

## 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.	Test item	Animal species	Sample	Standard curve range	Sample amount	Measuring time	Package size
633-51761	Ammonia	Mouse, Rat, Human	Blood	100~400μg/dL	70μL	approx. 70min	700 tests
633-51021	ALP	Mouse, Rat, Human	Serum/Plasma	0.0625~0.5mmol/L	20μL	approx. 20min	500tests
635-50981	Cholesterol	Mouse, Rat, Human	Serum/Plasma	50~592.2mg/dL	2μL	approx. 10min	500tests
636-51011	Creatinine	Mouse, Rat, Human	Serum/Plasma	2.5~10mg/dL	50μL	approx. 40min	500test
638-50971	Glucose	Mouse, Rat, Human	Serum/Plasma	50~500mg/dL	2μL	approx. 10min	500tests
633-52001	NEFA (Non-esterified fatty acid)	Mouse, Rat, Human	Serum/Plasma	0.4~1.97mEq/L ※Oleic acid 1mEq=1mmol	4μL	approx. 20min	500tests
639-51001	Phospholipid	Mouse, Rat, Human	Serum/Plasma	75.0~596.1mg/dL	2μL	approx. 10min	500tests
632-50991	Triglycelide	Mouse, Rat, Human	Serum/Plasma	100~888mg/dL	2μL	approx. 10min	350tests

### 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.

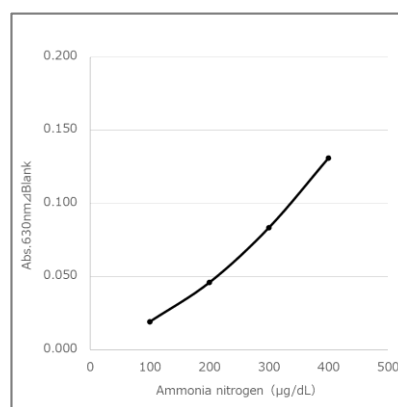
#### Assay Principle (Modified Fujii-Okuda Method)

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

#### 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.	Maker Code	Product name	Package size	Storage Condition
633-51761	LABNH3-M1	LabAssay™ Ammonia	700 tests	Keep at 2-10°C

## 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)

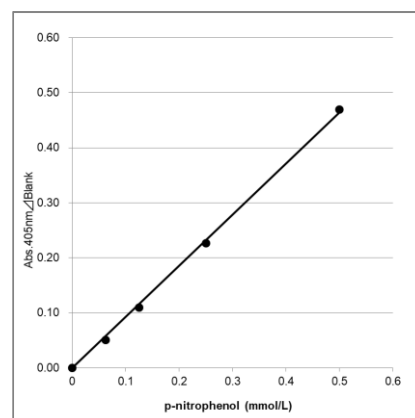
*p*-Nitrophenylphosphate is hydrolyzed into *p*-Nitrophenol in the presence of Alkaline Phosphatase(ALP).

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	10 tablets
2	Buffer Solution	50mL×1bottle
3	Stop Solution	50mL×1bottle
4	Standard Solution	5mL×1bottle

### 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 liquid of mouse kidney
- 2) Matsuyama, A. et al. : *Clin. Exp. Pharmacol. Physiol.*, **45**, 75(2018). ※MC3T3-E1 cell, C2C12 cell
- 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.	Maker Code	Product name	Package size	Storage Condition
633-51021	LABALP-M1	LabAssay™ ALP	500 tests	Keep at 2-10°C

## 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.

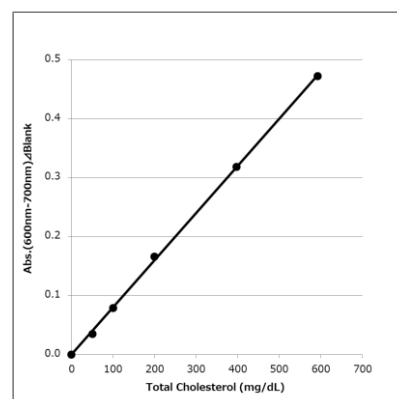
### Assay Principle (Cholesterol Oxidase · DAOS method)

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 Solution	150mL×1bottle
2	Chromogen Substrate	for 150mL×1bottle
3	Standard Solution	5mL×1bottle

### 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.	Maker Code	Product name	Package size	Storage Condition
635-50981	LABCHO-M1	LabAssay™ Cholesterol	500 tests	Keep at 2-10°C

## LabAssay™ Creatinine

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.

