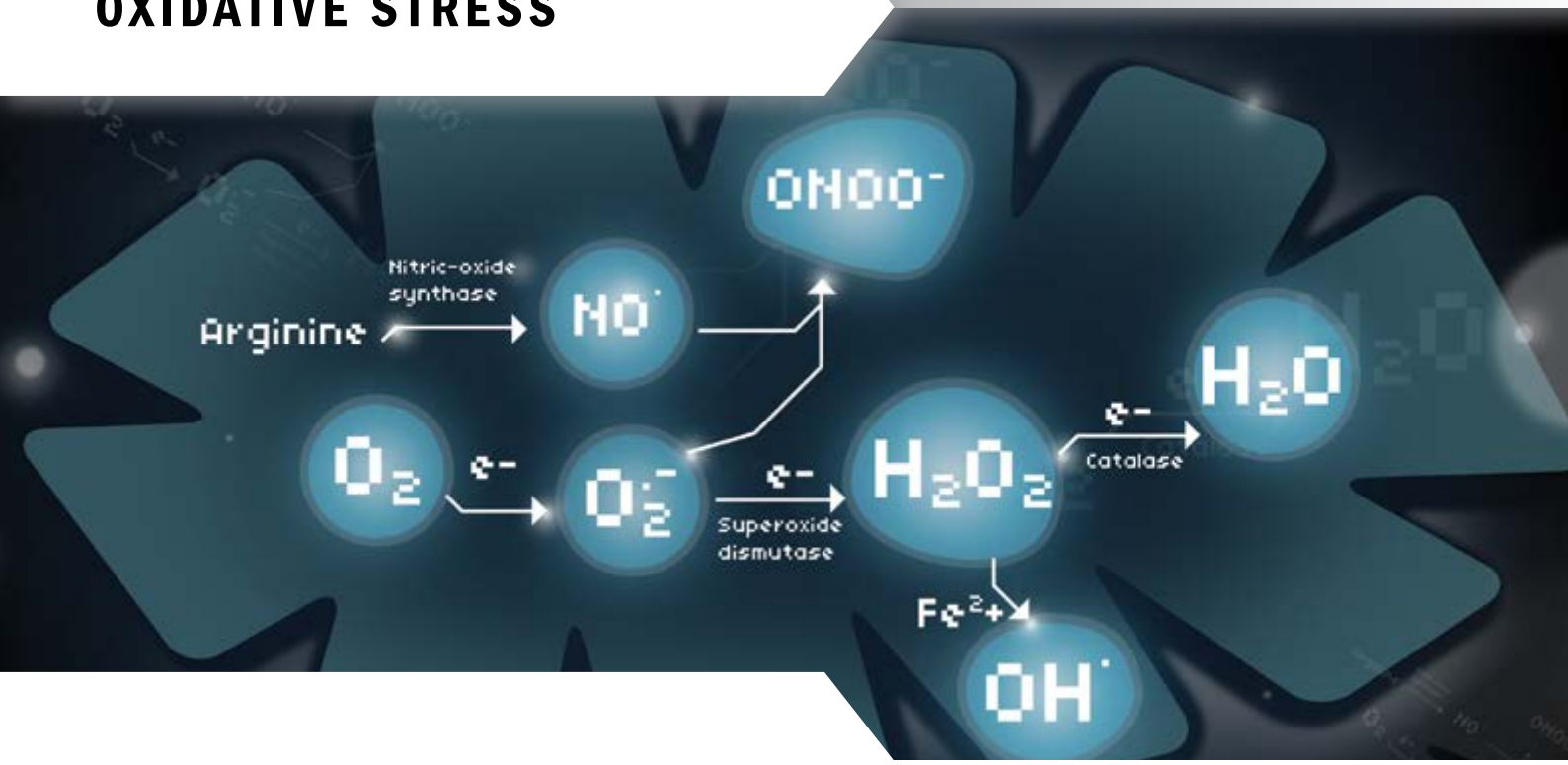
OXIDATIVE STRESS

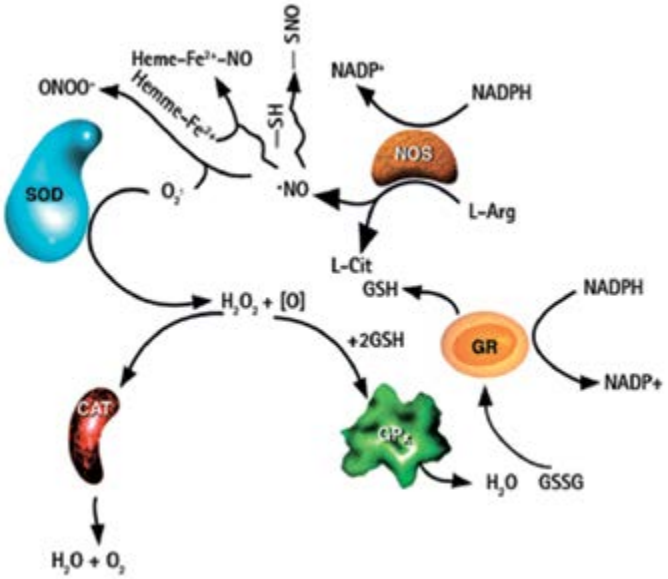


Oxidative Stress (OS) is a general term used to describe the steady state level of oxidative damage in a cell, tissue, or organ, caused by the reactive oxygen species (ROS). This damage can affect a specific molecule or the entire organism. Reactive oxygen species, such as free radicals and peroxides, represent a class of molecules that are derived from the metabolism of oxygen and exist inherently in all aerobic organisms.

There are several sources by which the reactive oxygen species are generated. Most reactive oxygen species come from the endogenous sources as by-products of normal and essential metabolic reactions, such as energy generation from mitochondria or the detoxification reactions involving the liver cytochrome P-450 enzyme system. Exogenous sources include exposure to cigarette smoke, environmental pollutants such as emission from automobiles and industries, consumption of alcohol in excess, asbestos, exposure to ionizing radiation, and bacterial, fungal or viral infections.

Cells are normally able to defend themselves against ROS damage through the use of repair enzymes such as superoxide dismutases, catalases, glutathione peroxidases and peroxiredoxins.

The level of oxidative stress is determined by the balance between the rate at which oxidative damage is induced and the rate at which it is efficiently repaired and removed. The rate at which damage is caused is determined by how fast the reactive oxygen species are generated and then inactivated by endogenous defense agents called antioxidants.



SOD = Superoxide Dismutase
CAT = Catalase
GP_x = Glutathione Peroxidase
GR = Glutathione Reductase
L-Arg = L-Arginine
L-Cit = L-Citrulline
ONOO = Peroxinitrite
ON = Nitric Oxide
O_2 = Superoxide
H_2O_2 = Hydrogen Peroxide

› *ELISA kits for detecting Oxidative Stress or Antioxidant levels*

IMMUNOASSAYS

