FUJIFILM
Value from Innovation

Wako

Biochemical Test kits

LabAssay™ Series

The LabAssay™ Series is a collection of biochemical assay kits for analyzing samples from humans, mice, and other animals. Since analyses are performed in microtiter plates, many samples can be concurrently evaluated, and only small sample amounts are needed.

※For Research Use Only, Not for Diagnostic Use

Code No.	Measuring factor	Grade	Animal species	Sample	Standard curve range	Sample amount	Measuring time	Package size
295-78901	Ammonia nitrogen	for Cellbilogy	Mouse, Rat, Human	Blood	100～400μg/dL	70μL	approx. 70min	700 tests
291-58601	ALP		Mouse, Human	Serum	0.0625～0.5mmol/L	20μL	approx. 20min	900tests
294-65801	Cholesterol		Mouse, Human	Serum	50～592.2mg/dL	2μL	approx. 10min	1,000tests
290-65901	Creatinine		Mouse, Human	Serum	2.5～10mg/dL	50μL	approx. 40min	500test
298-65701	Glucose		Mouse, Human	Serum	50～500mg/dL	2μL	approx. 10min	1,000tests
294-63601	Free Fatty Acid（NEFA）		Mouse, Human	Serum	0.5～1.97mEq/L ※Oleic acid 1mEq=1mmol	4μL	approx. 20min	750tests
296-63801	Phospholipid		Mouse, Human	Serum	150～596.1mg/dL	2μL	approx. 10min	1,300tests
290-63701	Triglycelide		Mouse, Human	Serum	100～888mg/dL	2μL	approx. 10min	1,000tests

Note; 294-65801 LabAssay™ Cholesterol is not available for sale in the US. 290-65901 LabAssay™ Creatinine is not available for sale in Europe. 294-63601 LabAssay™ NEFA is not available for sale in the US and Europe. 296-63701 LabAssay™ Phospholipid is not available for sale in the US.

LabAssay™Ammonia

Ammonia is mainly produced in the intestine or the kidney. Ammonia produced in the body is converted to urea through a series of reactions known as the urea cycle in the liver and eliminated through urine.

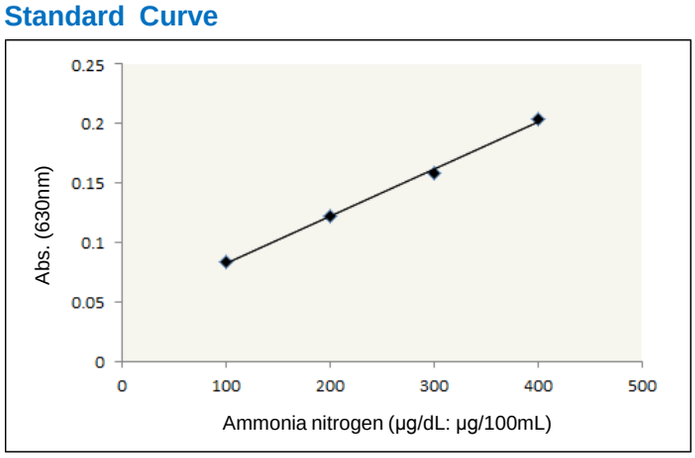
Assay Principle (Modified Fujii-Okuda Method)

Ammonia is converted to Dioxydiphenylamine by the reaction of Phenol and Sodium Pentacyanonitrosyl ferrate(III). A reaction of the Dioxydiphenylamine with Sodium Hypochlorite produces Indophenol ,which pigments blue, under alkaline conditions. LabAssay ™ Ammonia is a kit used for the quantitative determination of ammonia nitrogen in samples by measuring absorbance of the blue color.

