Superoxide Dismutase from Bovine, Recombinant

Cat. No. NATE-0681

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 Superoxide dismutase has been used in a study to investigate where lipoproteins may affect the L-arginine-nitric oxide pathway. Superoxide dismutase has also been used in a study to investigate the mass spectral evidence for carbonate-anion-radical-induced posttranslational modification of tryptophan to kynurenine in human Cu, Zn superoxide dismutase. The product has been used to develop an SOD assay. This assay used dismutase-mediated inhibition of NADH-dependent nitroblue tetrazolium reduction.

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

Species	Bovine
Source	E. coli
Form	lyophilized powder
EC Number	EC 1.15.1.1
CAS No.	9054-89-1
Purity	> 90% (SDS-PAGE)
Activity	> 2500 units/mg protein
Isoelectric point	4.95
pH Stability	7.6-10.5
Optimum pH	7.8 (25°C)
Inhibitors	cyanide, OH-(competitive), hydrogen peroxide
Buffer	Reconstitute in 10 mM KPO4, pH 7.4.
Function	chaperone binding; copper ion binding; ubiquitin-protein transferase activity
Unit	One unit will inhibit reduction of Cytochrome c by 50% in a coupled system with xanthine oxidase at pH

Unit Definition	One unit will inhibit reduction of Cytochrome c by 50% in a coupled system with xanthine oxidase at pH 7.8 at 25°C in a 3.0 ml reaction volume. Xanthine oxidase concentration should produce an initial ΔA550 of 0.025 ± 0.005 per min.

Storage and Shipping Information

Storage	−20°C