

Native *Gluconobacter industrius* D-Fructose Dehydrogenase

Cat. No. NATE-0184

Lot. No. (See product label)

Introduction

Description D-fructose dehydrogenase is a heterotrimeric membrane-bound enzyme commonly seen in various *Gluconobacter* sp. especially in *Gluconobacter japonicus* (*Gluconobacter industrius*). It has a molecular mass of ca. 140 kDa, consisting of subunits I (67kDa), II (51 kDa), and III (20 kDa) and catalyzes the oxidation of D-fructose to produce 5-keto-D-fructose. The enzyme is a flavoprotein-cytochrome c complex with subunits I and II covalently bound to flavin adenine dinucleotide (FAD) and heme C as prosthetic groups, respectively.

Applications D-fructose dehydrogenase is used as a biosensor to detect the presence of D-fructose. Fructose dehydrogenase (FDH) is used in a number of basic research projects to examine the electrochemical properties of enzyme-catalyzed electrode reactions called bioelectrocatalysis. D-fructose dehydrogenase has been used in a study that contributed towards a convenient method for measuring rare sugars, monosaccharides, for applications in the bio-industry. A direct electron transfer reaction of d-fructose dehydrogenase adsorbed on a porous carbon electrode surface has been used to describe a batch-type coulometric d-fructose biosensor.

Synonyms EC 1.1.99.11; fructose 5-dehydrogenase; D-fructose dehydrogenase; D-fructose:(acceptor) 5-oxidoreductase; 37250-85-4

Product Information

Source *Gluconobacter industrius*

Form Lyophilized powder

EC Number EC 1.1.99.11

CAS No. 37250-85-4

Activity 400-1,200 units/mg

Composition Protein, <10% Lowry

Unit Definition One unit will convert 1.0 μ mole D-fructose to 5-ketofructose per min at pH 4.5 at 37°C.

Storage and Shipping Information

Storage -20°C