

# CES1 (T-13): sc-55922

## 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. 2004. 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.
- Landowski, C.P., et al. 2006. Nucleoside ester prodrug substrate specificity of liver carboxylesterase. *J. Pharmacol. Exp. Ther.* 316: 572-580.
- Geshi, E., et al. 2006. A single nucleotide polymorphism in the carboxylesterase gene is associated with the responsiveness to imidapril medication and the promoter activity. *Hypertens. Res.* 28: 719-725.
- Furihata, T., et al. 2006. Hepatocyte nuclear factor-4 $\alpha$  plays pivotal roles in the regulation of mouse carboxylesterase 2 gene transcription in mouse liver. *Arch. Biochem. Biophys.* 447: 107-117.

## CHROMOSOMAL LOCATION

Genetic locus: CES1/CES4 (human) mapping to 16q12.2.

## SOURCE

CES1 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CES1 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-55922 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

CES1 (T-13) is recommended for detection of CES1 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

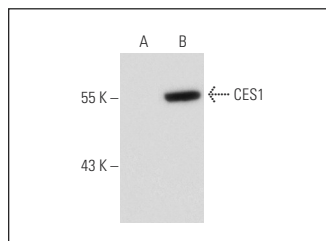
Molecular Weight of CES1: 62 kDa.

Positive Controls: human liver extract: sc-363766, CES1 (h): 293T Lysate: sc-111916 or Hep G2 cell lysate: sc-2227.

## 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.

## DATA



CES1 (T-13): sc-55922. Western blot analysis of CES1 expression in non-transfected: sc-117752 (A) and human CES1 transfected: sc-111916 (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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CES1 (A-11): sc-365249** or **CES1 (E-1): sc-365248**, our highly recommended monoclonal alternatives to CES1 (T-13).