# Native Human Superoxide Dismutase

*Cat. No. NATE-0680*

*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 from human erythr ocytes has been used in a study to identify in vitro glycated sites of human Cu-Zn-superoxide dismutase. Superoxide dismutase from human erythr ocytes has also been used in a study to investigate a prospective test-system for the screening of cytoprotective drugs and their combinations.

***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*** Human

***Source*** Human erythrocytes

***Form*** Lyophilized powder containing potassium phosphate buffer salts

***EC Number*** EC 1.15.1.1

***CAS No.*** 9054-89-1

***Activity*** > 2,500 units/mg protein

***Pathway*** Amyotrophic lateral sclerosis (ALS), organism-specific biosystem; Amyotrophic lateral sclerosis (ALS), conserved biosystem; FOXA1 transcription factor network, organism-specific biosystem; Folate Metabolism, organism-specific biosystem; Hemostasis, organism-specific biosystem; Huntingtons disease, organism-specific biosystem; Huntingtons disease, conserved biosystem; FoxO family signaling, organism-specific biosystem; Huntingtons disease, organism-specific biosystem; Huntingtons disease, conserved biosystem; Oxidative Stress, organism-specific biosystem; Peroxisome, organism-specific biosystem; Peroxisome, conserved biosystem; Selenium Pathway, organism-specific biosystem; Folate Metabolism, organism-specific biosystem; Oxidative Stress, organism-specific biosystem; Selenium Pathway, organism-specific biosystem; superoxide radicals degradation, organism-specific biosystem

***Function*** chaperone binding; copper ion binding; metal ion binding; oxidoreductase activity; protein binding; protein homodimerization activity; protein phosphatase 2B binding; superoxide dismutase activity; zinc ion binding; DNA binding; identical protein binding; manganese ion binding; manganese ion binding; metal ion binding; oxidoreductase activity; oxygen binding; superoxide dismutase activity; superoxide dismutase activity; copper ion binding; heparin binding; metal ion binding; oxidoreductase activity; protein binding; superoxide dismutase activity; zinc ion binding

***Unit*** One unit will inhibit reduction of Cytochrome c by 50% in a coupled system with xanthine oxidase at pH

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| ***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*

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| ***Storage*** | −20°C |