Human Superoxide dismutase [Mn], mitochondrial (SOD2) ELISA kit

Product Code	CSB-E17064h
Abbreviation	SOD2
Target Name	superoxide dismutase 2, mitochondrial
Uniprot No.	P04179
Alias	IPO-B, MNSOD, MVCD6, Mn-SOD, Mn superoxide dismutase|indophenoloxidase B|manganese-containing superoxide dismutase|mangano-superoxide dismutase
Product Type	ELISA Kit
Immunogen Species	Homo sapiens (Human)
Sample Types	serum, plasma, cell culture supernates, cell lysates, tissue homogenates
Detection Range	15.6 pg/mL-1000 pg/mL
Sensitivity	3.9 pg/mL
Assay Time	1-5h
Sample Volume	50-100ul
Detection Wavelength	450 nm
Lead Time	3-5 working days after you place the order, and it takes another 3-5 days for delivery via DHL or FedEx.
Research Area	Metabolism
Gene Names	SOD2
Tag Info	quantitative
Protein Description	Sandwich

Description

This human SOD2 ELISA Kit is suitable for qualitatively determining human concentrations in serum, plasma, cell culture supernates, cell lysates, or tissue homogenates in vitro. SOD2 is a mitochondrial-specific antioxidant enzyme that dismutates superoxide to hydrogen peroxide, which is then converted to water by catalase and glutathione peroxidase. SOD2 is synthesized in the cytoplasm and localizes to the mitochondrial matrix, where it scavenges and accelerates the dismutation of superoxide anion generated by respiratory chain enzymes. It also plays a crucial role in the maintenance of vascular function. SOD2 overexpression and excess generation of hydrogen peroxide have been involved in angiogenesis by enhancing oxidation of phosphatase and tensin homolog deleted from chromosome 10, cell differentiation through prolonged ERK1/2 signaling, as well as pulmonary hypertension through the activation of hypoxia-inducible factor 1α-O2–sensitive pathways. A deficiency of SOD2 in apolipoprotein E–deficient mice leads to mitochondrial damage and impaired

vascular relaxation in response to acetylcholine.

This kit uses the quantitative sandwich-based enzyme immunoassay technique to measure the amount of human SOD2 in the sample. Standards and samples are respectively added to the microplate wells pre-coated with an anti-human SOD2 antibody. Biotin-labeled SOD2 antibody, HRP-avidin, and TMB substrate are pipped into the microplate in turn. The capture antibody pre-coated on the plate captures the SOD2 in the human samples. SOD2 binds to the biotinylated anti-human human monoclonal antibody. And the biotin on the biotinylated anti-SOD2 human monoclonal antibody binds to the avidin on the enzyme label, forming immune complexes. The color renders blue after the addition of the TMB substrate. The addition of the stop solution into the wells immediately turns the blue into yellow. The concentration of SOD2 in the samples is directly proportional to OD (450nm). Each manufactured lot of this ELISA kit was quality tested for criteria such as sensitivity, specificity, precision, linearity, and lot-to-lot consistency.

Target Details

This gene is a member of the iron/manganese superoxide dismutase family. It encodes a mitochondrial protein that forms a homotetramer and binds one manganese ion per subunit. This protein binds to the superoxide byproducts of oxidative phosphorylation and converts them to hydrogen peroxide and diatomic oxygen. Mutations in this gene have been associated with idiopathic cardiomyopathy (IDC), premature aging, sporadic motor neuron disease, and cancer. Alternate transcriptional splice variants, encoding different isoforms, have been characterized.

Product Precision

Intra-assay Precision (Precision within an assay): CV%<8%
Three samples of known concentration were tested twenty times on one plate to assess.
Inter-assay Precision (Precision between assays): CV%<10%
Three samples of known concentration were tested in twenty assays to assess.

Linearity

To assess the linearity of the assay, samples were spiked with high concentrations of human SOD2 in various matrices and diluted with the Sample Diluent to produce samples with values within the dynamic range of the assay.

?	Sample	Serum(n=4)
1:200	Average %	88
	Range %	80-92
1:400	Average %	95
	Range %	91-100
1:800	Average %	100
	Range %	90-110
1:1600	Average %	93
	Range %	86-98

Recovery

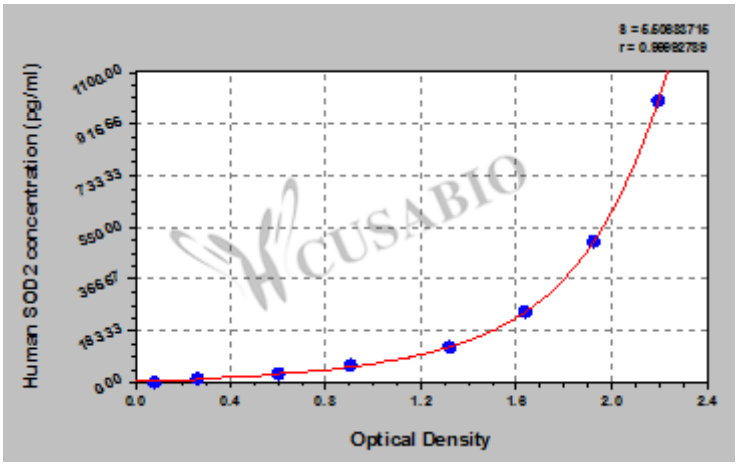
The recovery of human SOD2 spiked to levels throughout the range of the assay in various matrices was evaluated. Samples were diluted prior to assay as directed in the Sample Preparation section.

Sample Type	Average % Recovery	Range
Serum (n=5)	94	89-98

EDTA plasma (n=4)	93	90-100

Typical

These standard curves are provided for demonstration only. A standard curve should be generated for each set of samples assayed.



pg/ml	OD1	OD2	Average	Corrected
1000	2.248	2.152	2.200	2.107
500	1.967	1.890	1.929	1.836
250	1.685	1.604	1.645	1.552
125	1.334	1.319	1.327	1.234
62.5	0.925	0.904	0.915	0.822
31.2	0.629	0.590	0.610	0.517
15.6	0.277	0.269	0.273	0.180
0	0.096	0.090	0.093	?

Msds

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