Cat. No.	Name	Assay format	Applications	Calibration range
RSCN213101R	**8-OHdG Check (Ultrasensitive) Human ELISA (Multispecies specificity)**	Competitive ELISA, Immobilized antigen	Urine, Tissue extract	0.125 – 10 ng/ml
RSCN213100R	**8-OHdG Check Human ELISA (Multispecies specificity)**	Competitive ELISA, Immobilized antigen	Serum, Urine, Tissue extract, Plasma	0.5 – 200 ng/ml
RAF009R	**Cu/Zn Superoxide Dismutase Human ELISA**	Sandwich ELISA, HRP-labelled antibody	Serum, Urine, Amniotic fluid, Plasma, Cell culture supernatant, Fetal umbilical vein blood	0.08 – 5 ng/ml
RAF010R	**Cytochrome c Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Cell culture lysate	0.08 – 5 ng/ml
RA05033.96R	**DHN-MA ELISA**	Competitive ELISA	Urine	7.8 – 1000 pg/ml
RAG012R	**Glutathione Peroxidase 1 Human ELISA**	Sandwich ELISA, HRP-labelled antibody	Plasma	0.0625 – 4 ng/ml
RD191407100R	**Haptoglobin Human ELISA**	Sandwich ELISA, HRP-labelled antibody	Cerebrospinal fluid, Plasma (citrate, EDTA, heparin), Serum, Urine	3.13 – 200 ng/ml
RLF-EK0131R	**Peroxiredoxin 1 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Cell lysate, Plasma	0–32 ng/ml
RLF-EK0113R	**Peroxiredoxin 3 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Cell lysate	0–32 ng/ml
RD191116200R	**sRAGE Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Plasma	50 – 3200 pg/ml
RLF-EK0101R	**Superoxide Dismutase 1 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Cell lysate, Plasma	0–800 pg/ml
RLF-EK0104R	**Superoxide Dismutase 2 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Cell lysate, Plasma	0–1600 pg/ml
RLF-EK0107R	**Superoxide Dismutase 3 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Cell lysate	0–128 ng/ml
RLF-EK0125R	**Thioredoxin 1 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Cell culture lysate, Buffer solution	0.39 – 25 ng/ml
RLF-EK0122R	**Thioredoxin Reductase 1 Human ELISA**	Sandwich ELISA, Biotin-labelled antibody	Serum, Cell lysate, Plasma	0 – 25 ng/ml