Kit Contents

1	Deproteinizing	100mL×1vial
2	Chromogen Reagent A	50mL×1vial
3	Chromogen Reagent B	25mL×1vial
4	Chromogen Reagent C	50mL×1vial
5	Ammonia Standard Solution	15mL×1vial
6	Dilute olution for Standard	20mL×1vial

Standard Curve



Performance

- Standard curve range 100~400μg/dL(μg/100mL)
- Measurement time approx. 70 minutes
- Amount of sample 70μL
- Measurement wavelength 630nm

Code No.	Product name	Grade	Package size	Storage Condition
295-78901	LabAssay™ Ammonia	for Cellbiology	700 tests	Keep at 2-10℃

LabAssay™ALP

Alkaline Phosphatase (ALP) is an enzyme distributed in a variety of tissues such as the liver, bone and small intestines in animals. Especially, it is used one of the Osteogenesis Markers in bone metabolism research area.

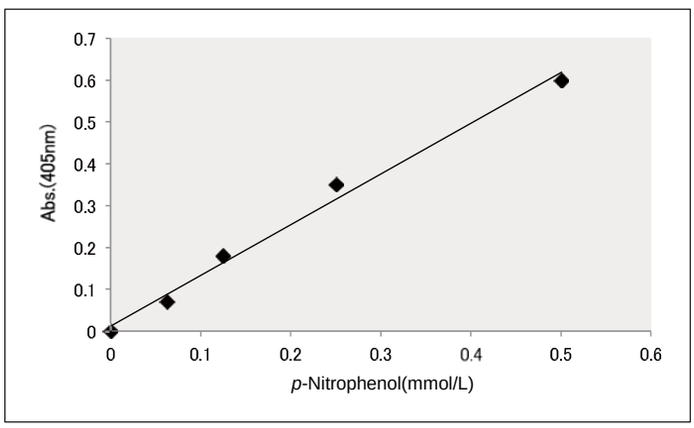
Assay principle (Alkaline Phosphatase activity assay with *p*-Nitrophenyl Phosphate as a substrate)

p-Nitrophenylphosphate is hydrolyzed into *p*-Nitrophenol in the presence of Alkaline Phosphatase(ALP). LabAssay ™ ALP is a kit designed to determine Alkaline Phosphatase activity in samples by measuring the amount of *p*-Nitrophenol released by *p*-Nitrophenylphosphate as a phosphatase substrate.

Kit Contents

1	Substrate Tablet	20 tablets
2	Buffer Solution	100mL×1vial
3	Stop Solution	100mL×1vial
4	Standard Solution	10mL×1vial

Standard Curve



Performance

- Standard curve range 0.0625～0.5mmol/L
- Measurement time approx. 20 minutes
- Amount of sample 20μL
- Measurement wavelength 405nm

[Reference]

1) Ito, S. et al. : *J. Pharmacol. Exp. Ther.*, **333**, 341(2010). ※Extraction liqiud of mouse kidney
2) Matsuyama, A. et al. : *Clin. Exp. Pharmacol. Physiol.*, **45**, 75(2018). ※MC3T3-E1cell, C2C12Ccell
3) Chiba, T. et al. : *J. Atheroscler. Thromb*, **23**, 1099(2016). ※Mouse plasma
4) Kohno, Y. et al. : *Stem Cell Res. Ther.*, **8**, 115(2017). ※Mesenchymal stem cell

Code No.	Product name	Grade	Package size	Storage Condition
291-58601	LabAssay™ ALP	for Cellbiology	900 tests	Keep at 2-10℃

LabAssay™Cholesterol

Cholesterol, a major component of cell membranes and the starting material in steroid synthesis in many animals, is a factor behind arteriosclerosis and other vascular diseases.

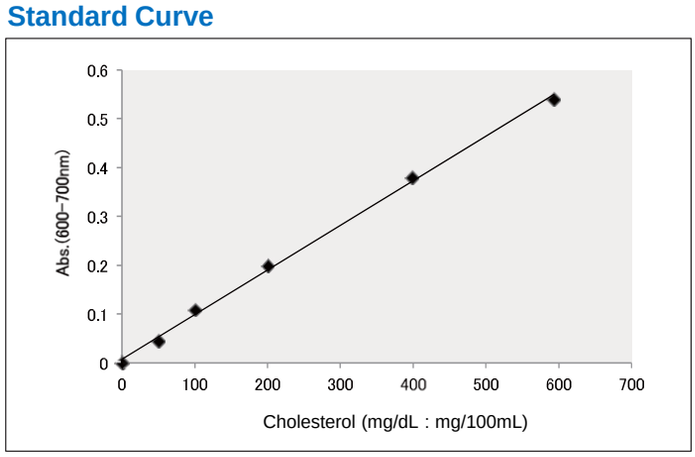
Assay Principle (Cholesterol Oxidase・DAOS method)

