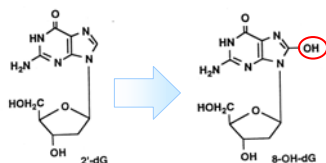




Oxidative Stress Marker

Oxidized DNA damage markers

DNA-damage Biomarker 8-OHdG "8-OHdG ELISA kit" and monoclonal antibody



Formation of 8-hydroxy-2'-deoxyguanosine (8-OHdG) by oxygen radicals.
H Kasai: Environmental Mutagen Research, Vol. 10, p73-78 (1988)

High specificity & high sensitivity:

Cross reactivity was checked for 19 analogues. 19 analogues of 8-OHdG [guanosine (G), 7-methyl-G, 6-SH-G, 8-bromo-G, dA, dC, dT, dI, dU, dG, O6-methyl-dG, 8-OHdA, guanine (Gua), O6-methyl-Gua, 8-OHGua, uric acid, Urea, creatine, creatinine] demonstrate no cross-reactivity. Only 8-sulfhydryl-G and 8-OHG demonstrate minimal cross-reactivity (less than 1%).

Easy operation & speedy:

There is no need for expensive equipment and sample pretreatment. Required equipments are: pipettes, incubator and micro plate reader with 450nm filter. Assays can be completed within 3.5 hours (New 8-OHdG Check).

Description	Cat No.	Size	Measuring Range	Sample
New 8-OHdG Check ELISA	NNS-KOG-200SE-EX	96 well	0.5 - 200 ng/mL	Urine sample
New 8-OHdG Check Trial Package	NNS-KOG-200TE-EX	32 well	0.5 - 200 ng/mL	Urine sample
Highly Sensitive 8-OHdG Check ELISA	NNS-KOG-HS10E-EX	96 well	0.125 - 10 ng/mL	Serum* tissue DNA*

*: sample pretreatment is required.

Reference: S Saito, et al.: Res. Commun. Mol. Pathol. Pharmacol. 107(1&2), p39-44 (2000)

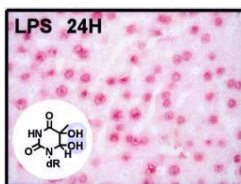
http://www.cosmobio.co.jp/export_e/products/kits/products_NNS_20060421.asp

Description	Cat No.	Size	Clone	Host	Application
Anti 8-OHdG monoclonal antibody	NNS-MOG-020P-EX	20 ug	N45.1	Mouse	IHC
Anti 8-OHdG monoclonal antibody	NNS-MOG-100P-EX	100 ug	N45.1	Mouse	IHC

Reference: S Toyokuni, et. al.: Lab. Invest. 76(3), p365-374 (1997)

http://www.cosmobio.co.jp/export_e/products/kits/products_NNS_20060421_5.asp

Anti Thymidine Glycol (TG) monoclonal antibody



Biomarker for oxidative DNA damage:

Thymidine glycol (TG) is produced when thymidine is damaged by hydroxy radical, and is a sensitive biomarker for oxidative stress. Anti TG monoclonal antibody specific for TG in DNA polymers. Suitable for immunohistochemical research.

Description	Cat No.	Size	Clone	Host	Application
Anti TG monoclonal antibody	NNS-MTG-100P-EX	100 ug	2E8	Mouse	IHC

Reference: S Toyokuni, et. al.: Lab. Invest. 76(3), p365-374 (1997)

http://www.cosmobio.co.jp/export_e/products/kits/products_NNS_20060421_5.asp

- All Cosmo Bio products are for research use only, not for use as a diagnostic.



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Inspiration for Life Science

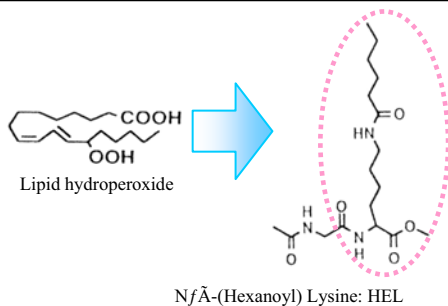
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<http://www.cosmobio.co.jp> e-mail : export@cosmobio.co.jp

Phone : +81-3-5632-9617 FAX : +81-3-5632-9618

Lipid peroxide markers

Hexanoyl-Lysine adduct (HEL) ELISA kit & monoclonal antibody



A new biomarker of lipid peroxidation:

Hexanoyl-Lysine adduct (HEL) is a novel lipid hydroperoxide-modified lysine residues. HEL is formed by oxidative modification by oxidized ω -6 fatty acids such as linoleic acid or arachidonic acid. HEL may be a useful biomarker for initial stage of lipid peroxidation, and is detected in oxidatively modified LDL, in human atherosclerotic lesions and human urine.

