

**TECHNICAL DATA SHEET****Catalog # MS746****SOD2 Protein Quantity Microplate Assay Kit**

Rev. 2

LOT #:

APPLICATIONS: SOD2 Quantity assay

SPECIES CROSS-  
REACTIVITY: human

KIT COMPONENTS:	Item	MS746
	20X Buffer (Tube 1)	20 mL
	Detergent	1 mL
	20X Detector Antibody (Tube A)	1 mL
	20X HRP Label (Tube B)	1 mL
	10X Blocking Buffer (Tube 2)	8 mL
	Development Solution (Tube 3)	20 mL
	96-well microplate (12 strips)	1

STORAGE CONDITIONS: Store all components at 4°C. The kit is stable for at least 6 months.

COUNTRY OF ORIGIN: USA

**BACKGROUND:**

Aerobic organisms have several mechanisms to protect against oxidation, particularly from harmful reactive oxygen species (ROS). Superoxide and its products have been implicated in a wide range of diseases including cancer, inflammation, neurodegenerative diseases, diabetes and aging itself. The principle cellular anti-oxidants are the superoxide dismutase family (SOD, E.C. 1.15.1.1). These enzymes dismutate superoxide into hydrogen peroxide which is further detoxified by other cellular defenses such as glutathione peroxidase and catalase.

The SOD family has 3 members, two of which are Cu-Zn type: the extracellular SOD3 and the cytoplasmic SOD1. The other member is the mitochondrial Mn type SOD2.

The mitochondrial Mn-SOD2 is a homotetramer of subunit mass 23 kDa in the mitochondrial matrix. SOD2 has been shown to be essential since knockout mice die shortly after birth. SOD2 levels may be down-regulated in tumor cells and recent observations show that over expression of SOD2 in tumor cells may suppress cell division and cancer growth (Oberley, Biomedicine & Pharmacotherapy, 2005, 59, p143-8).

SOD2 can also be the target of oxidative stress Tyr34 near the Mn active site can become nitrated leading to inactivation. It has been postulated that an increased reactive nitrogen species in ALS may contribute to site-specific SOD2 inactivation and exacerbation of ALS pathogenesis.

**Note: This product is for research purposes only. It is not to be used in humans or for diagnostic purposes.**

WARRANTY – MitoSciences Inc warranties that products will perform as indicated in the published Technical Data Sheet for 1 month from date of purchase when stored according to specifications and when used consistent with recommended protocols. If you experience results which materially differ from those described, send evidence of the non-performing product for replacement of the original product purchased or a credit toward any other of the company's products or services.