Hydrogen peroxide produced by a reaction of cholesterol and cholesterol oxidase let N-Ethyl-N-（2-hydroxy-3-sulfopropyl)-3,5-dimethoxyaniline sodium salt（DAOS）and 4-Aminoantipyrin oxidize and condensate. LabAssay ™ Cholesterol is a kit to determine total cholesterol by measuring absorbance of the blue color which is generated by the oxidative condensation reaction.

Kit Content

1	Buffer	150mL×2vials
2	Chromogen	for 150mL×2vials
3	Standard Solution	10mL×1vial

Standard Curve



Performance

- Standard curve range 50~592.2mg/dL(mg/100mL)
- Measurement time approx. 10 minutes
- Amount of sample 2μL
- Measurement wavelength 600nm(Main), 700nm(Sub)

[Reference]

1) Kobayashi, Y. et al. : J. Pharmacogn. Nat. Prod., online(2015) doi: 10.4172/2472-0992.1000113 ※Extraction liquid of mouse kidney
2) Gao, F. et al. :*Evid. Based Complement. Alternat. Med.*, **2015**, 801291(2015). ※Extraction liquid of rat kidney
3) Yoshioka, H. and Onosaka, S. : *Fundam. Toxicol. Sci.*, **3**, 151(2016). ※Mouse plasma
4) Fujii, N. et al. : *Aging Cell*, **16**, 508(2017). ※Rat plasma

Code No.	Product name	Grade	Package size	Storage Condition
294-65801	LabAssay™ Cholesterol	for Cellbiology	1,000 tests	Keep at 2-10℃

※Not available for sale in the US.

LabAssay™Creatineine

Creatinine is a metabolite which is produced by creatine phosphate directly or dehydration of creatine in muscle and nerve. It is excreted from the body through kidney glomerular filtration.

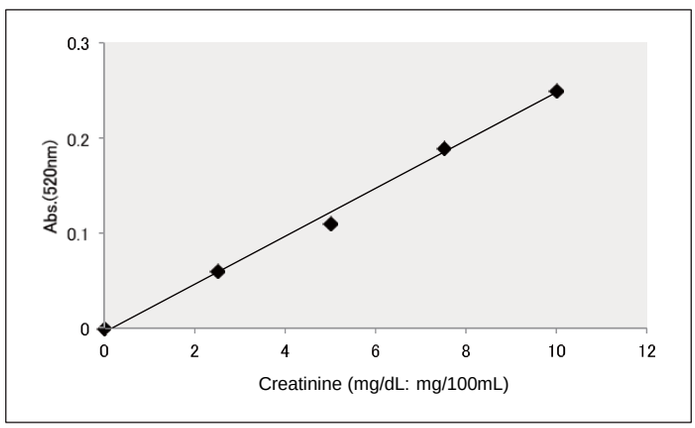
Assay Principle (Jaffé method)

LabAssay ™ Creatinine can be used to measure the creatinin levels in samples by Jaffe's reaction where creatinine produces quantitatively an orange color with picric acid in alkaline condition.

Kit Contents

1	Depoteinizin Reagent	150mL×2vials
2	Picric Acid Reagent	for 150mL×2vials
3	0.75mol/L Sodium Hydroxide Solution	10mL×1vial
4	Standard Solution	10mL×1vial

Standard Curve



Performance

- Standard curve range 2.5~10mg/dL(mg/100mL)
- Measurement time approx. 40 minutes
- Amount of sample 50µL
- Measurement wavelength 520nm

[Reference]

1) Kawamoto, T. et al. : *Glycative Stress Res.*, **3**, 15(2016). ※Human urine
2) Guan, Y. et al. : *J. Pharmacol. Sci.*, **135**, 81(2017). ※Mouse urine、Mouse plasma
3) Ito, K. et al. : *Biol. Pharm. Bull.*, **38**, 1169(2015). ※Rat urine、Rat plasma
4) Tahara, Y. et al. : *Med. Chem. commun.*, **8**, 415(2017). ※Mouse serum

Code No.	Product name	Grade	Package size	Storage Condition
290-65901	LabAssay™ Creatinine	for Cellbiology	500 tests	Keep at 2-10℃

※Not available for sale in Europe.

