Creative Enzymes®

Native Bacillus stearothermophilus Superoxide Dismutase

Cat. No. NATE-1910

Lot. No. (See product label)

Introduction

Description	Superoxide dismutase (SOD) catalyzes the dismutation of superoxide radicals to hydrogen peroxide and molecular oxygen. SOD plays a critical role in the defense of cells against the toxic effects of oxygen radicals. SOD competes with nitric oxide (NO) for superoxide anion (which reacts with NO to form peroxynitrite), thereby SOD promotes the activity of NO. SOD has also been shown to suppress apoptosis in cultured rat ovarian follicles, neural cell lines, and transgenic mice by preventing the conversion of NO to peroxynitrate, an inducer of apoptosis.
Applications	The enzyme is useful for medicine, cosmetic material and nutrition or antioxidant.
Synonyms	Superoxide dismutases; EC 1.15.1.1; superoxidase dismutase; copper-zinc superoxide dismutase; Cu-Zn superoxide dismutase; ferrisuperoxide dismutase; superoxide dismutase I; superoxide dismutase II; SOD; Cu,Zn-SOD; Mn-SOD; Fe-SOD; SODF; SODS; SOD-1; SOD-2; SOD-3; SOD-4; hemocuprein; erythrocuprein; cytocuprein; cuprein ; hepatocuprein; 9054-89-1

Product Information

Source	Bacillus stearothermophilus
Appearance	Lyophilized
EC Number	EC 1.15.1.1
CAS No.	9054-89-1
Molecular Weight	ca. 50,000; Subunit molecular weight : ca. 25,000.
Specific Activity	more than 9,000 U/mg protein
Contaminants	(as SOD activity = 100 %) Catalase: < 0.01 %
Isoelectric point	4.5
pH Stability	6.0 - 9.0
Optimum pH	9.5
Thermal stability	No detectable decrease in activity up to 60 °C.
Unit Definition	One unit of activity is defined as the amount of SOD required to inhibit the rate of reduction of cytochrome C by 50 % at 30 °C.
Reaction	$O2^- + O2^- + 2H^+ \leftrightarrow O2 + H2O2$
Notes	Metal content: 1.5 g atoms of Mn per mole of enzyme.

Storage and Shipping Information

Storage	Stable at -20 °C for at least one year.