Wako Product Update

Please visit the Wako Online Catalog

http://www.e-reagent.com

Wako

Alphabetical Index –Wako Product Update No.19–

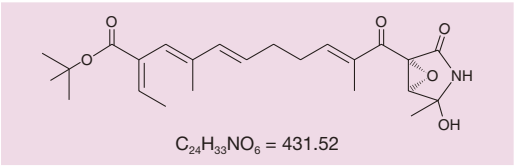
Novel Inhibitors

Wako commercialized new inhibitors which were discovered by Dr. Hiroyuki Osada, Antibiotics laboratory of Institute of Physical and Chemical Research (RIKEN) under license from RIKEN.

• HSP60 Inhibitor

ETB

This product is a derivative of epolactaene isolated from *Penicillium*. It has a more potent cytostatic effect on human neuroblastoma cells SH-SY 5Y than that of epolactaene, and induces apoptosis. Furthermore, it has been revealed that ETB induces apoptosis in human T-lymphoma cells Jurkat. Recently, HSP60 was identified as one of ETB binding proteins. ETB binds to HSP60 to inhibit chaperone activity.



$C_{24}H_{33}NO_6$ = 431.52

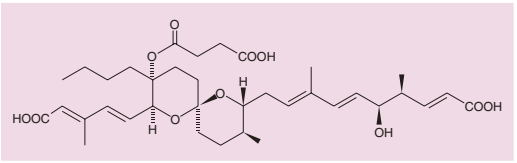
[Reference]

Nagumo, Y., Kakeya, H., Shoji, M., Hayashi, Y., Dohmae, N. and Osada, H.: *Biochem. J.*: **387**(3), 835 (2005).

• Protein Synthesis Inhibitor

Reveromycin A Sodium Salt

This product is an antibiotic isolated from *Streptomyces*. It targets isoleucyl-tRNA synthetase and inhibits protein synthesis in eukaryotes. It has been investigated for its antitumor and antifungal activities. However, recent studies have revealed that low-dose of reveromycin A induces cell death of activated osteoclasts, which leads to acidic environment. Thus it receives attention as a candidate for the treatment of osteoporosis/ multiple myeloma.
(This product is a sodium salt of the compound shown right.)



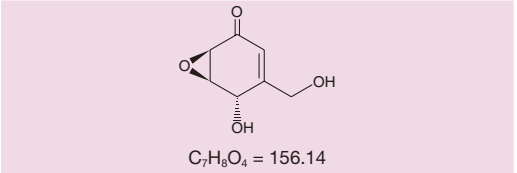
[Reference]

Woo, J. T., Kawatani, M., Kato, M., Shinki, T., Yonezawa, T., Kanoh, N., Nakagawa, H., Takami, M., Lee, K.H., Stern, P.H., Nagai, K. and Osada, H.: *Proc. Natl. Acad.Sci. USA*: **103**(12), 4729 (2006).

• Apoptosis Inhibitor

RKTS-33

This product is a derivative of epoxycylohexenone isolated from *Paecilomyces*. It has lower toxicity than epoxycylohexenone. Like epoxycylohexenone, it inhibits apoptosis not by inhibition of perforin-dependent pathway by cytotoxic T lymphocytes but by selective inhibition of Fas ligand-dependent pathway alone.



$C_7H_8O_4$ = 156.14

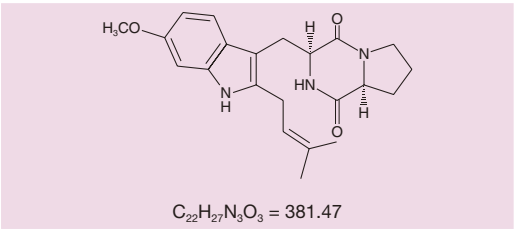
[Reference]

Mitsui, T., Miyake, Y., Kakeya, H., Hayasi, Y., Osada, H. and Kataoka, T.: *Biosci. Biotechnol. Biochem.*: **69**(10), 1923 (2005).

• Cell Cycle Inhibitor

Tryprostatin A

This product is an alkaloid antibiotic isolated from *Aspergillus*. It affects the microtubule-associated protein binding site and exhibits antitumor activity by inhibition of cell cycle progression in the M phase specifically



$C_{22}H_{27}N_3O_3$ = 381.47

[Reference]

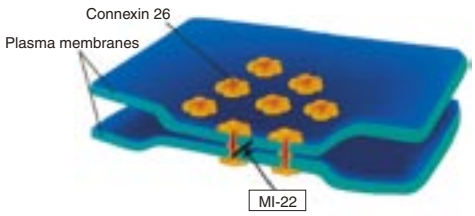
Usui, T., Kondoh, M., Cui, C.B., Mayumi, T. and Osada, H.: *Biochem. J.*: **333**(3), 543 (1998).

	Description	Wako Cat. No. (Pkg. Size)	Grade	Storage
GSP60 Inhibitor	**ETB**	051-07671 (200 µL)	for Cellbiology	Ship and keep at -20 ˚C
Protein Synthesis Inhibitor	**Reveromycin A Sodium Salt**	185-02181 (500 µg)		
Apoptosis Inhibitor	**RKTS-33**	182-02191 (200 µg)		
Cell Cycle Inhibitor	**Tryprostatin A**	203-16961 (500 µg)		

Coming Soon!

1. Metastasis Suppressing Agent

Recent studies have shown that the expression of connexin 26, a protein component of gap junction, is increased in cancer cell lines, and suggested that the protein is involved in the mechanism of metastasis in cancer cells.
It has been revealed that MI-22 (metastasis inhibitor-22), which is a derivative of oleamide, does not only inhibit the connexin 26-mediated formation of gap junction between cancer and other cells but inhibits the spontaneous metastasis *in vivo*.

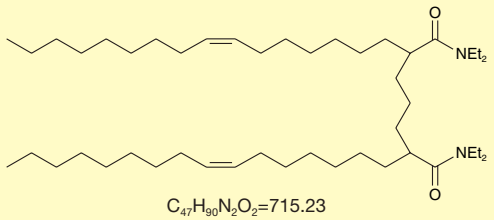


[Features]

1. **Specific inhibition of connexin 26**
2. **Inhibition of gap junction intercellular communication**
3. **Inhibition of spontaneous metastasis *in vivo***

[References]

1. Ito, A., *et al.*,: *J. Clin. Invest.*, **105**, 1189 (2000).
2. Ito, A., *et al.*: *Carcinogenesis*, **25**, 2015 (2004).
3. Ohba, Y., *et al.*: *Int. J. Cancer*, **121**, 2801 (2007).



$C_{47}H_{90}N_2O_2$=715.23
Appearance: Yellow Oily matter

Description	Wako Cat. No. (Pkg. Size)	Note
MI-22 [Metastasis Inhibitor-22][N^1,N^1,N^7,N^7-Tetraethyl-2,6-di[(*Z*)-7-hexadecenyl]-heptanediamide] $C_{47}H_{90}N_2O_2$ = 715.23	132-15043 (5 mg) 136-15041 (200 mg)	Keep and Ship at 2~10 ˚C in a dark place. Filled with inert gas. Please arrange for immediate use after opening.

