

OTC (E-9): sc-515791



The Power to Question

BACKGROUND

OTC (ornithine carbamoyltransferase), also known as OTCase, is a 354 amino acid protein that belongs to the ATCase/OTCase family of proteins. Expressed in liver and intestinal mucosa, OTC localizes to the mitochondrial matrix and exists as a homotrimer. Specifically, OTC plays a vital role in the urea cycle, catalyzing the second step in this pathway: the formation of L-citrulline from L-ornithine and carbamoyl phosphate. In humans, the urea cycle is an important pathway to detoxification of ammonia. Mutations in the gene encoding OTC are associated with the X-linked disorder OTCD (ornithine carbamoyltransferase deficiency). OTCD is a disorder of the urea cycle characterized by hyperammonemia. In males, OTCD is fatal, whereas females express variable symptoms. In addition, the OTC gene localizes near a region of the X chromosome that is associated with Duchenne muscular dystrophy, suggesting a possible role in that disease as well.

CHROMOSOMAL LOCATION

Genetic locus: OTC (human) mapping to Xp11.4; Otc (mouse) mapping to X A1.1.

SOURCE

OTC (E-9) is a mouse monoclonal antibody raised against amino acids 55-354 mapping at the C-terminus of OTC of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OTC (E-9) is available conjugated to agarose (sc-515791 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515791 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515791 PE), fluorescein (sc-515791 FITC), Alexa Fluor® 488 (sc-515791 AF488), Alexa Fluor® 546 (sc-515791 AF546), Alexa Fluor® 594 (sc-515791 AF594) or Alexa Fluor® 647 (sc-515791 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515791 AF680) or Alexa Fluor® 790 (sc-515791 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

OTC (E-9) is recommended for detection of OTC 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 OTC siRNA (h): sc-91306, OTC siRNA (m): sc-151338, OTC shRNA Plasmid (h): sc-91306-SH, OTC shRNA Plasmid (m): sc-151338-SH, OTC shRNA (h) Lentiviral Particles: sc-91306-V and OTC shRNA (m) Lentiviral Particles: sc-151338-V.

Molecular Weight of OTC precursor: 40 kDa.

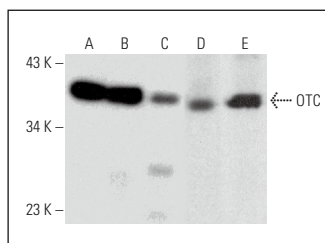
Molecular Weight of mature OTC subunit of homotrimer: 36 kDa.

Positive Controls: human small intestine extract: sc-364225, mouse liver extract: sc-2256 or rat liver extract: sc-2395.

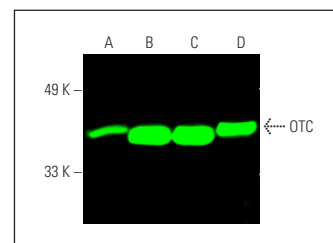
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



OTC (E-9): sc-515791. Western blot analysis of OTC expression in mouse liver (A), rat liver (B), mouse small intestine (C), mouse large intestine (D) and mouse colon (E) tissue extracts.



OTC (E-9): sc-515791. Near-infrared western blot analysis of OTC expression in human small intestine (A), mouse liver (B), rat liver (C) and human liver (D) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

- Poillet-Perez, L., et al. 2018. Autophagy maintains tumour growth through circulating arginine. *Nature* 563: 569-573.
- Lercher, A., et al. 2019. Type I interferon signaling disrupts the hepatic urea cycle and alters systemic metabolism to suppress T cell function. *Immunity* 51: 1074-1087.e9.

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 for detailed protocols and support products.

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