LabAssay™Glucose

Sugar is one of the most important sources of energy in biology. It is regulated by various factors within an organism. Glucose converges to a stable ratio of α-form and β-form in solutions.

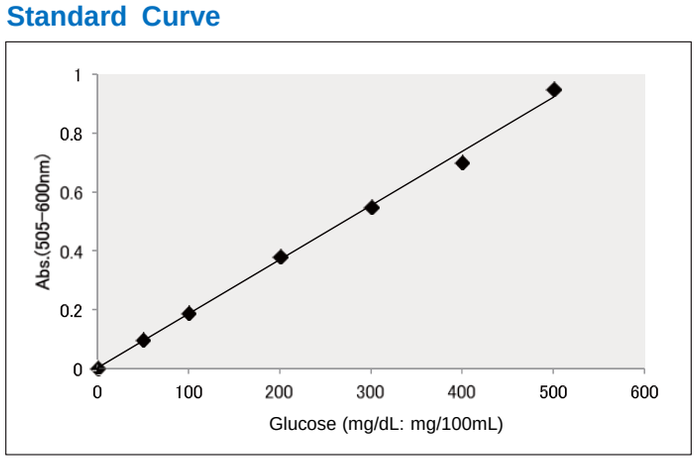
Assay Principle (Mutarotase・GOD method)

α-D-Glucose is converted to β-D-Glucose by mutarotase. Hydrogen peroxide, which is produced by a reaction between β-D-Glucose and glucose oxidase(GOD), promotes oxidative condensation of phenol with 4-aminoantipyrine quantitatively. LabAssay ™ Glucose is a kit used for the quantitative determination of glucose concentrations in samples by measuring absorbance of a red color which is generated by the oxidative condensation reaction.

Kit Contents

1	Buffer	150mL×2vial
2	Chromogen Reagent	for 150mL×2vials
3	Glucose Standard Ⅰ	10mL×1vial
4	Glucose Standard Ⅱ	10mL×1vial

Standard Curve



Performance

- Standard curve range 2.5~10mg/dL(mg/100mL)
- Measurement time approx. 40 minutes
- Amount of sample 50µL
- Measurement wavelength 505nm(Main), 600(Sub)

[Reference]

1) Yamashita, Y. et al.: *Biosci. Biotechnol. Biochem.*, **77**, 888 (2013). ※Mouse plasma
2) Narita, T. et al. : *Exp. Gerontol.*, **104**, 127(2018). ※Rat plasma
3) Yamasaki, M. et al. : *Food Sci. Technol. Res.*, **21,** 827(2015). ※Mouse serum
4) Fan, Y. et al. : *J. Biomed. Sci.*, **23**, 56(2016). ※Mouse serum

Code No.	Product name	Grade	Package size	Storage Condition
298-65701	LabAssay™ Glucose	for Cellbiology	1,000 tests	Keep at 2-10℃

LabAssay™NEFA

NEFA (Non - esterified fatty acid) in the blood is transported complexed with an albumin to peripheral tissues. They are important sources of fuel for the peripheral tissues. The concentration of NEFA in the blood is regulated by a release from the adipose tissues, a consumption in the periphral tissues or a take up from the liver.