ELISA kit suitable for urine and serum samples:

Hexanoyl-Lysine adduct (HEL) is a novel lipid hydroperoxide-modified lysine residues. HEL is formed by oxidative modification by oxidized ω -6 fatty acids such as linoleic acid or arachidonic acid. HEL may be a useful biomarker for initial stage of lipid peroxidation, and is detected in oxidatively modified LDL, in human atherosclerotic lesions and human urine.

Description	Cat No.	Size	Measuring Range	Sample
Hexanoyl-Lys adduct (HEL) ELISA	NNS-KHL-700E-EX	96 well	2 - 700 nmol/L	Urine and animal serum

http://www.cosmobio.co.jp/export_e/products/kits/products_NNS_20060801.asp

For immunohistochemistry and western blotting:

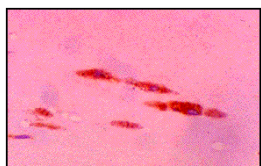
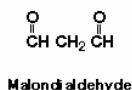
Anti HEL mouse monoclonal antibody (IgG, clone 5H4), lyophilized powder. Cross reactivity was checked for 8 analogues: MDA, glyoxal, methyl glyoxal, 1-hexanal, 2-hexenal, 1-nonanal, 2-nonenal and 4-hydroxy-2-nonenal.

Description	Cat No.	Size	Clone	Host	Application
Anti HEL monoclonal antibody	NNS-MHL-020P-EX	20ug	5H4	Mouse	IHC / WB

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20060926.asp

Reference: Y Kato, et al.: Biochem. Biophys. Res. Commun. 274, p389-393 (2000)

Anti Malondialdehyde (MDA) monoclonal antibody



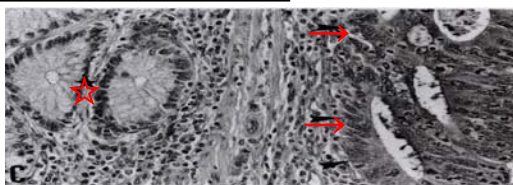
Highly specific for Malondialdehyde (MDA):

Malondialdehyde (MDA) is one of the major aldehyde derived from lipid peroxidation. This antibody is specific for MDA-modified proteins, and suitable for immunohistochemistry and western blotting.

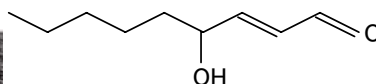
Description	Cat No.	Size	Clone	Host	Application
Anti MDA monoclonal antibody	NOF-N213530-EX	30 ug	1F83	Mouse	IHC / WB

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061030.asp

Anti 4-HNE monoclonal antibody



Immunohistochemistry of colorectal carcinoma cells. Adenocarcinoma (arrows) and nontumorous epithelial cells (star) (Fig. 240). (S. Kondo et al. Free Radical Biology & Medicine 27 pp401-410, 1999)



Highly specific for 4-HNE:

Membrane lipids are one of the targets of reactive oxygen species (ROS). 4-hydroxy-2-nonenal (4-HNE) is a major membrane lipid peroxidation product. Monoclonal antibody against 4-HNE (clone HNE-J2) is highly specific for 4-HNE-His/Lys/Cys adducts.

Anti 4-HNE mouse monoclonal antibody (IgG1 κ), lyophilized powder.

