

ADE2 (C-20): sc-16150

BACKGROUND

Two successive steps in *de novo* purine biosynthesis are catalyzed by the enzymes 5-aminoimidazole ribonucleotide (AIR) carboxylase and 4-[(N-succinylamino)carbonyl]-5-aminoimidazole ribonucleotide (SAICAR) synthetase. In vertebrates, a bifunctional enzyme, ADE2 (also designated PurCE/AIRC) catalyzes successive carboxylation and aspartylation steps of AIR to form SAICAR. ADE2 is transcribed from a 558 bp intergenic promoter region, which is bound by NRF-1 and Sp1 at sites within the 215-260 region. The intergenic region is an integrated bidirectional promoter and a novel initiator-like element plays a central role in coordinating expression of the divergently transcribed ADE2 and GPAT genes. The ADE2 mRNA levels increase approximately five to six fold in G₁/S phase of the cell cycle over those in G₀ phase in synchronized rat 3Y1 fibroblasts. The ADE2 gene encodes enzyme of AIRC at step 6 and SAICR synthetase at step 7 in *de novo* purine nucleotide synthesis. The ADE2 encoded enzyme has no ATP dependence and no common cofactors or metals are required for catalysis. Activities of ADE2 enzyme are found in lysates of human erythrocytes, thrombocytes and leukocytes and in homogenate of the stomach biopsy sample, but not in blood plasma and bile.

REFERENCES

- Chen, Z.D., et al. 1990. Cloning of a chicken liver cDNA encoding 5-aminoimidazole ribonucleotide carboxylase and 5-aminoimidazole-4-N-succinocarboxamide ribonucleotide synthetase by functional complementation of *Escherichia coli* pur mutants. *Proc. Natl. Acad. Sci. USA* 87: 3097-3101.
- Alenin, V.V., et al. 1990. Testing the activity of enzymes responsible for biosynthesis of purine nucleotides AIR-carboxylase and SAICAR-synthase in human cell extracts. *Vopr. Med. Khim.* 36: 59-63.
- Firestone, S.M., et al. 1994. Carboxylases in *de novo* purine biosynthesis. Characterization of the *Gallus gallus* bifunctional enzyme. *Biochemistry* 33: 11917-11926.

CHROMOSOMAL LOCATION

Genetic locus: PAICS (human) mapping to 4q12; Paics (mouse) mapping to 5 C3.3.

SOURCE

ADE2 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ADE2 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-16150 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ADE2 (C-20) is recommended for detection of ADE2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

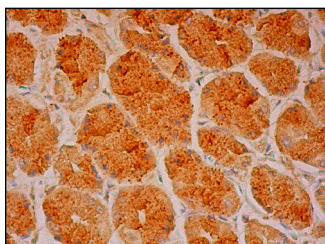
ADE2 (C-20) is also recommended for detection of ADE2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ADE2 siRNA (h): sc-105042, ADE2 siRNA (m): sc-140878, ADE2 shRNA Plasmid (h): sc-105042-SH, ADE2 shRNA Plasmid (m): sc-140878-SH, ADE2 shRNA (h) Lentiviral Particles: sc-105042-V and ADE2 shRNA (m) Lentiviral Particles: sc-140878-V.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



ADE2 (C-20): sc-16150. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Zhao, A., et al. 2013. Transiently transfected purine biosynthetic enzymes form stress bodies. *PLoS ONE* 8: e56203.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.