Assay Principle (ACS・ACOD method)

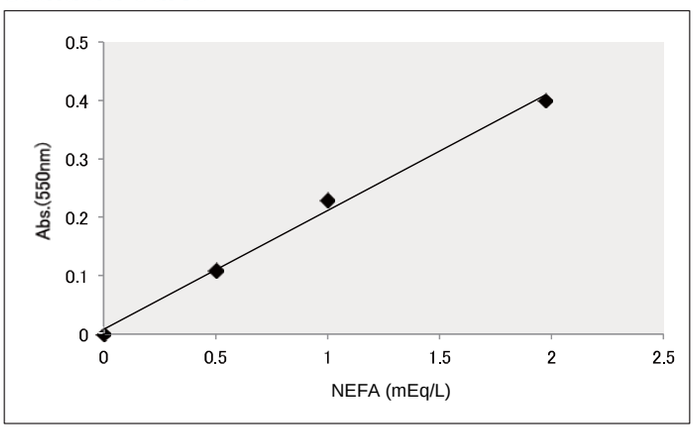
NEFA (Non - esterified fatty acid) forms Acyl-CoA in the presence of Acyl-CoA synthetase(ACS). Hydrogen peroxide, which is produced by a reaction between the Acyl-CoA and Acyl-CoA oxidase(ACOD), promotes oxidative condensation of 3-methyl-N-ethyl-N（-β-hydroxyethyl）-aniline（MEHA） with 4-aminoantipyrine. LabAssay ™ NEFA can be used for the quantitative determination of NEFA in samples by measuring absorbance of a blue purple color which is generated by the oxidative condensation reaction.

Kit Contens

1	Chromogen Reagent A	for 10mL×6vials
2	Solvent A	65mL×1vial
3	Chromogen Reagent B	for 20mL×6vials
4	Solvent B	130mL×1vial
5	NEFA Standard Solution (Oleic acid 1mEq/L)	10mL×1vial

※Oleic acid 1mEq=1mmol

Standard Curve



Performance

- Standard curve range 0.5~1.97mEq/L
- Measurement time approx. 20 minutes
- Amount of sample 4μL
- Measurement wavelength 550nm

[Reference]

1Kobayashi, Y. et al. : *J. Pharmacogn. Nat. Prod.*, online(2015) doi: 10.4172/2472-0992.1000113 ※Extraction liquid of mouse kidney
2) Gao, F. et al. :*Evid. Based Complement. Alternat. Med.*, **2015**, 801291(2015). ※Extraction liquid of rat kidney
3) Ogawa, K. et al. : *Reprod. Med. Biol.*, online(2018). doi.org/10.1002/rmb2.12084 ※Follicular fluid derived from pig vesicular ovarian follicle
4) Wang, F. et al.: *J. Mol. Endocrinol.*, **52**, 133 (2014). ※Mouse plasma

Code No.	Product name	Grade	Package size	Storage Condition
294-63601	LabAssay™ NEFA	for Cellbiology	750 tests	Keep at 2-10℃

※Not available for sale in the US and Europe.

LabAssay™Phospholipid

Phospholipids are known as not only as major component of cell membranes but also perform vital functions within the body such as emulsification and absorption of fats or coagulation of blood.

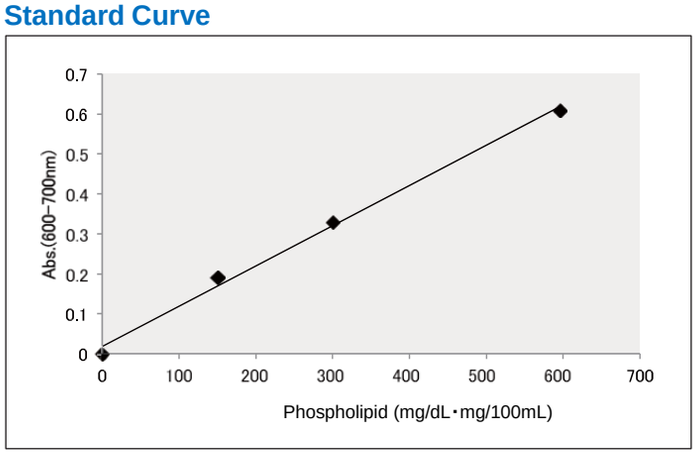
Assay Principle (Choline Oxidase・DAOS method)

Phospholipids are hydrolyzed by Phospholipase D to release hydrogen peroxide. The formed hydrogen peroxide promotes oxidative condensation of N-ethyl-N-（2-hydroxy-3-sulfopropyl）-3,5-dimethoxyaniline sodium salt（DAOS) with 4-aminoantipyrine. LabAssay ™ Phospholipid is a kit to determine Phospholipid concentration in samples by measuring absorbance of a blue color which is generated by the oxidative condensation reaction.