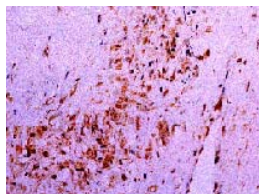
Description	Cat No.	Size	Clone	Host	Application
Anti 4-HNE monoclonal antibody	NNS-MHN-020P-EX	20ug	HNE-J2	Mouse	IHC / WB
Anti 4-HNE monoclonal antibody	NNS-MHN-100P-EX	100ug	HNE-J2	Mouse	IHC / WB

Reference: S Toyokuni, et. al.: FEBS Lett. 359, p189-191 (1995)

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20060929.asp

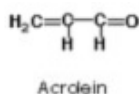


Anti Acrolein (ACR) monoclonal antibody



Biomarker of lipid peroxidation:

Acrolein (ACR) is a representative carcinogenic aldehyde found ubiquitously in the environment and endogenously through oxidation reactions, such as lipid peroxidation and myeloperoxidase-catalyzed amino acid oxidation. ACR is highly reactive aldehyde and reacts with lysine residue in protein.



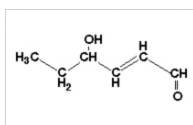
Anti ACR mouse monoclonal antibody (IgG, clone 5F6). Cross reactivity was checked for 14 analogues: crotonal, 2-hexenal, 2-octanal, 2-nonenal, 4-decanal, 2,4-decadienal, MDA, 4-HHE, 4-HPE, 4-HON, 4-HNE, n-propanal, n-pentanal and n-hexenal.

Description	Cat No.	Size	Clone	Host	Application
Anti ACR monoclonal antibody	NOF-N213320-EX	20ug	5H4	Mouse	IHC / WB
Anti ACR monoclonal antibody	NOF-N213310-EX	100ug	5H4	Mouse	IHC / WB

Reference: K.Satoh, et. al. Analytical Biochemistry.270,323-328(1999)

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061018.asp

Anti 4-hydroxy-2-hexenal (4-HHE) monoclonal antibody

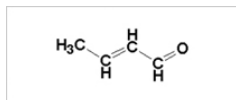


4-hydroxy-2-alkenal is one of the major lipid peroxidation products, and shows many biological effects such as high toxicity to cells. Among them, 4-hydroxy-2-hexenal (4-HHE) is an aldehyde formed during peroxidation of n-3 fatty acids such as docosahexaenoic acid.

Description	Cat No.	Size	Clone	Host	Application
Anti 4-HHE monoclonal antibody	NOF-N213730-EX	30 ug	HHE53	Mouse	IHC

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061020.asp

Anti Crotonaldehyde (CRA) monoclonal antibody

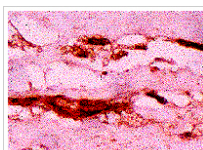


Crotonaldehyde (CRA) is a representative carcinogenic aldehyde formed endogenously through lipid peroxidation. CRA is a highly reactive aldehyde and reacts with lysine residue in proteins.

Description	Cat No.	Size	Clone	Host	Application
Anti CRA monoclonal antibody	NOF-N213630-EX	30 ug		Mouse	IHC

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061106.asp

Anti Methylglyoxal (MG) monoclonal antibody



Methylglyoxal (MG), an endogenous metabolite that increases in diabetes and is a common intermediate in the Maillard reaction (glycation), reacts with proteins and forms advanced glycation end products (AGE).

Description	Cat No.	Size	Clone	Host	Application
Anti MG monoclonal antibody	NOF-N213430-EX	30 ug		Mouse	IHC

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061020.asp

Anti 7-ketocholesterol (7-KC) monoclonal antibody



Cholesterol oxidation products, especially 7-ketocholesterol (7-KC) have been the focus of much attention because they are present in human atherosclerotic plaque and display a wide range of atherogenic properties in vitro and in vivo.

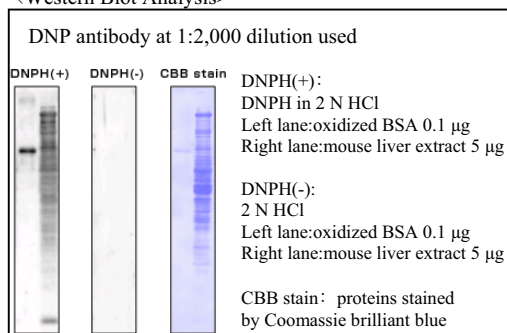
Description	Cat No.	Size	Clone	Host	Application
Anti 7-KC monoclonal antibody	NOF-N213820-EX	20 ug		Mouse	IHC
Anti 7-KC monoclonal antibody	NOF-N213810-EX	100 ug		Mouse	IHC

http://www.cosmobio.co.jp/export_e/products/antibodies/products_NNS_20061024.asp

Oxidized Protein damage markers

Protein Carbonyls Western Blot Detection Kit

<Western Blot Analysis>



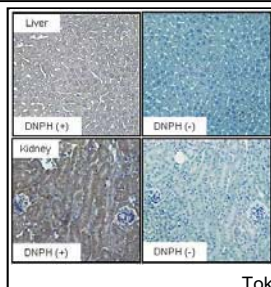
Detect specifically oxidized proteins:

This kit used 2,4-Dinitrophenylhydrazine (DNPH) for the derivative of carbonyl groups and specifically detect DNP-conjugate forms by using anti-DNP antibody. In the previous old methods, each sample has to pre-derivatize by DNPH before electrophoresis. And it was very difficult to identify individual protein carbonyls because pre-derivative alters protein charge resulting in different electrophoresis mobility. To avoid this problem, this kit derivatizes protein carbonyls to DNP-conjugate form onto the transferred membrane. That is, it is not necessary to pre-derivatize each sample before electrophoresis. This simple operation contributes to much shorter experimental time in the laboratory. This kit can detect specifically oxidized proteins.

Description	Cat No.	Size
Protein carbonyls western blot detection kit (15Blots)	SML-ROIK03-EX	1 kit

http://www.cosmobio.co.jp/export_e/products/kits/products_SML_20080117.asp

Protein Carbonyls Immunohistochemical Staining Kit



Mouse liver and kidney sections stained with rabbit anti-DNP antibody at 1:100 dilution and developed by 3,3'-diaminobenzidine (DAB). Specimens were incubated with (DNPH(+)) or without (DNPH(-)) DNPH solution. Protein carbonyls are detected only in DNPH-treated specimen and not detected at all in untreated specimen.

Courtesy of Dr. Akihito Ishigami,
Tokyo Metropolitan Institute of Gerontology

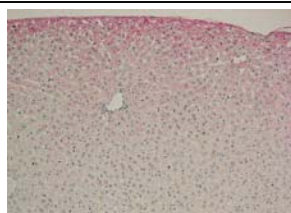
Enable detection of protein carbonyls by immunohistochemical staining:

In the central feature of this kit, carbonyl groups in tissue are first derivitized by reaction with 2,4-Dinitrophenylhydrazine (DNPH). DNPH-derivitized carbonyls are then detected using an anti-DNP specific antibody suitable for immunohistochemical procedures. The Protein Carbonyls Immunohistochemical Staining Kit is the first kit to enable detection of protein carbonyls by immunohistochemical staining.

Description	Cat No.	Size
Protein Carbonyls Immunohistochemical Staining Kit (50 slides)	SML-ROIK04-EX	1 kit

http://www.cosmobio.co.jp/export_e/products/kits/products_SML_20080218.asp

Anti Dibromo Tyrosine monoclonal antibody



A new biomarker of protein oxidation caused by neutrophils:

Neutrophils and eosinophils play an important role in the defence system against microbial infection. Myeloperoxidase and eosinophil peroxidase are known to catalyze formation of hypochlorous acid (HOCl) and hypobromous acid (HOBr). These reactive intermediates react with proteins, and are known to form tyrosine halogenation such as dibromotyrosine (DiBrY).

This monoclonal antibody is specific for 3,5-DiBrY, and suitable for immunohistochemical analysis of oxidative stress.

Description	Cat No.	Size	Clone	Host	Application
Anti DiBrY monoclonal antibody	NNS-MBY-020P-EX	20ug	3A5	Mouse	IHC

Reference: Y Kato, et. al. Rad Biol Med, 38, p24-31 (2005)

Anti Dityrosine (DT) monoclonal antibody

This antibody binds to dityrosine, 3-(p-hydroxyphenyl) propionic acid dimer, dityrosine-conjugated BSA, Dityrosine in proteins and peptides. Cross reactivity have been checked to following analogues: Nitrotyrosine, chlorotyrosine, aminotyrosine, phosphotyrosine, tyrosine, 3-(p-hydroxyphenyl) propionic acid, 3,4-dihydroxyphenylacetic acid (DOPA) and phenylalanine.