2. Alkylating Compounds

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
1,4-Butanediol Dimethanesulfonate [Busulfan] 97.0+% (cGC), CAS No. 55-98-1, $C_6H_{14}O_6S_2$ = 246.30	029-09352 (25 g)	Chronic myeloid leukemia	Keep and ship below 25 ˚C in a dark place
Cyclophosphamide Monohydrate 97.0+% (Titration), CAS No. 6055-19-2, $C_7H_{15}Cl_2N_2O_2P•H_2O$ = 279.10	030-12953 (1 g) 034-12951 (5 g)	Breast cancer, Ovary cancer, Malignant lymphoma	Keep and ship at 2~10 ˚C in a dark place
Dacarbazine 98.0+% (Potentiometric titration) CAS No. 4342-03-4, $C_6H_{10}N_6O$ = 182.18	047-29951 (200 mg) 043-29953 (1 g)	Malignant melanoma, Malignant lymphoma	Keep and ship at 2~10 ˚C in a dark place
Ifosfamide 98.0+% (HPLC) CAS No. 3778-73-2, $C_7H_{15}Cl_2N_2O_2P$ = 261.09	090-05401 (50 mg) 096-05403 (500 mg)	Lung cancer, Prostate cancer	Keep and ship below 25 ˚C in a dark place
Melphalan CAS No. 148-82-3, $C_{13}H_{18}Cl_2N_2O_2$ = 305.20	135-15251 (100 mg) 131-15253 (1 g)	Multiple myeloma	Keep and ship below 25 ˚C in a dark place
Procarbazine Hydrochloride 98.0+% (potentiometric titration) CAS No. 366-70-1, $C_{12}H_{19}N_3O·HCl$ = 257.76	161-22581 (100 mg) 167-22583 (1 g)	Malignant lymphoma	Keep and ship below 25 ˚C in a dark place

3. Antimetabolic Drugs

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Carmofur CAS No. 61422-45-5, $C_{11}H_{16}FN_3O_3$ = 257.26	035-20051 (1 g) 031-20053 (5 g)	Digestive organs cancer, Breast cancer	Keep and ship at 2~10 ˚C in a dark place
Cytosine-1-β-D(+)-arabinofuranoside [Cytarabine] 98.0+% (HPLC), CAS No. 147-94-4, $C_9H_{13}N_3O_5$ = 243.22	030-11951 (100 mg) 034-11954 (500 mg) 036-11953 (1 g)	Digestive organs cancer, Breast cancer, Acute myelogenous leukemia	Keep and ship at 2~10 ˚C in a dark place
Doxifluridine CAS No. 3094-09-5, $C_9H_{11}FN_2O_5$ = 246.19	042-29901 (100 mg) 048-29903 (1 g)	Digestive organs cancer, Breast cancer	Keep and ship below 25 ˚C in a dark place
5-Fluorouracil [5-FU] 98.5+% (HPLC) CAS No. 51-21-8, $C_4H_3FN_2O_2$ = 130.08	068-01401 (1 g) 064-01403 (5 g) 066-01402 (25 g)	Breast cancer, Womb cancer, Digestive organs cancer	Keep and ship at RT in a dark place
Hydroxyurea [Hydroxycarbamide] 90.0+% (Titration) CAS No. 127-07-1, $H_2NCONHOH$ = 76.06	085-06653 (5 g) 089-06651 (10 g)	Chronic myeloid leukemia	Keep and ship at 2~10 ˚C in a dark place
6-Mercaptopurine Monohydrate 98.0~102.0% CAS No. 6112-76-1, $C_5H_4N_4S·H_2O$ = 170.19	130-07991 (1 g) 136-07993 (5 g)	Acute myelogenous leukemia, Chronic myeloid leukemia	Keep and ship at RT in a dark place
Methotrexate 98.0+% (HPLC) CAS No. 59-05-2, $C_{20}H_{22}N_8O_5$ = 454.44	139-13571 (100 mg) 135-13573 (1 g)	Breast cancer, Chronic lymphoid leukemia	Keep and ship at RT in a dark place
1-(2-Tetrahydrofuryl)-5-fluorouracil [Tegafur] 98.0+% (Titration), CAS No. 17902-23-7, $C_8H_9FN_2O_3$ = 200.17	206-10351 (1 g) 202-10353 (5 g)	Digestive organs cancer, Breast cancer	Keep and ship below 25 ˚C in a dark place

4. Antibiotics

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Aclarubicin Hydrochloride Potency: 860+μg/mg CAS No. 75443-99-1, $C_{42}H_{53}NO_{15}\cdot HCl = 843.34$	017-12341 (10 mg)	Digestive organs cancer, Breast cancer	Keep at 2~10 ˚C in a dark place and ship at RT
Actinomycin D 97.0+% (HPLC) CAS No. 50-76-0, $C_{62}H_{86}N_{12}O_{16} = 1255.42$	013-13421 (5 mg)	Wilms' tumor, Trophoblastic disease	Keep and ship at -20 ˚C in a dark place
Bleomycin Hydrochloride Potency: 1,400~2,000μg/mg CAS No. 67763-87-5, Molecular formula: Unspecified.	028-07801 (10 mg)	Skin cancer, Head and neck cancer	Keep at 2~10 ˚C in a dark place and ship at RT
Daunorubicin Hydrochloride CAS No. 23541-50-6, $C_{27}H_{29}NO_{10}\cdot HCl = 563.98$	043-30041 (5 mg) 049-30043 (50 mg)	Acute leukemia	Keep and ship at 2~10 ˚C in a dark place
Doxorubicin Hydrochloride [Adriamycin HCl] Potency: 900+μg/mg CAS No. 25316-40-9, $C_{27}H_{29}NO_{11}\cdot HCl = 579.98$	040-21521 (10 mg) 046-21523 (50 mg)	Digestive organs cancer, Malignant lymphoma	Keep at 2~10 ˚C in a dark place and ship at RT
Epirubicin Hydrochloride CAS No. 56390-09-1, $C_{27}H_{29}NO_{11}\cdot HCl = 579.98$	058-07561 (1 mg) 054-07563 (5 mg)	Malignant lymphoma, Digestive organs cancer	Keep and ship at 2~10 ˚C in a dark place
Fumagillin 95+% (TLC), CAS No. 23110-15-8, $C_{26}H_{34}O_7 = 458.54$	065-04071 (1 mg) 061-04073 (5 mg)	Antiangiogenic	Keep and ship at -20 ˚C in a dark place
Mitomycin C Potency: 850+μg/mg CAS No. 50-07-7, $C_{15}H_{18}N_4O_5 = 334.33$	134-07911 (10 mg)	Digestive organs cancer, Womb cancer	Keep at 2~10 ˚C in a dark place and ship at RT
Mitomycin C with NaCl <Mitomycin: 2 mg; NaCl: 48 mg> CAS No. 50-07-7, $C_{15}H_{18}N_4O_5 = 334.33$	132-13201 (2 mg) 138-13203 (2 mg × 10)		
Peplomycin Sulfate Potency: 843+μg/mg CAS No. 70384-29-1, $C_{61}H_{88}N_{18}O_{21}S_2\cdot H_2SO_4 = 1,571.68$	169-12011 (10 mg)	Skin cancer, Head and neck cancer	Keep at 2~10 ˚C in a dark place and ship at RT
Pirarubicin Potency: 950+μg/mg CAS No. 72496-41-4, $C_{32}H_{37}NO_{12} = 627.64$	160-14741 (25 mg)	Breast cancer, Head and neck cancer	Keep at 2~10 ˚C in a dark place and ship at RT

5. Plant Alkaloids

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Paclitaxel 97.0+% (HPLC) CAS No. 33069-62-4, $C_{47}H_{51}NO_{14} = 853.91$	169-18616 (1 mg) 169-18611 (5 mg) 165-18613 (25 mg) 163-18614 (100 mg)	Ovary cancer, Stomach cancer, Breast cancer, Digestive organs cancer	Keep and ship at 2~10 ˚C in a dark place.
Vinblastine Sulfate 97.0+% (HPLC) CAS No. 143-67-9, $C_{46}H_{58}N_4O_9\cdot H_2SO_4 = 909.05$	221-00751 (10 mg) 227-00753 (50 mg)	Malignant lymphoma, Trophoblastic disease	Keep and ship at 2~10 ˚C in a dark place.
Vindesine Sulfate 96.0+% (HPLC) CAS No. 59917-39-4, $C_{43}H_{55}N_5O_7\cdot H_2SO_4 = 852.00$	225-01631 (2 mg) 221-01633 (10 mg)	Lung cancer, Gullet cancer	Keep and ship at -80 ˚C in a dark place.
Vinorelbine Ditartrate CAS No. 125317-39-7, $C_{45}H_{54}N_4O_8\cdot 2C_4H_6O_6 = 1,079.11$	222-01641 (10 mg) 228-01643 (50 mg)	Lung cancer, Breast cancer	Keep and ship at -20 ˚C in a dark place. Filled with inert gas

