Creative Enzymes®

Native Canine Superoxide Dismutase

Cat. No. NATE-0677

Lot. No. (See product label)

Introduction

Description Superoxide dismutases (SOD) are enzymes that alternately catalyze the dismutation (or partitioning) of the superoxide (O2−) radical into either ordinary molecular oxygen (O2) or hydrogen peroxide (H2O2). Superoxide is produced as a by-product of oxygen metabolism and, if not regulated, causes many types of cell damage. Hydrogen peroxide is also damaging, but less so, and is degraded by other enzymes such as catalase. Thus, SOD is an important antioxidant defense in nearly all living cells exposed to oxygen. One exception is Lactobacillus plantarum and related lactobacilli, which use a different mechanism to prevent damage from reactive (O2−).

Synonyms EC 1.15.1.1; 9054-89-1; SOD; Superoxide:superoxide oxidoreductase; Superoxide Dismutase

Product Information

Species Canine

Source canine erythrocytes

Form lyophilized powder

EC Number EC 1.15.1.1

CAS No. 9054-89-1

Molecular Weight mol wt ~31.2 kDa (two identical subunits)

Activity 2,000-6,000 units/mg protein

Composition Protein, > 90% biuret

Buffer Lyophilized powder containing potassium phosphate buffer salts

Pathway Amyotrophic lateral sclerosis (ALS), organism-specific biosystem; Huntington's disease, organism-specific biosystem; Peroxisome, organism-specific biosystem

Function metal ion binding; superoxide dismutase activity

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

Stability −20°C