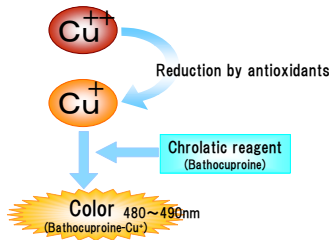
Description	Cat No.	Size	Clone	Host	Application
Anti DiBrY monoclonal antibody	NNS-MDT-020P-EX	20ug	1C3	Mouse	IHC / WB

Reference: Y Kato et al., Biochem Biophys Res Commun. 275(1), 11-15 (2000)



Antioxidant assay

Test kit for Total Antioxidant Capacity (PAO)



Significance of Antioxidants:

For accurate assessment of oxidative stress, measurement of ROS, oxidative damage and antioxidant activity may be essential. Recently, antioxidants as functional foods which scavenge ROS attract a great deal of attention. In the PAO assay kit, an easy and convenient method to measure antioxidant capacity is provided. Utilizing the reduction of cupric ion ($\text{Cu}^{++} \Rightarrow \text{Cu}^+$), antioxidant capacity of samples can be detected in 5 minutes.

Samples	Sample pretreatment		Samples required	Assay example	
	Pre-dilution	Assay dilution			
Human serum or heparinized plasma	-	Mix with 39 volumes of Sample Diluent	10 μL	Mean 1069 \pm 145 $\mu\text{mol/L}$	
Human urine	Mix with 3 volumes of distilled water.		2 μL	5508 $\mu\text{mol/L}$	
Foods	Red wine		Mix with 3 volumes of distilled water.	2 μL	45479 $\mu\text{mol/L}$
	Green tea		Mix with 7 volumes of distilled water.	2 μL	8728 to 46687 $\mu\text{mol/L}$
	Black tea		Mix with 7 volumes of distilled water.	2 μL	
	Coffee	volumes of distilled water.	1 μL		

Application to foods, beverages and serum:

PAO can detect not only hydrophilic antioxidants such as Vitamin C, glutathione, but also can detect hydrophobic antioxidants such as Vitamin E. Applicable for assessment of total antioxidants of serum, foods and beverage samples.

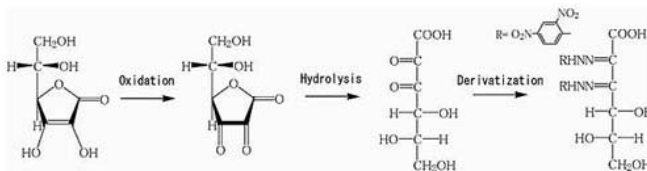
Required equipments are: pipettes, and microplate reader with 492nm filter.

Description	Cat No.	Size	Measuring Range	Sample
Potential Anti Oxidant (PAO)	NNS-KPA-050E-EX	96 well	21.9 - 4378 $\mu\text{mol/L}$ (reduction power)	Human and animal serum

Reference: C. VASSALLE, et. al. Journal of Internal Medicine 2004; 256: 308-315

http://www.cosmobio.co.jp/export_e/products/kits/products_NNS_20061013.asp

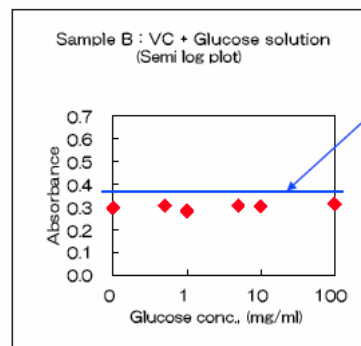
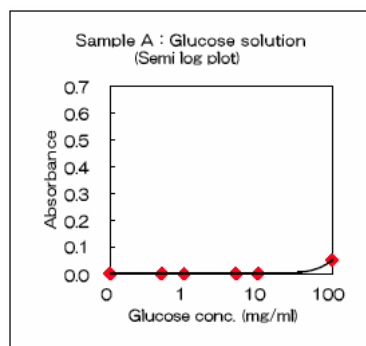
Vitamin C Assay kit



The method of this kit is a refinement of the colorimetric assay described by Daniel (1973).

AsA in a given sample is converted to DHAs by oxidizing agent. DHAs is then derivatized with DNP. Total vitamin C concentration (AsA + DHAs) can be determined by the specific UV absorption of the DNP derivative.

