SANTA CRUZ BIOTECHNOLOGY, INC.

StAR (D-2): sc-166821

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Steroidogenic acute regulatory (StAR) protein appears to mediate the rapid increase in pregnenolone synthesis stimulated by tropic hormones. StAR increases pregnenolone synthesis more than 4-fold and a major StAR transcript of 1.6 kb is found in ovary and testis. During ongoing growth and differentiation of the follicle of the ovary, the immunoreactivity of StAR tends to shift from the granulosa cells of early antral follicles to the theca cell layers in the adult. The first and rate-limiting step of steroidogenesis is the transfer of cholesterol from the outer mitochondrial membrane to the inner membrane where it is converted to pregnenolone by cytochrome P450 side-chain cleavage. This reaction is modulated in the gonads and adrenals by StAR, however, the mechanism used by StAR is not understood. This protein was isolated from a human adrenal cortex library and nonsense mutations in the StAR gene can cause lipoid congenital adrenal hyperplasia. The gene which encodes StAR maps to human chromosome 8p11.23.

CHROMOSOMAL LOCATION

Genetic locus: STAR (human) mapping to 8p11.23; Star (mouse) mapping to 8 A2.

SOURCE

StAR (D-2) is a mouse monoclonal antibody raised against amino acids 1-285 representing full length StAR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

StAR (D-2) is available conjugated to agarose (sc-166821 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166821 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166821 PE), fluorescein (sc-166821 FITC), Alexa Fluor® 488 (sc-166821 AF488), Alexa Fluor® 546 (sc-166821 AF546), Alexa Fluor® 594 (sc-166821 AF594) or Alexa Fluor® 647 (sc-166821 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166821 AF680) or Alexa Fluor® 790 (sc-166821 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

StAR (D-2) is recommended for detection of StAR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Suitable for use as control antibody for StAR siRNA (h): sc-44121, StAR siRNA (m): sc-153878, StAR shRNA Plasmid (h): sc-44121-SH, StAR shRNA Plasmid (m): sc-153878-SH, StAR shRNA (h) Lentiviral Particles: sc-44121-V and StAR shRNA (m) Lentiviral Particles: sc-153878-V.

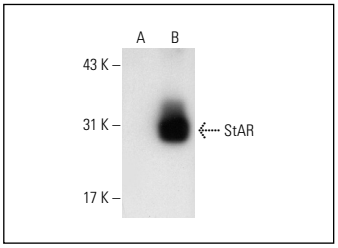
Molecular Weight of StAR: 30 kDa.

Positive Controls: StAR (h): 293 Lysate: sc-112333, human adrenal gland extract: sc-363761 or rat adrenal gland extract: sc-364802.

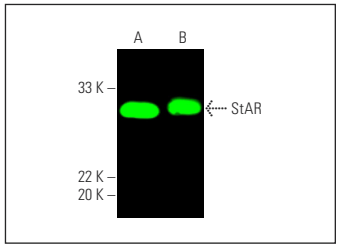
STORAGE

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

DATA



StAR (D-2): sc-166821. Western blot analysis of StAR expression in non-transfected: sc-110760 (**A**) and human StAR transfected: sc-112333 (**B**) 293 whole cell lysates.



StAR (D-2): sc-166821. Near-infrared western blot analysis of StAR expression in human adrenal gland (**A**) and rat adrenal gland (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Ren, X.M., et al. 2012. The protection of selenium on cadmium-induced inhibition of spermatogenesis via activating testosterone synthesis in mice. Food Chem. Toxicol. 50: 3521-3529.
2. Silvagno, F., et al. 2013. Mitochondrial translocation of vitamin D receptor is mediated by the permeability transition pore in human keratinocyte cell line. PLoS ONE 8: e54716.
3. Bahat, A., et al. 2014. StAR enhances transcription of genes encoding the mitochondrial proteases involved in its own degradation. Mol. Endocrinol. 28: 208-224.
4. Zang, Z.J., et al. 2015. A herbal medicine, saikokaryukotsuboreito, improves serum testosterone levels and affects sexual behavior in old male mice. Aging Male 18: 106-111.
5. Bildik, G., et al. 2018. Luteal granulosa cells from natural cycles are more capable of maintaining their viability, steroidogenic activity and LH receptor expression than those of stimulated IVF cycles. Hum. Reprod. 34: 345-355.
6. Tang, B., et al. 2019. Deletion of FOXL2 by CRISPR promotes cell cycle G_0/G_1 restriction in KGN cells. Int. J. Mol. Med. 43: 567-574.
7. Li, X., et al. 2020. CXCR4-SF1 bifunctional adipose-derived stem cells benefit for the treatment of Leydig cell dysfunction-related diseases. J. Cell. Mol. Med. 24: 4633-4645.
8. Xu, A., et al. 2020. Linoleic acid promotes testosterone production by activating Leydig cell GPR120/ERK pathway and restores BPA-impaired testicular toxicity. Steroids 163: 108677.
9. Hadziselimovic, F., et al. 2020. Abnormal histology in testis from prepubertal boys with monorchidism. Basic Clin. Androl. 30: 11.

RESEARCH USE

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