6. Synthetic Hormone Agents

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Cholormadinone Acetate 98.0+% (HPLC) CAS No. 302-22-7, $C_{23}H_{29}ClO_4 = 404.93$	035-15161 (1 g) 031-15163 (5 g)	Prostate dilation syndrome	Keep and ship at RT in a dark place
Dexamethasone 98.0~102.0% (Titration) CAS No. 50-02-2, $C_{22}H_{29}FO_5 = 392.46$	047-18863 (100 mg) 041-18861 (1 g)	Malignant lymphoma, Breast cancer	Keep and ship at 2~10 ˚C in a dark place
Flutamide 98.0+% (HPLC) CAS No. 13311-84-7, $C_{11}H_{11}F_3N_2O_3 = 276.21$	069-04851 (2 g) 065-04853 (10 g)	Prostate cancer	Keep and ship below 25 ˚C in a dark place
Medroxyprogesterone Acetate 98.0+% (HPLC) CAS No. 71-58-9, $C_{24}H_{34}O_4 = 386.52$	138-09991 (1 g) 134-09993 (5 g)	Breast cancer, Womb cancer	Keep and ship at RT in a dark place
Prednisolone 97.0~103.0% (Absorptiometry) CAS No. 50-24-8, $C_{21}H_{28}O_5 = 360.45$	165-11491 (1 g) 161-11493 (5 g)	Malignant lymphoma, Breast cancer	Keep and ship at RT in a dark place
Tamoxifen Citrate 98.0+% (Titration) CAS No. 54965-24-1, $C_{26}H_{29}NO\cdot C_6H_8O_7 = 563.64$	209-14361 (250 mg) 205-14363 (1 g) 203-14364 (5 g) 207-14362 (25 g)	Breast cancer	Keep and ship at 2~10 ˚C in a dark place.

7. Platinum Complex

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Carboplatin 97.0+% (HPLC) CAS No. 41575-94-4, $C_6H_{12}N_2O_4Pt$ = 371.25	039-16041 (25 mg) 035-16043 (250 mg)	Head and neck cancer, Lung cancer	Keep and ship at RT in a dark place
Cisplatin 98.0+% (HPLC) CAS No. 15663-27-1, $PtCl_2(NH_3)_2$ = 300.05	033-20091 (200 mg) 039-20093 (2 g)	Bladder cancer, Head and neck cancer	Keep and ship at 2~10 ˚C in a dark place. Filled with inert gas
Oxaliplatin 97.0+% (HPLC) CAS No. 61825-94-3, $C_8H_{14}N_2O_4Pt$ = 397.29	156-02691 (5 mg) 152-02693 (50 mg)	Colon cancer	Keep and ship at -20 ˚C in a dark place

8. Immunostimulant

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
Bestatin 96.0+% (HPLC) $C_{16}H_{24}N_2O_4$ = 308.37	027-14101 (100 mg)	nonspecific immunostimulant	Keep and ship at -20 ˚C in a dark place

9. Others

Description	Wako Cat. No. (Pkg. Size)	Target Cancer	Note
***all-trans*-Retinoic Acid** [Tretinoin] 97.0+% (HPLC) CAS No. 302-79-4, $C_{20}H_{28}O_2$ = 300.44	186-01114 (50 mg) 182-01116 (100 mg) 182-01111 (250 mg) 188-01113 (1 g)	Acute myelogenous leukemia	Keep and ship at -20 ˚C in a dark place

1. LPS (Lipopolysaccharide)

LPS is the component of the outermost layer of the cell wall of Gram-negative bacteria. Two kinds of products, one prepared by isolating rough LPS from cells by phenol-water extraction (Westphal method) (product purified by phenol extraction) and the other purified by ultracentrifugation and washed twice (product purified by ultracentrifugation), are available. These can be used for studies on the induction of various inflammatory responses.

Three LPSs of Proteus vulgaris strains are used for serodiagnosis (Weil-Felix reaction) of rickettsial infections (anthema, epidemic typhus, trombiculiasis). It has been revealed that the LPS O-antigens of Rickettsias and Proteus vulgaris have a consensus structure.

Description	strain	purifidcation	Wako Cat. No. (Pkg. Size)	Grade	Storage
Lipopolysaccharide, from *Escherichia coli* [LPS], Lyophilized	O26	by phenol extraction	120-05131 (25 mg)	for Cellbiology	Ship and keep at 2-10 ˚C
	O55	by phenol extraction	127-05141 (25 mg)		
	O111	by phenol extraction	125-05201 (25 mg)		
	O127	by phenol extraction	124-05151 (25 mg)		
	O26	by ultracentrifugation	121-05161 (5 mg)		
	O55	by ultracentrifugation	128-05171 (5 mg)		
	O103	by ultracentrifugation	126-05471 (5 mg)		
	O111	by ultracentrifugation	125-05181 (5 mg)		
	O127	by ultracentrifugation	122-05191 (5 mg)		
	O157	by ultracentrifugation	129-05461 (5 mg)		
Lipopolysaccharide, from *Proteus vulgaris* [LPS], Lyophilized	OX2	by phenol extraction	124-05271 (25 mg)		
	OX19	by phenol extraction	121-05281 (25 mg)		
	OXK	by phenol extraction	128-05291 (25 mg)		

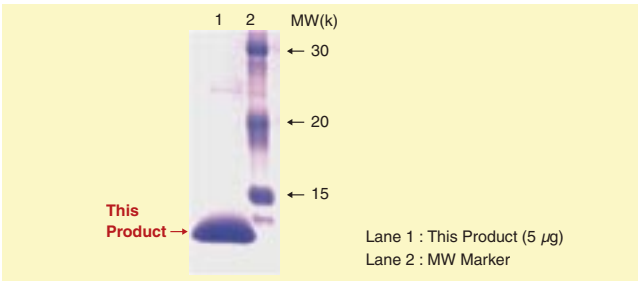
1. Recombinant Protein expressed in PLANTS containing No Animal-derived Components

Culture media without animal by-products have been attracting attention in tissue cultures for regenerative medicine and in the manufacturing of vaccines or antibody drugs with cultured animal cells, etc.
In order to respond to these needs, Wako provides four kinds of recombinant proteins expressed in plants, namely bovine aprotinin, human lactoferrin, human lysozyme and bovine trypsin. These products are free from contamination of viruses of human origin or BSE causative substances.

Aprotinin, Bovine, recombinant, expressed in Plants, Solution

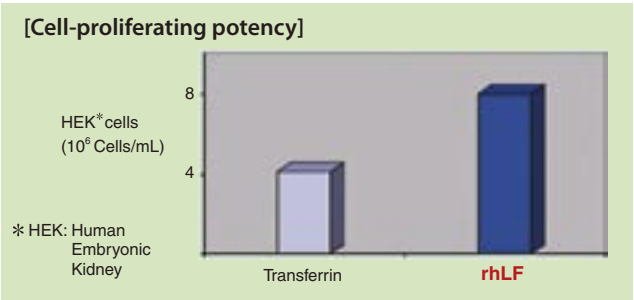
This product is used for the inactivation of trypsin by adding it after trypsinization of adherent cultured animal cells.

Protease inhibitory activity: > 5TIU/mg protein
1 TIU (Trypsin Inhibitor Unit) ≒ 900 KIU (Kallikrein Inhibitor Unit)
8 UIP (Peptidases Inhibitor Units) = 1 KIU (Kallikrein Inhibitor Unit)



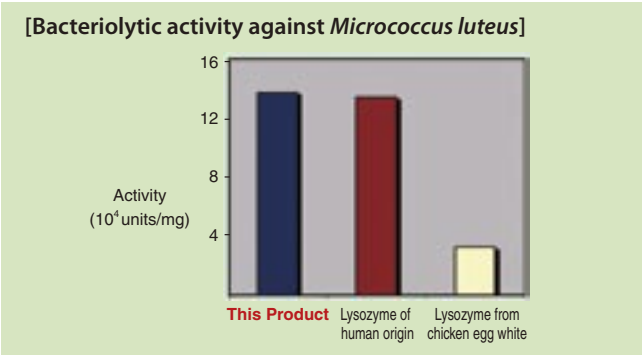
Lactoferrin, Human, recombinant, expressed in Plants

This product is used suitably for the cultivation of general cells or cells with low growth efficiency, and for the production of IgG_1 from hybridomas. IgG_1 production from hybridomas in the serum-free minimal medium is about 1.5 times higher than in the transferrin-added media.



