

# CES1 (C-13): sc-55913

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CES1 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CES1 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-55913 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

CES1 (C-13) is recommended for detection of CES1 of human origin by Western Blotting (starting dilution 1:200, 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).

CES1 (C-13) is also recommended for detection of CES1 in additional species, including equine.

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.

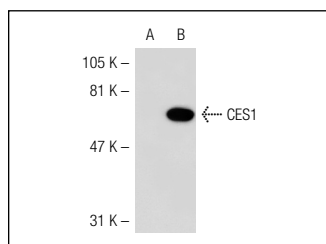
Molecular Weight of CES1: 62 kDa.

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

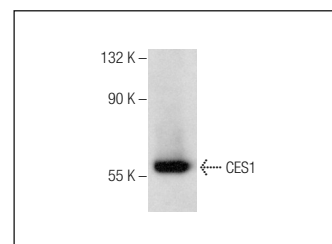
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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 (C-13): sc-55913. Western blot analysis of CES1 expression in non-transfected: sc-117752 (A) and human CES1 transfected: sc-111916 (B) 293T whole cell lysates.



CES1 (C-13): sc-55913. Western blot analysis of CES1 expression in human liver tissue extract.

## RESEARCH USE

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

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