

PRODUCT INFORMATION



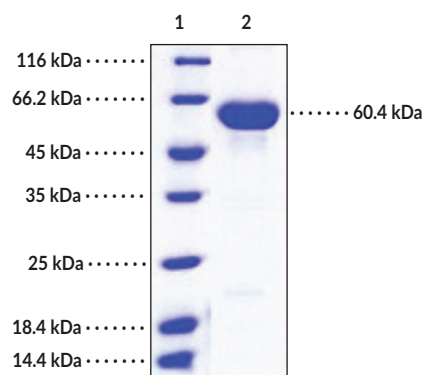
CES2 (human, recombinant)

Item No. 38069

Overview and Properties

Synonyms: Carboxylesterase 2, CE-2, Cocaine Esterase, Methylumbelliferyl-acetate Deacetylase 2
Source: Recombinant human C-terminal His-tagged CES2 expressed in HEK293 cells
Amino Acids: 27-559
Uniprot No.: O00748-1
Molecular Weight: 60.4 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile 50 mM sodium acetate, with 150 mM sodium chloride, and 10% glycerol, pH 5.5
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: CES2

SDS-PAGE Analysis of CES2. This protein has a calculated molecular weight of 60.4 kDa.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Carboxylesterase 2 (CES2) is a serine hydrolase with a major role in endo- and xenobiotic metabolism.¹ It exists as a monomer and is composed of an α/β -hydrolase fold, a regulatory domain, a catalytic domain, and an HTEL endoplasmic reticulum (ER) localization sequence at the C-terminus.^{1,2} CES2 is mainly expressed in liver, kidney, and small intestine, but is also found in cardiovascular and reproductive tissues.³ It is involved in the metabolism of several xenobiotics, including anticancer prodrugs and cocaine, and also has triacylglycerol and diacylglycerol hydrolase activity.^{1,2,4} Generally, CES2 prefers to hydrolyze esters with a large alcohol moiety and a small acyl group.¹ Knockdown of CES2 decreases fatty acid oxidation, glucose uptake, and glycogen synthesis and increases the expression of genes involved in gluconeogenesis and ER stress in primary human hepatocytes.⁵ Hepatic overexpression of *Ces2* decreases hepatic triglyceride and cholesterol levels in *db/db* mice and in a mouse model of obesity induced by a high-fat diet.⁶ Liver levels of CES2 are decreased in patients with obesity or non-alcoholic steatohepatitis (NASH) and tumoral levels of CES2 decrease with increasing tumor grade in patients with colorectal cancer.^{5,6,7} Cayman's CES2 (human, recombinant) protein can be used for enzyme activity assays. This protein consists of 544 amino acids, has a calculated molecular weight of 60.4 kDa, and a predicted N-terminus of Gln27 after signal peptide cleavage.

References

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