Lysozyme, Human, recombinant, expressed in Plants

This product exhibits over 4 times higher bacteriolytic activity against Gram positive and negative bacteria when compared to Lysozyme from chicken egg white. The bacteriolytic activity is comparable with Lysozyme of human origin. It is used optimally for the prevention of contamination when producing recombinant proteins from animal cells.
Unit definition: One unit is defined as the amount of enzyme that will cause a change in absorbance of 0.001 at 450 nm using a suspension of *Micrococcus* bacteria as substrate.



Trypsin, Bovine, recombinant, expressed in Corn

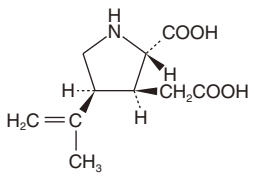
This product is used for the trypsinization of adherent cultured animal cells.
Activity: ≥ 72 TAME units/mg (≥ 3,300 USP units/mg)
Unit definition: One TAME unit is defined as the amount of enzyme that will catalyze the hydrolysis of 1 μmol N_α-*p*-tosyl-L-arginine methyl ester (TAME) per minute in the presence of 0.01mol/L calcium ion at 25 °C, pH 8.2.
1 TAME unit = 19.2 USP unit = 57.5 BAEE unit

Description	Wako Cat. No. (Pkg. Size)	Grade	Storage
Aprotinin, Bovine, recombinant expressed in plants, Solution	014-21021 (500 μL)	for Cell Culture	Ship and keep at 2-10 °C
	010-21023 (1,000 μL)		
Lactoferrin, Human, recombinant expressed in plants [rhLF]	188-02051 (50 mg)		
	184-02053 (100 mg)		
	182-02054 (500 mg)		
Lysozyme, Human, recombinant expressed in plants	185-02061 (10 mg)		Ship and keep at -20 °C
	181-02063 (100 mg)		
	189-02064 (500 mg)		
Trypsin, Bovine, recombinant expressed in corn	208-15931 (5 mg)	for Cellbiology	
	204-15933 (50 mg)		
Albumin, Human, recombinant expressed in plants Coming Soon!	018-21541 (1 g)	for Cell Culture	
	014-21543 (5 g)		
	016-21542 (25 g)		

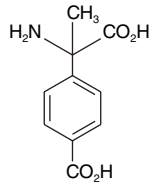
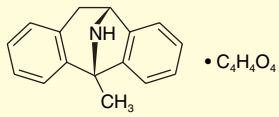
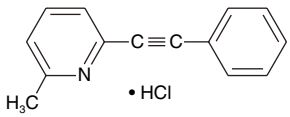
Glutamate Receptor Substances

Ionotopic Receptors	
NMDA Selective	
NMDA Site >>	DL-2-Amino-5-phosphonovaleric Acid, Dextromethorphan Hydrobromide Monohydrate, D-Glutamic Acid, L-Glutamic Acid, DL-Glutamic Acid Monohydrate, (±)-Ibotenic Acid, *N*-Methyl-D-aspartic Acid
Glycine Site >>	D-Cycloserine, Glycine, D-Serine
Polyamine Site >>	Ifenprodil Tartrate, Spermidine, Spermine
Ion Channel >>	(+)-MK 801 Maleate
AMPA / Kainate Selective	
AMPA Selective >>	AMPA, Joro Spider Toxin, Quisqualic Acid
Kainate Selective >>	Kainic Acid *n*-Hydrate
AMPA / Kainate Selective >>	CNQX disodium Salt , DNQX, NBQX
Metabotropic Receptors	
	DL-*α*-(3,5-Dihydroxyphenyl)glycine, (±)-Ibotenic Acid, (±)-*α*-Methyl-4-carboxyphenylglycine, 2-Methyl-6-(phenylethynyl)pyridine Hydrochloride

Alphabetically by product name

	Description	Wako Cat. No.	Note	Grade
AMPA Selective AMPA receptor agonist	**(±)-α-Amino-3-hydroxy-5-methyl-4-isoxazole propionic Acid** [AMPA] CAS No. 74341-63-2, $C_7H_{10}N_2O_4$=186.17	012-18491 (5mg)	2~10 ˚C	for Biochemistry
NMDA Selective NMDA receptor antagonist	**DL-2-Amino-5-phosphonovaleric Acid** [DL-AP5] CAS No. 76326-31-3, $C_5H_{12}NO_5P$=197.13	018-18471 (10mg)	RT*	for Biochemistry
AMPA/Kainate Selective AMPA/Kainate receptor antagonist	**CNQX Disodium Salt *n*-Hydrate**, 98.0+% (HPLC) $C_9H_2N_4Na_2O_4$	**034-20381 (10mg)**	2~10 ˚C	for Cellbiology
NMDA Selective Glycine site agonist	**D-Cycloserine** CAS No. 68-41-7, $C_3H_6N_2O_2$=102.09	032-12631 (1g) 038-12633 (5g)	-20 ˚C	for Biochemistry
NMDA Selective NMDA receptor antagonist	**Dextromethorphan Hydrobromide Monohydrate**, 98.0+% (Titration) CAS No. 6700-34-1, $C_{18}H_{25}NO \cdot HBr \cdot H_2O$=370.33	041-21551 (5g) 049-21552 (25g)	below 25 ˚C	for Biochemistry
Metabotropic receptor group1(mGlu1, mGlu5) agonist	**DL-α-(3,5-Dihydroxyphenyl)glycine** [DL-3,5-DHPG] CAS No. 146255-66-5, $C_8H_9NO_4$=183.16	043-24671 (100mg)	Keep at 2~10 ˚C Ship at RT	for Biochemistry
AMPA/Kainate Selective AMPA/Kainate receptor antagonist	**DNQX** [6,7-Dinitroquinoxaline-2,3-dione], 95.0+% (TLC) CAS No. 2379-57-9, $C_8H_4N_4O_6$=252.14	040-26303 (10mg) 044-26301 (50mg)	-20 ˚C	for Biochemistry
NMDA Selective NMDA receptor agonist	**D-Glutamic Acid**, 99.0+% (Titration) CAS No. 6893-26-1, $C_5H_9NO_4$=147.13	075-00493 (1g) 077-00492 (25g)	RT	Wako Special Grade
	L-Glutamic Acid, 99.0+% (Titration) CAS No. 56-86-0, $C_5H_9NO_4$=147.13	070-00502 (25g) 072-00501 (100g) 074-00505 (500g)	RT	JIS Special Grade
	DL-Glutamic Acid Monohydrate, 97.0+% (Titration) CAS No. 19285-83-7, $C_6H_9NO_4 \cdot H_2O$=165.15	074-02102 (25g)	RT	Wako Special Grade
NMDA Selective Glycine site agonist	**Glycine**, 99.0+% (Titration) CAS No. 56-40-6, H_2NCH_2COOH=75.07	073-00732 (25g) 075-00731 (100g) 077-00735 (500g)	RT	JIS Special Grade
NMDA agonist *Metabotropic Receptor* Non-selective mGlu agonist	**(±)-Ibotenic Acid** CAS No. 2552-55-8, $C_5H_6N_2O_4$=158.11	098-04721 (5mg)	RT	for Biochemistry
NMDA Selective Polyamine Site	**Ifenprodil Tartrate**, 98.5+% (Titration) CAS No. 23210-58-4, $(C_{21}H_{27}NO_2)_2 \cdot C_4H_6O_6$=800.98	099-03911 (100mg)	RT	for Biochemistry
AMPA Selective AMPA receptor antagonist	**Joro Spider Toxin [JSTX-3]** CAS No. 112163-33-4, $C_{27}H_{47}N_7O_6$=565.71	104-00051 (0.1mg)	2~10 ˚C	for Biochemistry
Kainate Selective Kainate receptor agonist	**Kainic Acid *n*-Hydrate**, 98.0+% (HPLC) $C_{10}H_{15}NO_4 \cdot nH_2O$=213.23  It is an amino acid with glutamate skeleton isolated from one of red algae, Digenea (Corsican weed, *Digenea simplex*) known as an ascaricide. This product is one of selective agonist for kainate-type glutamate receptor and has a potent CNS stimulating effect. It is used for studies on the signal transduction system via kainate cascade, neuronal apoptosis, ALS (amyotrophic lateral sclerosis), and pathological mechanism of Alzheimer disease. Appearance of solution: Clear	**118-00751 (10mg)**	2~10 ˚C	for Biochemistry

