

# COASY (E-12): sc-107495

## BACKGROUND

COASY (coenzyme A synthase), also known as NBP (nucleotide binding protein), DPCK (dephospho-coenzyme A kinase), PPAT (pantetheine-phosphate adenylyltransferase), UKR1 or pOV-2, is a bifunctional enzyme involved in the biosynthesis of coenzyme A (CoA). COASY exhibits both Ppat activity and DPCK activity, catalyzing steps four and five, respectively, of the CoA biosynthetic pathway. Functioning as a widely expressed monomer and induced by phospholipids, COASY localizes to the outer mitochondrial membrane and facilitates the conversion of 4'-phosphopantetheine to dephospho-CoA and the subsequent generation of CoA. CoA is an important molecule in the cell, participating in carbohydrate, amino acid and fatty acid metabolism. It is the predominant acetyl and acyl group carrier and is used as a substrate by approximately 4% of all cellular enzymes. Due to alternative splicing events, an additional isoform of COASY, namely COASY  $\beta$ , is expressed in brain and contains an extra 29 amino acids at the N-terminus.

## REFERENCES

1. Aghajanian, S. and Worrall, D.M. 2002. Identification and characterization of the gene encoding the human phosphopantetheine adenylyltransferase and dephospho-CoA kinase bifunctional enzyme (CoA synthase). *Biochem. J.* 365: 13-18.
2. Daugherty, M., et al. 2002. Complete reconstitution of the human coenzyme A biosynthetic pathway via comparative genomics. *J. Biol. Chem.* 277: 21431-21439.
3. Zhyvoloup, A., et al. 2002. Molecular cloning of CoA synthase. The missing link in CoA biosynthesis. *J. Biol. Chem.* 277: 22107-22110.
4. Zhyvoloup, A., et al. 2003. Subcellular localization and regulation of coenzyme A synthase. *J. Biol. Chem.* 278: 50316-50321.
5. Nemazany, I., et al. 2004. Specific interaction between S6K1 and CoA synthase: a potential link between the mTOR/S6K pathway, CoA biosynthesis and energy metabolism. *FEBS Lett.* 578: 357-362.

## CHROMOSOMAL LOCATION

Genetic locus: COASY (human) mapping to 17q21.2; Coasy (mouse) mapping to 11 D.

## SOURCE

COASY (E-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of COASY 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-107495 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

COASY (E-12) is recommended for detection of COASY of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

COASY (E-12) is also recommended for detection of COASY in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for COASY siRNA (h): sc-93576, COASY siRNA (m): sc-142448, COASY shRNA Plasmid (h): sc-93576-SH, COASY shRNA Plasmid (m): sc-142448-SH, COASY shRNA (h) Lentiviral Particles: sc-93576-V and COASY shRNA (m) Lentiviral Particles: sc-142448-V.

Molecular Weight of COASY: 60 kDa.

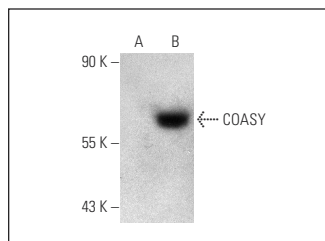
Molecular Weight of COASY  $\beta$ : 70 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or COASY (h2): 293T Lysate: sc-117292.

## 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



COASY (E-12): sc-107495. Western blot analysis of COASY expression in non-transfected: sc-117752 (A) and human COASY transfected: sc-117292 (B) 293T whole cell lysates.

## STORAGE

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