

## Native Horseradish Superoxide Dismutase

Cat. No. NATE-0679

Lot. No. (See product label)

### Introduction

#### Description

Superoxide dismutases (SOD) are enzymes that alternately catalyze the dismutation (or partitioning) of the superoxide ( $O_2^-$ ) radical into either ordinary molecular oxygen ( $O_2$ ) or hydrogen peroxide ( $H_2O_2$ ). 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 ( $O_2^-$ ).

#### Applications

Superoxide dismutase from horseradish has been used in a study to assess the correlation between CuZn superoxide dismutase and glutathione reductase, and environmental and xenobiotic stress tolerance in maize inbreds. Superoxide dismutase from horseradish has also been used in a study to investigate chemiluminometric enzyme sensors for flow-injection analysis.

#### Synonyms

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

### Product Information

#### Source

Horseradish

#### Form

Lyophilized powder containing potassium phosphate buffer salts

#### EC Number

EC 1.15.1.1

#### CAS No.

9054-89-1

#### Activity

1,000-4,000 units/mg protein

#### Composition

Protein, > 70% biuret

#### 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  $\Delta A_{550}$  of  $0.025 \pm 0.005$  per min.

### Storage and Shipping Information

#### Stability

-20°C