Human Carboxylesterase 2/CES2 Antibody

Monoclonal Mouse IgG_1 Clone # 720711

Catalog Number: MAB5657

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Carboxylesterase 2/CES2 in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant mouse Carboxylesterase 2 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 720711
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Carboxylesterase 2/CES2 Gln27-Leu559 (predicted) Accession # O00748
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

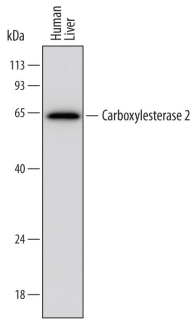
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Carboxylesterase 2/CES2 (Catalog # 5657-CE), see our available Western blot detection antibodies

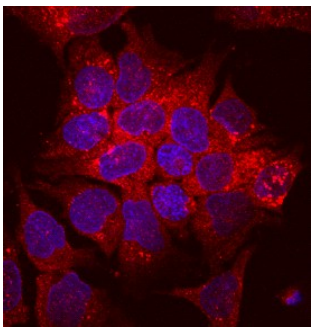
DATA

Western Blot



Detection of Human Carboxylesterase 2/CES2 by Western Blot. Western blot shows lysates of human liver tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human Carboxylesterase 2/CES2 Monoclonal Antibody (Catalog # MAB5657) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Carboxylesterase 2/CES2 at approximately 62 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



Carboxylesterase 2/CES2 in HepG2 Human Cell Line. Carboxylesterase 2/CES2 was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Mouse Anti-Human Carboxylesterase 2/CES2 Monoclonal Antibody (Catalog # MAB5657) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasmic. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Carboxylesterase 2 is a member of a serine esterase family composed of enzymes which hydrolyze ester and amide bonds (1, 2). The members in this family share the serine hydrolase fold observed in other esterases (3). They have broad substrate specificity from small molecule esters such as phenylester to long-chain fatty acid esters and thioesters. They play a major role in the pharmacokinetics of most therapeutic agents containing an ester. By de-esterification, they can activate or inactivate the agents. They also participate in the detoxification of drugs such as cocaine and heroin in serum and liver. In addition to narcotics, 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. This reaction is important for cholesterol homeostasis. Three major human CESs have been identified (4). CES1 is highly expressed in liver. CES2 is present in the small intestine, colon, kidney, liver, heart, brain, and testis. CES3 is brain-specific. Carboxylesterase deficiency may be associated with non-Hodgkin lymphoma or B-cell lymphocytic leukemia.

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.
4. Imai, T. (2006) Drug Metab. Pharmacokinet. **21**:173.

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