

CES1 (A-11): sc-365249

BACKGROUND

CES1 and CES2 are the two major liver carboxylesterases which belong to the type-B carboxylesterase/lipase family. Helping the body in the detoxification of a wide range of xenobiotics, CES1 and CES2 are involved in the hydrolyzing activation of therapeutic ester and amide pro-drugs, as well as in the detoxification of several narcotic compounds. The catalytic activity of CES1 and CES2 is influenced by both the esterification site and the structure/moiety of the amino acid. While CES1 shows high affinity for aromatic and aliphatic esters, CES2 shows high affinity for 3,6-diacetyl and 6-monoacetyl esters, such as those found in morphine and morphine derivatives. Since CES1 and CES2 are crucial in the breakdown of various foreign molecules, several therapeutic compounds, such as anti-tumor agents, are structurally designed to target the catalytic sites of one or both of these key carboxylesterase proteins.

REFERENCES

- Kim, S.R., et al. 2003. Twelve novel single nucleotide polymorphisms in the CES2 gene encoding human carboxylesterase 2 (hCE-2). *Drug Metab. Pharmacokinet.* 18: 327-332.
- Furihata, T., et al. 2005. Dexamethasone-induced methylprednisolone hemisuccinate hydrolase: its identification as a member of the rat carboxylesterase 2 family and its unique existence in plasma. *Biochem. Pharmacol.* 69: 1287-1297.
- Kubo, T., et al. 2005. Functional characterization of three naturally occurring single nucleotide polymorphisms in the CES2 gene encoding carboxylesterase 2 (HCE-2). *Drug Metab. Dispos.* 33: 1482-1487.

CHROMOSOMAL LOCATION

Genetic locus: CES1 (human) mapping to 16q12.2.

SOURCE

CES1 (A-11) is a mouse monoclonal antibody raised against amino acids 261-355 mapping within an internal region of CES1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CES1 (A-11) is available conjugated to agarose (sc-365249 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365249 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365249 PE), fluorescein (sc-365249 FITC), Alexa Fluor® 488 (sc-365249 AF488), Alexa Fluor® 546 (sc-365249 AF546), Alexa Fluor® 594 (sc-365249 AF594) or Alexa Fluor® 647 (sc-365249 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365249 AF680) or Alexa Fluor® 790 (sc-365249 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

CES1 (A-11) is recommended for detection of CES1 of 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), 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).

Suitable for use as control antibody for CES1 siRNA (h): sc-62096, CES1 shRNA Plasmid (h): sc-62096-SH and CES1 shRNA (h) Lentiviral Particles: sc-62096-V.

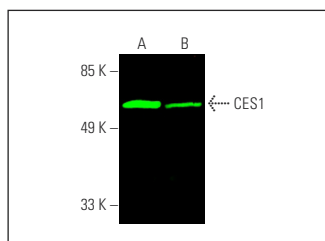
Molecular Weight of CES1: 62 kDa.

Positive Controls: human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

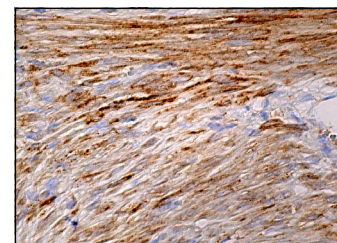
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CES1 (A-11): sc-365249. Near-infrared western blot analysis of CES1 expression in human liver tissue extract (A) and Hep G2 whole cell lysate (B). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



CES1 (A-11): sc-365249. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells.

SELECT PRODUCT CITATIONS

- Pratt, S.E., et al. 2013. Human carboxylesterase-2 hydrolyzes the prodrug of gemcitabine (LY2334737) and confers prodrug sensitivity to cancer cells. *Clin. Cancer Res.* 19: 1159-1168.

RESEARCH USE

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