PRODUCT INFORMATION

15-hydroxy Prostaglandin Dehydrogenase D50H variant (human, recombinant)

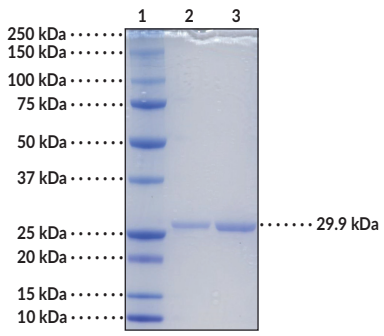
Item No. 34486

Overview and Properties

Synonyms:	NAD$^+$-dependent 15-hydroxy Prostaglandin Dehydrogenase, Prostaglandin Dehydrogenase 1, Short-chain Dehydrogenase/Reductase Family 36C Member 1
Source:	Active recombinant human C-terminal His-tagged 15-PGDH expressed in *E. coli*
Amino Acids:	3-256
Uniprot No.:	P15428
Molecular Weight:	29.9 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	50 mM potassium phosphate, pH 7.6, with 150 mM sodium chloride, 1 mM EDTA, 0.1 mM DTT, and 5% glycerol
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to produce 1 nmol of NADH per minute at 37°C in 50 mM Tris-HCl, pH 7.5, containing 0.1 mM DTT, 1 mM NAD$^+$, and 50 µM prostaglandin E_2 (PGE_2; Item No. 14010).

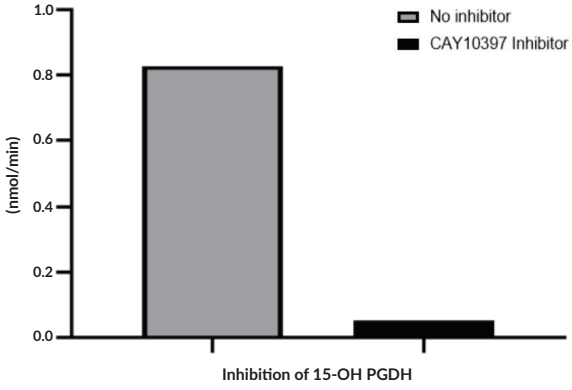
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

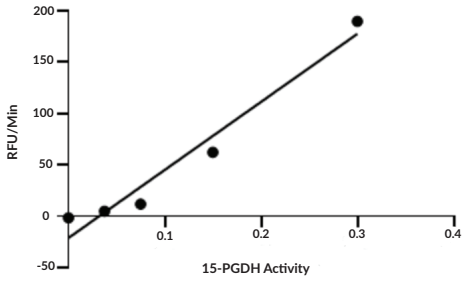


Lane 1: MW Markers
Lane 2: 15-PGDH (2 µg)
Lane 3: 15-PGDH (4 µg)

SDS-PAGE Analysis of 15-PGDH.



Inhibition of 15-OH PGDH



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Description

15-hydroxy Prostaglandin dehydrogenase (15-PGDH) is an enzyme of the short-chain alcohol dehydrogenase family that catalyzes the oxidation of prostaglandins to 15-keto metabolites with reduced biological activity.[1-4] It uses NAD^+ as a cofactor and, in addition to PGs, also converts various hydroxy fatty acids, such as HETEs, resolvins, and lipoxins, to less active keto metabolites.[4-8] 15-PGDH acts as a tumor suppressor, and restoring *HPGD*, the gene encoding 15-PGDH, expression in human colon cancer cells *in vitro* reduces subsequent tumor formation in mouse xenograft models.[9-12] Knockout of *Hpgd* or inhibition of 15-PGDH in mice increases hepatic tissue regeneration and induces resistance to ulcerative colitis.[13] Inhibition of 15-PGDH also increases mitochondrial function and autophagic flux in muscle tissue, as well as increases muscle mass and strength in aged mice.[14] Cayman's 15-PGDH D50H variant (human, recombinant) protein contains an aspartate-to-histidine substitution at position 50 (D50H) and can be used for enzyme assay and Western blot (WB) applications.

References

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