Kit Contens

1	Buffer	50mL×8vials
2	Chromogen Substrate	for 50mL×8vials
3	Standard Solution	10mL×2vials

Standard Curve



Performance

- Standard curve range 150~596.1mg/dL(mg/100mL)
- Measurement time approx. 10 minutes
- Amount of sample 2μL
- Measurement wavelength 600nm(Main), 700nm(Sub)

[Reference]

1) Tatematsu, Y. et al. : *Biol. Pharma. Bull.*, **41**, 319(2018). ※Liposome
2) Kuge, H. et al.: *J. Biol. Chem.*, **289**, 26783 (2014). ※Liposome
3) Kessler, E. C. et al.: *J. Dairy. Sci.*, **97**, 5481 (2014). ※Bovine
4) Xu, Q. et al.: *Biosci. Biotechnol, Biochem.*, **77**, 1390 (2013). ※Extraction liquid of mouse kidney

Code No.	Product name	Grade	Package size	Storage Condition
296-63801	LabAssay™ Phospholipid	for Cellbiology	1,300 tests	Keep at 2-10℃

※Not available for sale in the US.

LabAssay™Tryglyceride

Triglycerides are neutral fats consisting of three fatty acids esterified to a glycerol backbone. There are triglycerides, cholesterol, phospholipids, free fatty acids and fat-soluble vitamins as lipid-soluble substances in the blood.

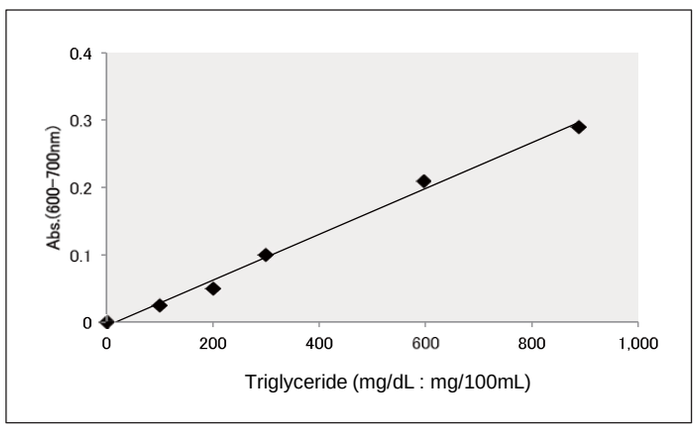
Assay Principle

Triglycerides are converted to glycerol-3-phosphate by lipoprotein lipase and glycerolkinase. Hydrogen peroxide, which is produced by a reaction between the glycerol-3-phosphate and glycerol-3-phosphate oxidase(GPO), promotes oxidative condensation of N-ethyl-N-（2-hydroxy-3-sulfopropyl）-3,5-dimethoxyaniline sodium salt(DAOS) with 4-aminoantipyrine. LabAssay ™ Triglyceride can be used to detect triglycerides concentration in samples by measuring absorbance of a blue color which is generated by the oxidative condensation reaction.