PROTEINS

Cat. No.	Description	Species	Source	Type
LF-P0015	Glutathione Peroxidase 4	Human	*Recombinant*	*E. coli*
LF-P0024	Glutathione Reductase	Human	Recombinant	*E. coli*
LF-P0071	Glutathione Reductase	Yeast	Recombinant	*E. coli*
LF-P0008	Glyceraldehyde-3-Phosphate Dehydrogenase	Human	Recombinant	*E. coli*
LF-P0012	Methionine Sulfoxide Reductase B	Human	*Recombinant*	*E. coli*
LF-P0055	Neurosin	Human	Recombinant	*E. coli*
LF-P0002	Peroxiredoxin I	Human	Recombinant	*E. coli*
LF-P0007	Peroxiredoxin II	Human	*Recombinant*	*E. coli*
LF-P0023	Peroxiredoxin III	Human	*Recombinant*	*E. coli*
LF-P0005	Peroxiredoxin III	Mouse	*Recombinant*	*E. coli*
LF-P0058	Peroxiredoxin IV	Human	*Recombinant*	*E. coli*
LF-P0014	Peroxiredoxin V	Human	*Recombinant*	*E. coli*
LF-P0004	Peroxiredoxin VI	Human	*Recombinant*	*E. coli*
LF-P0010	Superoxide Dismutase 1	Human	*Recombinant*	*E. coli*
LF-P0013	Superoxide Dismutase 2	Human	*Recombinant*	*E. coli*
LF-P0020	Superoxide Dismutase 4	Human	*Recombinant*	*E. coli*

Cat. No.	Description	Species	Source	Type
LF-P0001	Thioredoxin 1	Human	*Recombinant*	*E. coli*
LF-P0036	Thioredoxin 1	Yeast	*Recombinant*	*E. coli*
LF-P0006	Thioredoxin 2	Human	*Recombinant*	*E. coli*
LF-P0052	Thioredoxin 2	Yeast	*Recombinant*	*E. coli*
LF-P0009	Thioredoxin Reductase	Yeast	*Recombinant*	*E. coli*
LF-P0021	Thioredoxin Reductase 1	Human	*Recombinant*	*E. coli*
LF-P0019	Thioredoxin Reductase 2	Human	*Recombinant*	*E. coli*

