

Product Information

D-2-Hydroxyglutarate Dehydrogenase (D2HGDH) from *Acidaminococcus fermentans*

Recombinant, expressed in *E. coli*, aqueous solution

SAE0097

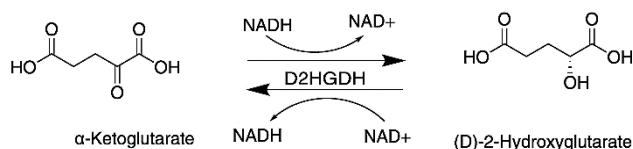
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Synonyms: HGDH, D2HGDH, D-2-HGA, D-2-HG dehydrogenase, (R)-2-hydroxyglutarate dehydrogenase

Storage Temperature: -20 °C

Product Description

D-2-Hydroxyglutarate Dehydrogenase (D2HGDH) is a member of the D-2-hydroxyacid NAD⁺-dependent dehydrogenase family of proteins.¹ D2HGDH catalyzes the conversion of α-ketoglutarate (α-KG) to D-2-hydroxyglutarate (D2HG), coupled to the oxidation of NADH to NAD⁺, and also the reverse reaction, illustrated in the schematic below:



The crystal structure of D2HGDH from *Acidaminococcus fermentans* has been reported.¹

D2HGDH from *Acidaminococcus fermentans* has been used in several enzymatic assays, such as:

- A continuous spectrophotometric assay to measure the activity of aminotransferases, based on the transamination of a keto compound and L glutamate, which yields a corresponding amino compound and 2-oxoglutarate.²
- Determination of D2HG levels in biological fluids such as serum, urine, cell culture supernatants, and cell or tissue lysates.³
- A coupled assay system to measure branched-chain amino acid aminotransferase activity.⁴

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Product

This recombinant D2HGDH product is supplied as an aqueous solution in 20 mM Trizma® buffer, pH 7.5, with 150 mM NaCl, and 10% glycerol.

Unit definition: One unit of enzyme oxidizes 1 μmole of NADH to NAD⁺ coupled to the reduction of α-ketoglutarate to D-2-hydroxyglutarate per minute at 37 °C at pH 8.0.

Storage/Stability

Store the product at -20 °C. The product retains activity for at least 2 years when stored at -20 °C. Avoid repeated freeze-thaw cycles.

References

1. Martins, B. M. *et al.*, *FEBS J.*, 272(1), 269-281 (2005).
2. Yu, X. *et al.*, *Anal. Biochem.*, 431(2), 127-131 (2012).
3. Balss, J. *et al.*, *Acta Neuropathol.*, 124(6), 883-891 (2012).
4. Yu, X. *et al.*, *FEBS J.*, 281(1), 391-400 (2014).

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