Product Data Sheet

Product Name: Glucose oxidase(100-250u/mg)
Cat. No.: GC19780

Chemical Properties

Cas. No.	9001-37-0		
Formula		M.Wt	approx 150 kDa
Solubility	Soluble in water	Storage	Store at -20°C,protect from light
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

Glucose oxidase(100-250u/mg) is an oxidoreductase derived from *Aspergillus niger*. When oxygen and glucose are present, Glucose oxidase (100-250u/mg) can exhibit antibacterial activity [1] [2] [3].

Glucose oxidase (100-250u/mg) is a yellow amorphous powder derived from *Aspergillus niger*. Its enzyme commission number is EC 1.1.3.4. Under specific conditions (pH 5.7, 37°C), one unit of glucose oxidase can oxidize 1μM glucose per minute. The molecular weight of the enzyme is about 150 kDa as determined by SDS-PAGE. Its isoelectric point is 5.2, showing certain charge properties. For the substrate D-glucose, the Michaelis constant of the enzyme is 4.9×10^{-2} M. Actual

Product Data Sheet

measurements show that the pH stability of the product is 5.5~7.5 (25°C, 18 hours) and the thermal stability is <40°C (pH 5.7, 60 minutes). It is worth noting that metal ions such as Cu^{2+}, Fe^{3+}, Mg^{2+} and Mn^{2+} have an inhibitory effect on glucose oxidase (100-250u/mg). Glucose oxidase(100-250u/mg) specifically binds to β-D-pyranose glucose and does not act on α-D-glucose. In the presence of air and glucose, Glucose oxidase(100-250u/mg) catalyzes the oxidation of β-D-glucose to D-glucono-1,5-lactone, which is then hydrolyzed to gluconic acid[4]. Glucose oxidase(100-250u/mg) is widely used in blood glucose monitoring, free glucose detection in plant raw materials and food industries, and food preservation. It also has many applications in biotechnology, usually for enzyme assays in biochemistry, biosensors in nanotechnology[5].

References:

[1].Wong C M, Wong K H, Chen X D. Glucose oxidase: natural occurrence, function, properties and industrial applications[J]. Applied microbiology and biotechnology, 2008, 78: 927-938.
[2].Broom W A, Coulthard C E, Gurd M R, et al. Some pharmacological and chemotherapeutic properties of notatin[J]. British journal of pharmacology and chemotherapy, 1946, 1(4): 225.
[3].Ghoshdastider U, Wu R, Trzaskowski B, et al. Molecular effects of encapsulation of glucose oxidase dimer by graphene[J]. RSC Advances, 2015, 5(18): 13570-13578.
[4]. Bauer J A, Zámocká M, Majtán J, et al. Glucose oxidase, an enzyme “Ferrari”: Its structure, function, production and properties in the light of various industrial and biotechnological applications[J]. Biomolecules, 2022, 12(3): 472.
[5].Heller A, Ulstrup J. Detlev Müller’s Discovery of Glucose Oxidase in 1925[J]. Analytical Chemistry, 2021, 93(18): 7148-7149.

Caution: Product has not been fully validated for medical applications. For research use only.
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