Kit Contents

1	Buffer	105mL×3vials
2	Chromogen Substrate	for 105mL×3vials
3	Standard Solution	10mL×1vial

Standard Curve



Performance

- Standard curve range 100~888mg/dL(mg/100mL)
- Measurement time approx. 10 minutes
- Amount of sample 2μL
- Measurement wavelength 600nm(Main), 700nm(Sub)

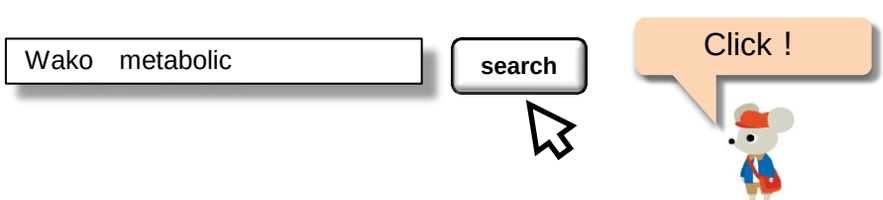
[Reference]

1) Gao, F. et al. :*Evid. Based Complement. Alternat. Med.*, **2015**, 801291(2015). ※Extraction liquid of rat kidney
2) Funakoshi, T. et al. : *Biochem. Biophys. Rep.*, **13**, 39(2018). ※Rat primary muscle satellite cell
3) Moser, V. A. and Pike, C. J. : *eNeuro*, **4**, e0077-17(2017). ※Mouse plasma
4) Fujii, N. et al. : *Aging Cell*, **16**, 508(2017). ※Rat plasma
5) Oh, T-W., et al. : *J. Exerc. Nutrition Biochem.*, **19**, 247(2015). ※Rat plasma
6) Fan, Y. et al. : *J. Biomed. Sci.*, **23**, 56(2016). ※Mouse serum

Code No.	Product name	Grade	Package size	Storage Condition
290-63701	LabAssay™ Triglyceride	for Cellbiology	1,000 tests	Keep at 2-10℃

Reagents for Adiposity & Diabetes Research

Wako offers a wide variety of products for studying Obesity and Diabetes.



Code No.	Product name	Standard curve range	Grade	Package Size	Storage condition
299-75501	GLP-1 ELISA Kit *Wako*, High Sensitive	0.94~30pmol/L (3.1~100pg/mL)	for Diabetes Research	96 tests	Keep at 2-10℃
293-79301	Active GLP-1 ELISA Kit Wako, Chemiluminescent	0.123~30pmol/L	for Diabetes Research	96 tests	Keep at 2-10℃
291-59201	Rat GLP-1 ELISA Kit *Wako*	206~50,000pg/mL	for Diabetes Research	96 tests	Keep at 2-10℃
292-60601	Rat GLP-2 ELISA Kit *Wako*	0.137~100ng/mL	for Diabetes Research	96 tests	Keep at 2-10℃
299-73801	Mouse GIP(Active) ELISA Kit *Wako*	7.8~500pg/mL	for Diabetes Research	96 tests	Keep at 2-10℃
292-80001	Glucagon ELISA Kit *Wako*	2.2~143.6pmol/L(7.8~500pg/mL)	for Diabetes Research	96 tests	Keep at 2-10℃
291-73501	Mouse/Rat PYY ELISA Kit *Wako*	0.15~12.5ng/mL	for Adiposity Research	96 tests	Keep at 2-10℃
295-57401	Rat C-Peptide ELISA Kit *Wako*	1.56~50ng/mL	for Diabetes Research	96 tests	Keep at 2-10℃
297-57601	Rat Leptin ELISA Kit *Wako*	78.1~5,000pg/mL(Non-Plasma、Non-serum) 312.5~20,000pg/mL(Plasma、Serum)	for Adiposity Research	96 tests	Keep at 2-10℃