Glutamate Receptor Substances ~continued~

	Description	Wako Cat. No.	Note	Grade
Metabotropic Receptor group1(mGlu1, mGlu5), group2(mGlu2, mGlu3) antagonist	**(±)-MCPG** [(±)-α-Methyl-4-carboxyphenylglycine] 99.0+% (HPLC) CAS No. 146669-29-6; $C_{10}H_{11}NO_4$=209.20 	137-15571 (10mg) 133-15573 (50mg)	2~10 ˚C	for Cellbiology
NMDA Selective ion channel Non-competitive NMDA receptor antagonist	**(+)-MK 801 Maleate** [Dizocilpine Maleate], 98.0+% (HPLC) CAS No. 77086-22-7; $C_{16}H_{15}N.C_4H_4O_4$=337.37 Acts by binding to a site located within the NMDA associated ion channel  It is a noncompetitive antagonist showing selectivity for NMDA-type glutamate receptor. It binds to the pore of the ion channel, which is opened by the binding of ligands, and acts as an open-channel blocker	134-15461 (10mg) 130-15463 (50mg)	2~10 ˚C	for Cellbiology
Metabotropic Receptor Metabotropic receptor $mGlu_5$ Non-competitive antagonist at mGlu5 receptor subtype	**MPEP Hydrochloride**, 98.0+% (HPLC) [2-Methyl-6-(phenylethynyl)pyridine Hydrochloride], $C_{14}H_{11}N.HCl$=229.70  It is a potent noncompetitive antagonist showing selectivity for metabotropic glutamate receptor 5 (mGluR5).	131-15471 (10mg)	2~10 ˚C	for Cellbiology
AMPA/Kainate Selective AMPA/Kainate receptor antagonist	**NBQX** [6-Nitro-7-sulfamoylbenzo[f]quinoxaline-2,3-dione], 99+% (TLC) CAS No. 118876-58-7, $C_{12}H_8N_4O_6S$=336.28	148-06751 (10mg)	2~10 ˚C	for Biochemistry
NMDA Selective NMDA receptor agonist	**N-Methyl-D-aspartic Acid** [NMDA] CAS No. 6384-92-5, $C_5H_9NO_4$=147.13	132-13681 (50mg)	RT	for Biochemistry
NMDA Selective Glycine site agonist	**D-Serine**, 99.0+% (Titration) CAS No. 312-84-5, $HOCH_2CH(NH_2)COOH$	191-08821 (1g) 197-08823 (5g) 199-08822 (25g)	RT	Wako Special Grade
AMPA Selective *Metabotropic Receptor* Group1 (mGlu1, mGlu5) agonist	**Quisqualic Acid** CAS No. 52809-07-1, $C_5H_7N_3O_5$=189.13	174-00531 (5mg)	2~10 ˚C	for Biochemistry
NMDA Selective Polyamine site agonist	**Spermidine**, 95.0+% (Titration) CAS No. 124-20-9, $H_2N(CH_2)_4NH(CH_2)_3NH_2$=145.25	195-09821 (1g) 191-09823 (5g)	2~10 ˚C	for Biochemistry
NMDA Selective Polyamine site	**Spermine**, 95.0+% (Titration) CAS No. 71-44-3, $C_{10}H_{26}N_4$=202.34 Acts as an agonist during depolarization and as an antagonist during hyperpolarization.	198-09811 (250mg) 194-09813 (1g)	2~10 ˚C	for Biochemistry

* RT: room temperature

LabAssay™ is an ELISA kit for simultaneous measurement of multi animal-samples using a microplate as well as measurement using test tubes.

Research Use Only

#	Category	Detection	Product Name	Wako Catalog No.	Pkg. Size	Grade
1	Lipid	Triglyceride	LabAssay™ Triglyceride	290-63701	1,000 tests	for Cellbiology
2	Enzyme	ALP	LabAssay™ ALP	291-58601	900 tests	
3	Protein & nonprotein nitrogen compounds	A/G	LabAssay™ A/G	292-63901	1,000 tests	
		Creatinin	LabAssay™ Creatinin *	290-65901	500 tests	
		Uric Acid	LabAssay™ Uric Acid	292-64001	1,300 tests	
4	Sugar	Glucose	LabAssay™ Glucose	298-65701	1,000 tests	

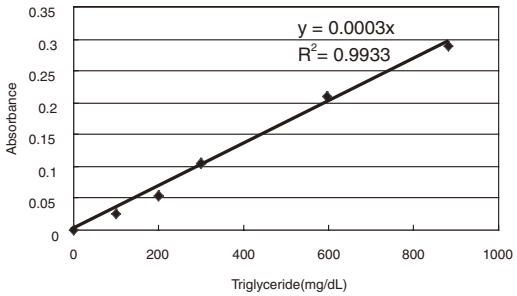
*: Not available for sale in Europe.

1. Lipid

LabAssay™ Triglyceride (GPO • DAOS method)

Lipids in serum consist of triglycerides, cholesterols, phospholipids, free fatty acids and slight amounts of fat-soluble components such as fatsoluble vitamins and carotenes. Triglycerides, as major components of very low density lipoprotein (VLDL) and chylomicrons, play an important role in metabolism as energy sources and transporters of dietary fat.
This kit is based on an enzymatic method using N-ethyl-N- (2-hydroxy-3-sulfopropyl)-3,5-dimethoxyaniline sodium salt (DAOS) as a blue pigment.

[Standard Curve]



[Performance]
(1) Sensitivity (Absorbance):
Purified water: max. 0.10 / 300mg/dL triglyceride sample: 0.09 ~ 0.25
(2) Specificity (Triglyceride Concentration):
A known concentration of control serum: within ±12%

[Reference] 1) Spayd, R. W., Bruschi, B., *et al.: Clin. Chem.*, 24, 1343 (1978).

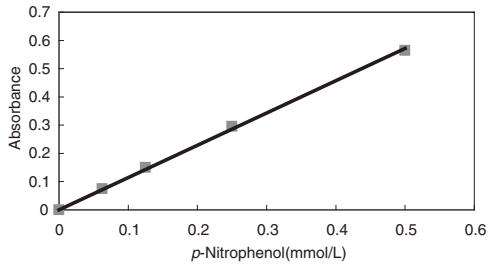
Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ Triglyceride (GPO • DAOS method)	290-63701 (1,000 tests)	for Cellbiology	Keep and ship at 2~10 °C
[Kit Contents] 1. Buffer: 3 vials × for 105 mL 2. Chromogen Substrate: 3 vials × for 105 mL 3. Standard Solution: 1 vial × 10 mL			

2. Enzymes

LabAssay™ ALP (Alkaline Phosphatase activity assay with *p*-Nitrophenylphosphate as a substrate)

Alkaline Phosphatase (ALP) is distributed in a variety of tissues such as liver, bone, and small intestine in animals. The change of the enzyme activity in tissues is an important hallmark for physiological phenomena as osteogenesis and so on.
This kit is for Alkaline Phosphatase assay in a simultaneous multi-sample assay format with a microplate using p-Nitrophenylphosphate as a substrate.

[Standard Curve]



[Performance]
<**Dynamic Assay Range**> above 0.06 mmol/L
<**Standard Assay Range**> 0 ~ 0.5 mmol/L, <**Reproducibility**> C.V. below 10 %

[Reference] 1) Yamamoto, M., Takahashi, Y., Tabata, Y. : Biomaterials.24 (24), 4375 (2003).

Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ ALP	291-58601 (900 tests)	for Cellbiology	Keep and ship at 2~10 °C
[Kit Contents] 1. Substrate Tablet (*p*-Nitrophenylphosphate Disodium 6.7 mmol/L, after dissolving): 20 tablets 2. Buffer Solution (2.0 mmol/L $MgCl_2$, 0.1 mol/L Carbonate Buffer, pH 9.8): 1 vial × 100 mL 3. Stop Solution (0.2 mol/L Sodium Hydroxide Solution): 1 vial × 100 mL 4. Standard Solution (0.5 mmol/L *p*-Nitrophenol Solution): 1 vial × 10 mL			

3. Protein & nonprotein nitrogen compounds

LabAssay™ A/G (BCG method, Biuret method)

Blood serum contains two major protein groups: albumin and globulin. The ratio of albumin to globulin (A/G ratio) is calculated from values obtained by direct measurement of total protein and albumin. It represents the relative amounts of albumin and globulins.
This kit is able to measure total protein in mouse and human serum by the Biuret method and albumin by the BCG (Bromocresol green) method, and furthermore to calculate A/G ratio.

[Performance]

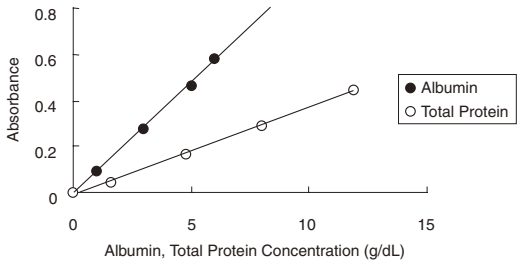
Alubumin

(1) Sensitivity (Absorbance):
Purified water: 0.120 ~ 0.220 / Std Serum (5.0 g/dL Alb): 0.480 ~ 0.810
(2) Specificity (albumin concentration):
a known concentration of control serum: within ±12%

Total Protein

(1) Sensitivity (Absorbance):
Purified water: 0.050 ~ 0.100 / Std Serum (8.0g/dL Total protein): 0.300 ~ 0.500
(2) Specificity (protein concentration)
a known concentration of control serum: within ±10%

[Standard Curve]



[References]

1) Doumas, B. T., Watson, W. A. and Biggs, H. G. : *Clin. Chem. Acta*., **31**, 87 (1971).
2) Gornall, A. G., Bardawill, C. J. and David, M. M. : *J. Biol. Chem*., **177**, 751 (1949).

Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ A/G (BCG method, Biuret method)	292-63901 (1,000 tests)	for Cellbiology	Keep and ship at 2~10 °C
[Kit Contents] 1. Albumin Chromogen Reagent: 1 vial × 250 mL 2. Total Protein Chromogen Reagent: 1 vial × 250 mL 3. Standard Serum (from Bovine Serum): 1 vial × for 3 mL 4. Albumin Adjustment Buffer: 1 vial × 25 mL			

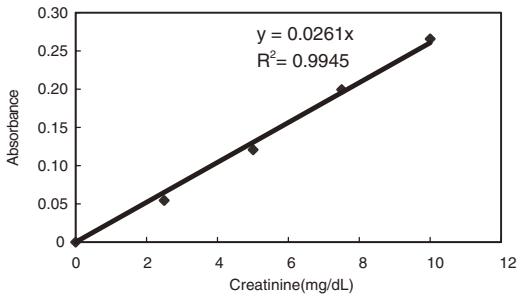
LabAssay™ Creatinine (Jaffé method)

Creatinine is a breakdown product of creatine phosphate in muscle. It is mainly fi ltered by the kidneys, though a small amount is actively secreted. LabAssay™ Creatinine is based on an in vitro colorimetric Jaffé method for the quantitative determination of creatinine in mouse serum or urine.

[Performance]

(1) Sensitivity in a test tube (Absorbance):
Purified water: 0.010 ~ 0.020 / 10mg/dL creatinine: 0.400 ~ 0.500
(2) Specificity (Creatinine Concentration):
A known concentration of control serum: within ±10%

[Standard Curve]



[References]

1) Bonsnes, R. W. and Taussky, H. H.: *J. Biol. Chem*., **158**, 581(1945).
2) Henry, R. J.: Clinical Chemistry, 287 (Harper & Row), New York (1966).

Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ Creatinine (Jeffé method)	290-65901 (500 tests)	for Cellbiology	Keep and ship at 2~10 °C in a dark place
[Kit Contents] 1. Deproteinizing Ragemt: 1 vial × 150 mL (Sodium Tungstate, Phosphoric Acid) 2. Picric Acid Reagent: 1 vial × 50 mL 3. 0.75 mol/L Sodium Hydroxide Solution: 1 vial × 50 mL 4. Standard Solution (Creatinine: 10 mg/dL): 1 vial × 15 mL			

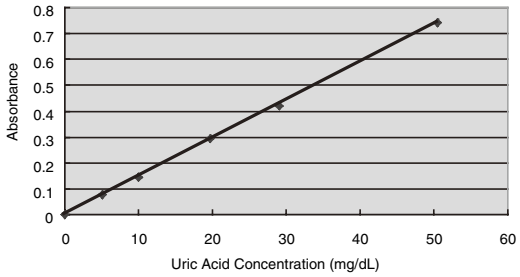
Not available for sale in Europe.

3. Protein & nonprotein nitrogen compounds ~continued~

LabAssay™ Uric Acid (Uricase • TOOS method)

Uric acid is the relatively water-insoluble end product of purine nucleotide metabolism.
This kit is able to measure uric acid in mouse and human serum by an enzyme reaction using N-Ethyl- N- (2-hydroxy-3-sulfopropyl) -3-methylaniline sodium salt (TOOS).

[Standard Curve]



[Performance]

(1) Sensitivity (Absorbance)
Purified water: max. 0.15 / 10 mg/dL Uric Acid: 0.04 ~ 0.26
(2) Specificity (uric acid concentration):
a known concentration of control serum: within ±15%

[Reference]

1) Kabasakalian, P., Kalliney, S. and Westcott, A.: *Clin. Chem.*, **19**, 522-524 (1973).

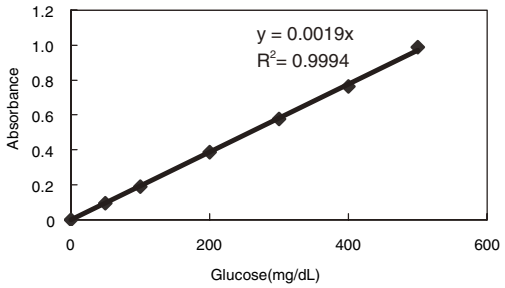
Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ Uric Acid (Uricase • TOOS method)	292-64001 (1,300 tests)	for Cellbiology	Keep and ship at 2~10 °C
[Kit Contents] 1. Chromogen: 4 vials × for 100 mL 1. Buffer: 4 vials × 100 mL 1. Standard Solution (Uric acid 10 mg.dL): 1 vial × 10 mL			

4. Sugar

LabAssay™ Glucose (Mutarotase-GOD method)

When a sample is mixed with the Choromogen Reagent, the α-form of glucose in the sample is converted to β-form by mutarotase. β-DGlucose is oxidized and yields hydrogen peroxide by glucose oxidase (GOD). In the presence of peroxidase (POD), the formed hydrogen peroxide yields a red pigment by quantitative oxidation condensation with phenol and 4-aminoantipyrine. The glucose concentration is obtained by measuring absorbance of the red pigment.

[Standard Curve]



[Performance]

(1) Sensitivity (Absorbance):
Purified water: max. 0.03 / 200mg/dL glucose sample: 0.40 ~ 0.55
(2) Specificity (Glucose Concentration):
A known concentration of control serum or urine: within ±12%

[Reference]

1) Miwa, I., Okuda, J., Maeda, K. and Okuda, G.: *Clin. Chim. Acta.*, **37**, 538 (1972).

