

## DESCRIPTION

|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Human  |
| <b>Specificity</b>        | Detects human Carboxylesterase1/CES-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, 100% cross-reactivity with recombinant mouse (rm) CES-3 and no cross-reactivity with rmCES-2, rmCES-5, or recombinant human CES-2 is observed. |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>2B</sub> Clone # 544623  |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant human Carboxylesterase1/CES-1 His19-Glu563<br>Accession # P23141   |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.  |

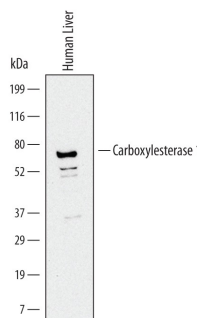
## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

|                            | <b>Recommended Concentration</b> | <b>Sample</b>  |
|----------------------------|----------------------------------|--|
| <b>Western Blot</b>        | 2 µg/mL                          | See Below  |
| <b>Immunoprecipitation</b> | 25 µg/mL                         | Conditioned cell culture medium spiked with Recombinant Human Carboxylesterase 1/CES1 (Catalog # 4920-CE), <a href="#">see our available Western blot detection antibodies</a> |
| <b>Simple Western</b>      | 10 µg/mL                         | See Below  |

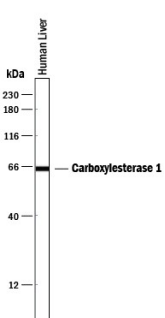
## DATA

**Western Blot**



**Detection of Human Carboxylesterase 1/CES1 by Western Blot.** Western blot shows lysates of human liver tissue. PVDF Membrane was probed with 2 µg/mL of Mouse Anti-Human Carboxylesterase 1/CES1 Monoclonal Antibody (Catalog # MAB4920) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Carboxylesterase 1/CES1 at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 1](#).

**Simple Western**



**Detection of Human Carboxylesterase 1/CES1 by Simple Western™.** Simple Western lane view shows lysates of human liver tissue, loaded at 0.2 mg/mL. A specific band was detected for Carboxylesterase 1/CES1 at approximately 65 kDa (as indicated) using 10 µg/mL of Mouse Anti-Human Carboxylesterase 1/CES1 Monoclonal Antibody (Catalog # MAB4920). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

## PREPARATION AND STORAGE

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Sterile PBS to a final concentration of 0.5 mg/mL.   |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C   |
| <b>Stability &amp; Storage</b> | <b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

## BACKGROUND

Carboxylesterase 1 (CES-1) is a member of a large family of carboxylesterases that are responsible for the hydrolysis of ester and amide bonds (1, 2). They have broad substrate specificity ranging from small molecule esters such as phenylester to long chain fatty acid esters and thioesters. They play a major role as determinants of pharmacokinetic behavior for most therapeutic agents containing an ester. By de-esterification, they can activate or inactivate the agents. They also participate in detoxification of drugs such as cocaine and heroin in serum and liver. The resulting de-esterified metabolites are secreted out in urine. They can also detoxify organophosphate and carbamate analogues used in agrochemicals or chemical nerve agents, such as malathion, sarin, tabun, and VX. In addition to the hydrolytic activity, they can perform transesterification, a reaction important for cholesterol homeostasis. Carboxylesterase deficiency may be associated with non-Hodgkin lymphoma or B-cell lymphocytic leukemia. CES-1 shares the serine hydrolase fold observed in other esterases (3). CES-1 possesses an endoplasmic reticulum retention signal (HIEL) at its C-terminus.

## References:

1. Redinbo, M.R. and P.M. Potter (2005) Drug Discovery Today **10**:313.
2. Satoh, T. and M. Hosokawa (2006) Chem. Biol. Interactions **162**:195.
3. Fleming, C.D. *et al.* (2007) Biochemistry **46**:5603.