LBIS

ELISA for Measuring Insulin

Code No.	Maker Code	Product name	Standard curve range	Package Size	Price
637-10629	AKRIN-010H	Lbis Insulin-Rat (H type)	0.5 ～100ng/mL	96 tests	Keep at 2-10℃
634-10379	AKRIN-011H	Lbis Insulin-Mouse (H type)	0.5 ～100ng/mL	96 tests	Keep at 2-10℃
631-01479	AKRIN-010T	Lbis Insulin-Rat-T	0.156 ～10ng/mL	96 tests	Keep at 2-10℃
638-01489	AKRIN-011T	Lbis Insulin-Mouse-T	0.156 ～10ng/mL	96 tests	Keep at 2-10℃
631-07199	AKRIN-010S	Lbis Insulin-Rat (S type)	0.1 ～10ng/mL	96 tests	Keep at 2-10℃
630-07289	AKRIN-011S	Lbis Insulin - Mouse (S type)	78 ～5,000pg/mL	96 tests	Keep at 2-10℃
Inquiry	AKRIN-130	Lbis Insulin-Rat (U-E type)	39 ～2,500pg/mL	96 tests	Keep at 2-10℃
Inquiry	AKRIN-031	Lbis Insulin-Mouse (U type)	39 ～2,500pg/mL	96 tests	Keep at 2-10℃
630-24149	AKRIN-010RU	Lbis Rat Insulin ELISA KIT(RTU)	100 ～12,000pg/mL	96 tests	Keep at 2-10℃
633-23919	AKRIN-011RU	Lbis Mouse Insulin ELISA KIT(RTU)	100 ～12,000pg/mL	96 tests	Keep at 2-10℃
637-01459	AKRIN-012T	Lbis Insulin-Dog-T	0.188 ～12ng/mL	96 tests	Keep at 2-10℃
634-01469	AKRIN-013T	Lbis Insulin-Porcine	0.188 ～12ng/mL	96 tests	Keep at 2-10℃
Inquiry	AKRIN-014T	Lbis Insulin-Monkey-T	0.156 ～10ng/mL	96 tests	Keep at 2-10℃

Other products : Reagent for Adiposity & Diabetes Research

Code No.	Maker Code	Product name	Standard curve range	Package Size	Price
630-23049	AKMPI-111	Lbis Proinslin Mouse/Rat	1.47~94.3pg/mL(Standard curve range) 7.35~471.5pg/mL(Amount of a sample:10μL)	60 tests	Keep at 2-10℃
635-07239	AKRCP-031	Lbis C-Peptide-Mouse (U type)	46.9~3,000pg/mL(Standard curve range) 234.5~15,000pg/mL(Amount of a sample:10μL)	96 tests	Keep at 2-10℃
633-07279	AKRCP-030	Lbis C-Peptide Rat (U type)	46.9~3,000pg/mL(Standard curve range) 234.5~15,000pg/mL(Amount of a sample:10μL)	96 tests	Keep at 2-10℃
631-10389	AKRLP-011	Lbis Leptin-Mouse	103~25,000pg/mL(Standard curve range) 20.6~5,000pg/mL(Amount of a sample:10μL)	96 tests	Keep at 2-10℃
638-04309	AKRAL-121	Lbis Albumin Mouse ELISA Kit	50~1,000ng/mL(Standard curve range)	96 tests	Keep at 2-10℃
635-04319	AKRAL-120	Lbis Albumin Rat ELISA Kit	50~1,000ng/mL(Standard curve range)	96 tests	Keep at 2-10℃
639-13749	AKRGH-010	Lbis GH-Rat	31.3~2,000pg/mL(Standard curve range) 313~20,000pg/mL(Amount of a sample:5μL) 62.6~4,000pg/mL(Amount of a sample:25μL)	96 tests	Keep at 2-10℃
630-23929	AKRLH-010S	Lbis Rat LH ELISA KIT(S type)	313～10,000pg/mL(Standard curve range) 1.56～50ng/mL(Amount of a sample:10μL)	96 tests	Keep at 2-10℃
633-31729	AKRTS-010S2	Lbis TSH-Rat (SⅡtype)	184～18,000pg/mL(Standard curve range) 0.92~90ng/mL(Amount of a sample:20μL)	96 tests	Keep at 2-10℃
637-15129	AKMGP-011	Lbis GLP-1(active) ELISA KIT	1.56~50pg/mL(Standard curve range) 7.8～250pg/mL(Amount of a sample:10μL) 3.9～125pg/mL(Amount of a sample:20μL)	96 tests	Keep at 2-10℃
638-13079	AKMAN-011	Lbis High Molecular Adiponectin-Mouse/Rat	3.13～200ng/mL(Standard curve range) 78.25~5,000ng/mL(Using sample diluted 25times)	96 tests	Keep at 2-10℃

FUJIFILM Wako Pure Chemical Corporation
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