ANTIBODIES

Cat. No.	Description	Spec. React.	Type	Antigen
LF-MA0073	2-Cys Peroxiredoxin	Human	Mouse MAb, Clone 6E5	*E. coli*
LF-MA0003	Catalase	Human	Mouse MAb, Clone 1A1	*E. coli*
LF-MA0010	Catalase	Human	Mouse MAb, Clone 11A1	*E. coli*
LF-PA0060	Catalase	Human	Rabbit PAb	*E. coli*
LF-MA0182	Cytochrome C	Human	Mouse MAb, Clone 14G6	*E. coli*
LF-MA0033	Ferredoxin Reductase	Human	Mouse MAb, Clone 6C2	*E. coli*
LF-PA0176	Ferritin H-chain	Human	Rabbit PAb	Synthetic peptide
LF-PA0018	GAPDH	Human	Rabbit PAb	*E. coli*
LF-MA0100	GAPDH-SO3	Human	Mouse MAb, Clone 4A1	Sulfonylated peptide
LF-PA0006	GAPDH-SO3	Human	Rabbit PAb	Sulfonylated peptide
LF-MA0082	Glutaredoxin I	Human	Mouse MAb, Clone 30A1	*E. coli*
LF-MA0072	Glutaredoxin I	Human	Mouse MAb, Clone 28C3	*E. coli*
LF-PA0017	Glutaredoxin I	Human	Rabbit PAb	*E. coli*
LF-MA0090	Glutathione Peroxidase 1	Human	Mouse MAb, Clone 2A10	*E. coli*
LF-MA0091	Glutathione Peroxidase 1	Human	Mouse MAb, Clone 42C9	*E. coli*
LF-MA0206	Glutathione Peroxidase 1	Mouse	Mouse MAb, Clone 13B2AF	*E. coli*
LF-MA0114	Glutathione Peroxidase 3	Human	Mouse MAb, Clone 23B1	*E. coli*
LF-MA0145	Glutathione Peroxidase 3	Human	Mouse MAb, Clone 55A	*E. coli*
LF-MA0059	Glutathione Peroxidase 4	Human	Mouse MAb, Clone 7A4	*E. coli*
LF-MA0085	Glutathione Peroxidase 4	Human	Mouse MAb, Clone 1H11	*E. coli*
LF-PA0055	Glutathione Peroxidase 4	Human	Rabbit PAb	*E. coli*
LF-MA0024	Glutathione Reductase	Human	Mouse MAb, Clone 2B3	*E. coli*
LF-MA0036	Glutathione Reductase	Human	Mouse MAb, Clone 1A7	*E. coli*
LF-PA0056	Glutathione Reductase	Human	Rabbit PAb	*E. coli*
LF-MA0026	Glyceraldehyde-3-Phosphate Dehydrogenase	Human	Mouse MAb, Clone 8C2	*E. coli*
LF-MA0083	Methionine Sulfoxide Reductase A	Human	Mouse MAb, Clone 1C8	*E. coli*
LF-MA0084	Methionine Sulfoxide Reductase A	Human	Mouse MAb, Clone 5B5	*E. coli*
LF-PA0031	Methionine Sulfoxide Reductase A	Human	Rabbit PAb	*E. coli*
LF-PA0088	Methionine Sulfoxide Reductase B	Mouse	Rabbit PAb	*E. coli*
LF-PA0052	MPO (Myeloperoxidase)	Human	Rabbit PAb	Synthetic peptide
LF-MA0068	Peroxiredoxin	Human	Mouse MAb, Clone 2A4	*E. coli*
LF-MA0031	Peroxiredoxin I	Human	Mouse MAb, Clone 9D2	*E. coli*
LF-MA0069	Peroxiredoxin I	Human	Mouse MAb, Clone 13E7	*E. coli*
LF-MA0144	Peroxiredoxin II	Human	Mouse MAb, Clone 1E8	*E. coli*
LF-PA0091	Peroxiredoxin II	Mouse	Rabbit PAb	*E. coli*
LF-MA0045	Peroxiredoxin III	Human	Mouse MAb, Clone 4G10	*E. coli*
LF-PA0030	Peroxiredoxin III	Human	Rabbit PAb	*E. coli*
LF-MA0014	Peroxiredoxin IV	Human	Mouse MAb, Clone 7A1	*E. coli*

