.

Positive Controls: mouse brain extract: sc-2253.

## 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.