Description	Wako Cat. No. (Pkg. Size)	Grade	Note
LabAssay™ Glucose (Mutarotase-GOD method)	298-65701 (1,000 tests)	for Cellbiology	Keep and ship at 2~10 °C in a dark place
[Kit Contents] 1. Buffer: 2 vials × 150 mL 2. Chromogen Reagent: 2 vials × for 150 mL 3. Glucose Standard I (200 mg/dL Glucose): 1 vial × 10 mL 4. Glucose Standard II (500 mg/dL Glucose): 1 vial × 10 mL			

Description	Wako Cat. No. (Pkg. Size)	

1. DNA Methylation

(1) DNA Methylation Inhibitors

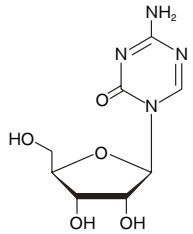
Methylation of DNA contributes to the epigenetic regulation of gene expression. Methylated DNAs are formed by addition of methyl group to the carbon atom at 5-position of C (cytosine) bases in DNA by DNA methyltransferase (DNMT).
Two kinds of DNA methylation by DNMT are observed; one is called maintenance DNA methylation by DNMT1 (methylation is maintained after DNA replication), and the other is *de novo* DNA methylation by DNMT3a and DNMT3b (new methylation occurs in unmethylated DNA). Since the amount of methylated DNA changes depending on the types of cancer and germ cells or cell cycle, gene expression can be analyzed in detail by effective inhibition of DNA methylation.

5-Azacytidine, 98.0+% (HPLC)
$C_8H_{12}N_4O_5$ = 244.20, CAS No. 320-67-2
for Biochemistry, Keep and ship at -20 °C

This product is one of the DNA methylation inhibitors that induce demethylation of genomic DNA in a concentration-dependent way [1]. It is used for researches on methylation of the promoter site in prostatic cancer cells [2].

016-16711 (50 mg)
012-16713 (250 mg)
010-16714 (1 g)

[References]
1) Stresemann, C., *et al.*: *Cancer Res.*, **66**, 2794 (2006).
2) Leiblich, A., *et al.*: *Oncogene.*, **25**, 2953 (2006).
3) Bowers R.R., *et al.*: *PNAS.*, **103**, 13022 (2006).
4) Cheng C., *et al.*: *Mol. Genet. Genomics*, **276**, 378 (2006).

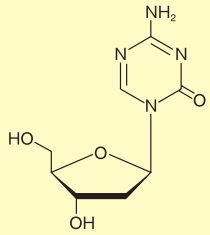


5-Aza-2'-deoxycytidine, 97.0+% (HPLC)
$C_8H_{12}N_4O_4$ = 228.21, CAS No. 2353-33-5
for Genetic Research, Keep and ship at -20°C

This product is one of the cytidine analog DNA methylation inhibitors that induce demethylation of genomic DNA in a concentration-dependent way [1]. It is used for researches on methylation of the promoter site in lung cancer cells [2].

018-20941 (10 mg)
014-20943 (50 mg)

[References]
1) Stresemann, C., *et al.*: *Cancer Res.*, **66**, 2794 (2006).
2) Vuillemenot, B.R., *et al.*:*Mol. Cancer. Res.*, **4**, 267 (2006)
3) Kim T.Y., *et al.*: *Cancer Res.*, **66**, 7490 (2006).
4) Fulda S., *et al.*: *Oncogene*, **25**, 5125 (2006).

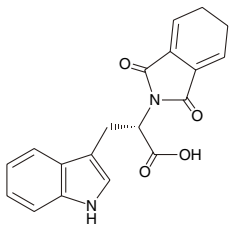


DNA Methyltransferase Inhibitor, 97.0+% (HPLC)
$C_{19}H_{14}N_2O_4$ = 334.33
for Genetic Research, Keep and Ship at -20°C

This product inactivates DNA methyltransferase activity by binding to its active center unlike 5-azacytidine or 5-aza-2'-deoxycytidine.

041-30101 (10 mg)
047-30103 (25 mg)

[References]
1) Stresemann, C., *et al.*: *Cancer Res.*, **65**, 6305 (2005).



(-)-Epigallocatechin Gallate, 90.0+% (HPLC)
for Biochemistry, Keep at 2~10°C and ship at RT
$C_{22}H_{18}O_{11}$ = 458.37, CAS No. 989-51-5

059-05411 (100 mg)

Polyphenol:
Catechin from green tea extracts
Solubility:
Soluble in methanol (10 g/L methanol soln.)

Procaine Hydrochoride, 99.0+% (Titration)
for Biochemistry, Keep and ship at RT
$C_{13}H_{20}N_2O_2 \cdot HCl$ = 272.77, CAS No. 51-05-8

167-15111 (50 g)

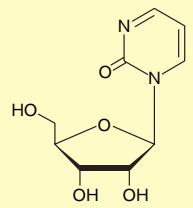
Solubility:
Freely soluble in water, soluble in ethanol and sparklingly soluble in chloroform

Zebularine, 97.0+% (HPLC)
$C_9H_{12}N_2O_5$ = 228.20
for Genetic Research, Keep and ship and 4°C

This product is one of the cytidine analog DNA methylation inhibitors that induce demethylation of genomic DNA in a concentration-dependent way [1]. It is known to be highly stable in solution and to have low toxicity [2].

267-01891 (5 mg)
263-01893 (25 mg)

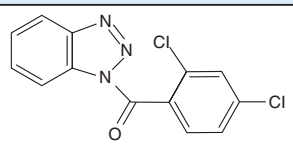
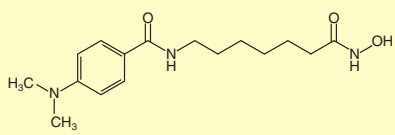
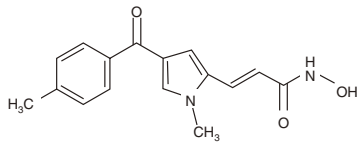
[References]
1) Stresemann, C., *et al.*: *Cancer Res.*, **66**, 2794 (2006).
2) Cheng, J.C., *et al.*: *J. Natl. Cancer Inst.*, **95**, 399 (2003).
3) Dote H., *et al.*: *Clin. Cancer Res.*, **11**, 4571 (2005).
4) Hodge D.R., *et al.*:. *Cancer Res.*, **65**, 4673 (2005).

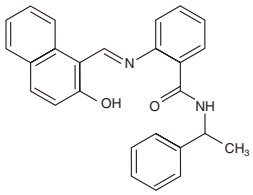
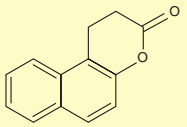
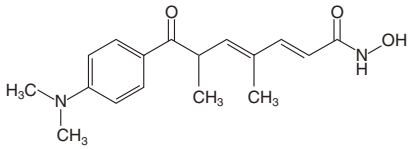
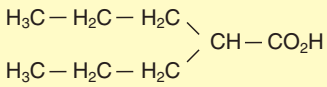
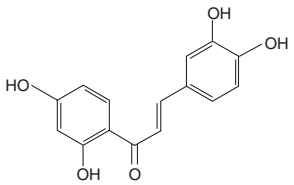
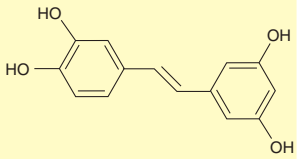
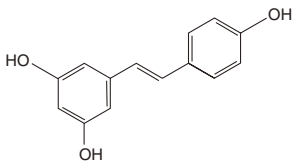


(2) Detection of Cell Proliferation

5-Bromo-2'-deoxyuridine, [5-BrdU], 98.0+% (HPLC)
for Biochemistry, Keep and ship at -20°C
$C_9H_{11}BrN_2O_5$ = 307.10, CAS No. 59-14-3

027-15561 (1 g)
023-15563 (5 g)