Vitamin C Assay report (Glucose)



Description	Cat No.	Size	Sample
Vitamin C, Assay kit	SML-ROIK02-EX	1 kit	internal organ, tissue, plasma, fruit and vegetable

http://www.cosmobio.co.jp/export_e/products/kits/products_SML_20071105.asp

Oxidative Stress Markers Price List

	Cat#	Description	Quantity	Price
Oxidized DNA damage markers				
8-OHdG (8-hydroxy-2'-deoxyguanosine) ELISA kit & antibody	NNS-KOG-200SE-EX	New 8-OHdG Check ELISA	96well	¥102400 / \$976 / €788
	NNS-KOG-200TE-EX	New 8-OHdG Check Trial Package	32well	¥44800 / \$427 / €345
	NNS-KOG-HS10E-EX	Highly Sensitive 8-OHdG Check ELISA	96well	¥102400 / \$976 / €788
	NNS-MOG-020P-EX	Anti 8-OHdG monoclonal antibody	20ug	¥33300 / \$318 / €257
	NNS-MOG-100P-EX	Anti 8-OHdG monoclonal antibody	100ug	¥128000 / \$1220 / €985
Anti Thymidine Glycol (TG) monoclonal antibody	NNS-MTG-100P-EX	Anti TG monoclonal antibody	100ug	¥76800 / \$732 / €591
Lipid peroxide markers				
Hexanoyl-Lysine adduct (HEL) ELISA kit & antibody	NNS-KHL-700E-EX	Hexanoyl-Lys adduct (HEL) ELISA	96well	¥76,800 / \$732 / €591
	NNS-MHL-020P-EX	Anti HEL monoclonal antibody	20ug	¥33300 / \$318 / €257
Anti MDA monoclonal antibody	NOF-N213530-EX	Anti MDA monoclonal antibody	30ug	¥57600 / \$549 / €444
Anti 4-HNE monoclonal antibody	NNS-MHN-020P-EX	Anti 4-HNE monoclonal antibody	20ug	¥23100 / \$220 / €178
	NNS-MHN-100P-EX	Anti 4-HNE monoclonal antibody	100ug	¥98,600 / \$854 / €690
Anti ACR monoclonal antibody	NOF-N213320-EX	Anti ACR monoclonal antibody	20ug	¥36000 / \$343 / €277
	NOF-N213310-EX	Anti ACR monoclonal antibody	100ug	¥144000 / \$1372 / €1108
Anti 4-HHE monoclonal antibody	NOF-N213730-EX	Anti 4-HHE monoclonal antibody	30ug	¥72000 / \$686 / €554
Anti CRA monoclonal antibody	NOF-N213630-EX	Anti CRA monoclonal antibody	30ug	¥86400 / \$823 / €665
Anti MG monoclonal antibody	NOF-N213430-EX	Anti MG monoclonal antibody	30ug	¥57600 / \$549 / €444
Anti 7-KC monoclonal antibody	NOF-N213820-EX	Anti 7-KC monoclonal antibody	20ug	¥ 57600 / \$549 / €444
	NOF-N213810-EX	Anti 7-KC monoclonal antibody	100ug	¥172800 / \$1646 / €1330
Oxidized Protein damage markers				
Protein carbonyls western blot detection kit	SML-ROIK03-EX	Protein carbonyls western blot detection kit (15Blots)	1kit	¥50000 / \$477 / €385
Protein Carbonyls Immunohistochemical Staining Kit	SML-ROIK04-EX	Protein Carbonyls Immunohistochemical Staining Kit (50 slides)	1kit	¥50000 / \$477 / €385
Anti Dibromo Tyrosine monoclonal antibody	NNS-MBY-020P-EX	Anti DiBrY monoclonal antibody	20ug	¥30800 / \$294 / €237
Anti Dityrosine (DT) monoclonal antibody	NNS-MDT-020P-EX	Anti DiBrY monoclonal antibody	20ug	¥30800 / \$294 / €237
Antioxidant assay				
Test kit for Total Antioxidant Capacity (PAO)	NNS-KPA-050E-EX	Potential Anti Oxidant (PAO)	96well	¥89600 / \$854 / €690
Vitamin C Assay kit	SML-ROIK02-EX	Vitamin C, Assay kit	1kit	¥30000 / \$286 / €231



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