Cat. No.	Description	Spec. React.	Type	Antigen
LF-PA0009	Peroxiredoxin IV	Human	Rabbit PAb	*E. coli*
LF-MA0017	Peroxiredoxin V	Human	Mouse MAb, Clone 12A	*E. coli*
LF-PA0010	Peroxiredoxin V	Human	Rabbit PAb	*E. coli*
LF-MA0013	Peroxiredoxin VI	Human	Mouse MAb, Clone 1A11	*E. coli*
LF-MA0018	Peroxiredoxin VI	Human	Mouse MAb, Clone 4A3	*E. coli*
LF-MA0067	Peroxiredoxin VI	Human	Mouse MAb, Clone 5E1	*E. coli*
LF-MA0104	Peroxiredoxin VI	Human	Mouse MAb, Clone 6H5	*E. coli*
LF-PA0011	Peroxiredoxin VI	Human	Rabbit PAb	*E. coli*
LF-PA0004	Peroxiredoxin-SO3	Human	Rabbit PAb	Sulfonylated peptide
LF-PA0005	PeroxiredoxinVI-SO3	Human	Rabbit PAb	Sulfonylated peptide
LF-MA0051	PTP1B	Human	Mouse MAb, Clone 3A7	*E. coli*
LF-MA0057	Selenoprotein M	Human	Mouse MAb, Clone 4C2	*E. coli*
LF-MA0058	Selenoprotein M	Human	Mouse MAb, Clone 10C1	*E. coli*
LF-PA0065	STAT2	Human	Rabbit PAb	Synthetic peptide
LF-MA0023	Superoxide Dismutase 1	Human	Mouse MAb, Clone 72B1	*E. coli*
LF-MA0029	Superoxide Dismutase 1	Human	Mouse MAb, Clone 8A1	*E. coli*
LF-PA0013	Superoxide Dismutase 1	Human	Rabbit PAb	*E. coli*
LF-MA0030	Superoxide Dismutase 2	Human	Mouse MAb, Clone 2A1	*E. coli*
LF-MA0035	Superoxide Dismutase 2	Human	Mouse MAb, Clone 1E8	*E. coli*
LF-MA0065	Superoxide Dismutase 2	Human	Mouse MAb, Clone 4F10	*E. coli*
LF-MA0066	Superoxide Dismutase 2	Human	Mouse MAb, Clone 23G5	*E. coli*
LF-PA0021	Superoxide Dismutase 2	Human	Rabbit PAb	*E. coli*
LF-MA0019	Superoxide Dismutase 4	Human	Mouse MAb, Clone 11G1	*E. coli*
LF-MA0016	Superoxide Dismutase 4	Human	Mouse MAb, Clone 2A1	*E. coli*
LF-MA0042	Superoxide Dismutase 4	Human	Mouse MAb, Clone 3A1	*E. coli*
LF-MA0121	Superoxide Dismutase 4	Human	Mouse MAb, Clone 1H12	*E. coli*
LF-PA0022	Superoxide Dismutase 4	Human	Rabbit PAb	*E. coli*
LF-MA0055	Thioredoxin 1	Human	Mouse MAb, Clone 3A1	*E. coli*
LF-MA0077	Thioredoxin 1	Human	Mouse MAb, Clone 8A1	*E. coli*
LF-MA0079	Thioredoxin 2	Human	Mouse MAb, Clone 4C5	*E. coli*
LF-MA0080	Thioredoxin 2	Human	Mouse MAb, Clone 71G4	*E. coli*
LF-PA0012	Thioredoxin 2	Human	Rabbit PAb	*E. coli*
LF-MA0015	Thioredoxin Reductase 1	Human	Mouse MAb, Clone 19A1	*E. coli*
LF-MA0020	Thioredoxin Reductase 1	Human	Mouse MAb, Clone 5A5	*E. coli*
LF-PA0023	Thioredoxin Reductase 1	Human	Rabbit PAb	*E. coli*
LF-MA0025	Thioredoxin Reductase 2	Human	Mouse MAb Clone 7B2	*E. coli*
LF-MA0054	Thioredoxin Reductase 2	Human	Mouse MAb, Clone 25B3	*E. coli*
LF-PA0024	Thioredoxin Reductase 2	Human	Rabbit PAb	*E. coli*

BioVendor
Research
and Diagnostic Products

› Contact Information

BioVendor – Laboratorni medicina a.s.
Karasek 1767/1, 621 00 Brno, Czech Republic
Phone: +420 549 124 185, Fax: +420 549 211 460
E-mail: info@biovendor.com

BioVendor GesmbH
Gaudenzdorfer Gürtel 43-45, 1120 Vienna, Austria
Phone: +43 1 890 9025, Fax: +43 1 890 5163
E-mail: infoAustria@biovendor.com

BioVendor GmbH
Otto-Hahn-Straße 16, 34123 Kassel, Germany
Phone: +49 6221 4339 100, Fax: +49 6221 4339 111
E-mail: infoEU@biovendor.com

BioVendor, LLC
128 Bingham Rd., Suite 1300, Asheville, NC 28806, USA
Phone: +1-800-404-7807, Phone: +1-828-575-9250
Fax: +1-828-575-9251, E-mail: infoUSA@biovendor.com

› www.biovendor.com

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