Description	Wako Cat. No. (Pkg. Size)	
1. DNA Methylation ~continued~		
(3) Modified Nucleotides Modified nucleotide triphosphates for epigenetics research, which are applicalbe to PCR, are available.		
2'-Deoxyinosine 5'-Triphophate Solution [dITP Solution], 98+% for Molecular Biology, Keep and ship at -20°C CAS No. 95648-77-4	048-29861 (25 μmol (100 mM))	**pH:** approximately 7
5-Hydroxymethyl-2'-deoxycytidine 5'-Triphosphate Soln. [HMdCTP Solution], 98+% for Genetic Research, Keep and ship at -20°C	083-08371 (25 μmol (100 mM))	**pH:** approximately 7
5-Methyl-2'-deoxycytidine 5'-Triphosphate Soln. [dm5CTP Solution], 95+% (HPLC) for Genetic Research, Keep and ship at -20°C CAS No. 838-07-3	049-29891 (1 μmol (10 mM))	
***N*^{4}-Methyl-2'-deoxycytidine 5'-Triphosphate Solution** [dm4CTP Solution], 95+% (HPLC) for Genetic Research, Keep and ship at -20°C	042-29881 (1 μmol (10 mM))	
***N*^{6}-Methyl-2'-deoxyadenosine 5'-Triphophate Solution,** 95.0+% (HPLC) [dm6ATP Solution] for Genetic Research, Keep and ship at -20°C	045-29871 (1 μmol (10 mM))	
(4) Others		
Anti 5-Methylcytosine, Monoclonal Antibody for Immunochemistry, Keep and ship at -20°C	015-19721 (100 μL)	**Mouse ascites filtrate, Subclass:** IgM, Specific to methylcytosine, and reactive with cytosine and thymidine at less than 1%. Working dilution: Westernblot (1:1,000~1:10,000); Immunofluorescence (1:100)
***Micrococcal* Nuclease,** lyophilized for Genetic Research, Keep and ship at 2~10°C CAS No. 9013-53-0, EC No. 3.1.31.1, MW: 168,000	137-14731 (abt.15,000 units/vial)	**Application:** Nuclesome modeling experimentation
2. Cell Cycle and Transcription		
(1) Histone Deacetylase (HDAC) Inhibitors HDAC plays a central role in chromatin structure formation associated with the nuclear distribution of DNA. HDAC inhibitors show connections with cell division cycles and differentiation, as well as with antitumor activity and apoptosis-inducing activity through the inhibition of the deacetylating activity of HDAC.		
ITSA1 [*N*-(1*H*-Benzotriazol-1-yl)-2,4-dichlorobenzamide] for Cellbiology, Keep and ship at 2~10°C $C_{13}H_7Cl_2N_3O$ = 292.12 Inhibitor of Trichostatin A	093-05251 (5 mg)	
M 344 [4-Dimethylamino-*N*-(6-hydroxycarbamoyl-hexyl)-benzamide] for Cellbiology, Keep and ship at -20°C $C_{16}H_{25}N_3O_3$ = 307.39, CAS No. 251456-60-7 Inhibitor of HDAC Class I and II. Structural homologue of Trichostatin A.	139-14671 (1 mg)	
MC 1293 [3-(4-Toluoyl-1-methyl-1*H*-2-pyrrolyl)-*N*-hydroxy-2-propenamide] for Cellbiology, Keep and ship at -20°C $C_{16}H_{16}N_2O_3$ = 284.31 Inhibitor of HDAC1 and maize deacetylase.	136-14681 (5 mg)	

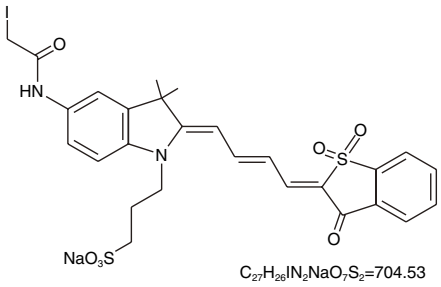
Description	Wako Cat. No. (Pkg. Size)	
2. Cell Cycle and Transcription ~continued~		
(1) Histone Deacetylase (HDAC) Inhibitors ~continued~		
Sirtinol [2-[(2-Hydroxynaphthalen-1-ylmethylene)amino]-*N*-(1-phenethyl)benzamide] for Cellbiology, Keep and ship at -20°C $C_{26}H_{22}N_2O_2$ = 394.47 HDAC Class III Inhibitor. Cell-permeable	197-13671 (5 mg)	
Splitomicin [1,2-Dihydro-3*H*-naphtho[2,1-*b*]-pyran-3-one for Cellbiology, Keep and ship at 2~10°C $C_{13}H_{10}O_2$ = 198.22, CAS No. 5690-03-9 HDAC Class III Inhibitor. Cell-permeable	190-13661 (1 mg)	
Trichostatin A for Biochemistry, Keep and ship at -20°C $C_{17}H_{22}N_2O_3$ = 302.37, CAS No. 58880-19-6 Potent & reversible Inhibitor of HDAC Class I & II	200-11993 (1 mg) 204-11991 (5 mg)	
Valproic Acid for Biochemistry, Keep and ship at RT $C_8H_{16}O_2$ = 144.21, CAS No. 99-66-1 Inhibitr of HDAC1	227-01071 (5 g) 225-01072 (25 g)	
(2) SIRT1 (classified into HDAC Class III) Activators		
Butein [2',4',3,4-Tetrahydroxychalcone], 98.0+% (HPLC) for Biochemistry, Keep and ship at -20°C $C_{15}H_{12}O_5$ = 272.25, CAS No. 487-52-5 a SIRT1 Activator as well as a protein tyrosine kinase inhibitor	027-14461 (10 mg)	**Solubility:** Freely soluble in ethanol, soluble in methanol and dimethylsulfoxide. Insoluble in hot water. **Powder density**: 6 mL/g 
Piceatannol [3,4,3',5'-Tetrahydroxy-*trans*-stibene] for Cellbiology, Keep and ship at 2~10°C $C_{14}H_{12}O_4$ = 244.24, CAS No. 10083-24-6 a SIRT1 Activator as well as a protein tyrosine kinase *syk* selective inhibitor	169-21661 (10 mg)	
Resveratrol [trans-3,4',5-Trihydroxystibene], 98.0+% (HPLC) for Biochemistry, Keep and ship at -20°C $C_{14}H_{12}O_3$ = 228.24 SIRT1 Activator as well as COX-1 inhibitor	185-01721 (100 mg) 181-01723 (500 mg)	**Solubility:** Soluble in ethanol and acetone. Insoluble in water. 

[Reference] Howitz, K.T., *et al.*: *Nature*, 425, 191 (2003).

Solvent-sensitive Fluorescent Probe

I-SO-IAA

I-SO-IAA is an environmentally-sensitive fluorophore to proteins, which has merocyanine skeleton and iodoacetamide. The fluorescence quantum yield is sharply dependent on solvent polarity or viscosity, enabling them to report changes of fluorescence intensity in their protein environment. Additionally, it can be excited with visible light, unlike other probes.



$C_{27}H_{26}IN_2NaO_7S_2$=704.53

[Labeling Procedure]

1. Preparing Protein Solution
   Dissolve Protein at 50~100 μmol/L in a suitable buffer such as 10~100mM phosphate, Trisand HEPES at pH 7.0~7.5 and room temperature. Reduce disulfide bonds of the protein with a 10-fold molar excess of DTT.
2. Preparing I-SO-IAA Solution
   Dilute I-SO-IAA with DMSO to a final concentration of 10mmol/L (=Stock Solution). Protect it from light as much as possible.
3. Labeling the Protein with I-SO-IAA
   Add approximately 2~10 moles of I-SO-IAA for each mole of protein. React for 1 hour at room temperature or overnight at 4°C.

[Reference]

1. Toutchkine, A., Kraynov, N. and Hahn, K.: "Solvent-sensitive dyes to report protein conformational changes in living ells", *J. Am. Chem.* Soc., **125**, 4132 (2003)

Description	Wako Cat. No. (Pkg. Size)	Grade	Storage
I-SO-IAA	093-05371 (5 mg)	for Cellbiology	Ship and keep at -20°C in a dark place
1H-Indole-1-propanesulfonic acid, 2-[(2E,4Z)-4-(1,1-dioxide-3-oxobenzo[b]thien-2(3H)-ylidene)-2-butenylidene]-2,3-dihydro-5-[(iodoacetyl) amino]-3,3-dimethyl-,monosodium salt, (2Z)-(9C1) $C_{27}H_{26}IN_2NaO_7S_2$ = 704.53 [Fluorescence] λex: 600 nm; λem: around 630 nm			

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