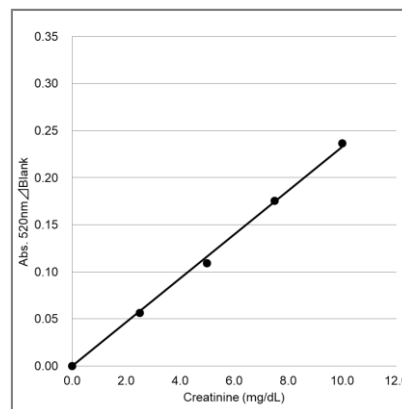
### Assay Principle (Jaffé method)

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	Deproteinizing Reagent	150mL×1bottle
2	Picric Acid Reagent	50mL×1bottle
3	0.75mol/L Sodium Hydroxide Solution	50mL×1bottle
4	Standard Solution	15mL×1bottle

### 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.	Maker Code	Product name	Package size	Storage Condition
636-51011	LABCREA-M1	LabAssay™ Creatinine	500 tests	Keep at 2-10°C

## 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.

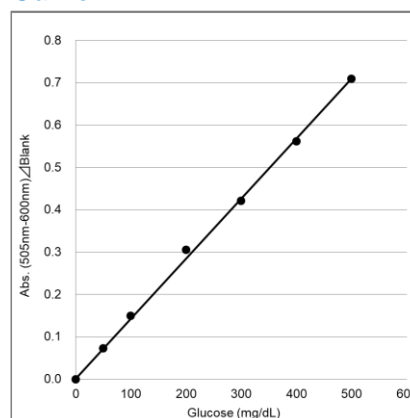
### Assay Principle (Mutarotase · GOD method)

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 Solution	150mL×1bottle
2	Chromogen Substrate	for 150mL×1bottle
3	Glucose Standard I	3mL×1bottle
4	Glucose Standard II	3mL×1bottle

### Standard Curve



### Performance

- Standard curve range 50~500mg/dL(mg/100mL)
- Measurement time approx. 10 minutes
- Amount of sample 2μL
- 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.	Maker Code	Product name	Package size	Storage Condition
638-50971	LABGLUC-M1	LabAssay™ Glucose	500 tests	Keep at 2-10°C

## 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 peripheral 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 Contents

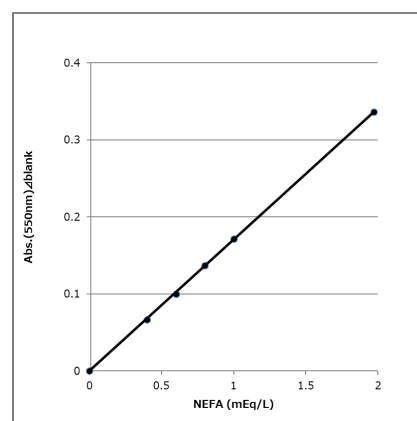
1	Chromogen Reagent A	for 10mL×4bottles
2	Solvent A	45mL×1bottle
3	Chromogen Reagent B	for 20mL×4bottles
4	Solvent B	90mL×1bottle
5	Standard Solution (Oleic acid 1mEq/L)	7mL×1bottle

※Oleic acid 1mEq=1mmol

### Performance

- Standard curve range 0.4~1.97mEq/L
- Measurement time approx. 20 minutes
- Amount of sample 4μL
- Measurement wavelength 550nm

### Standard Curve



### [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) 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.	Maker Code	Product name	Package size	Storage Condition
633-52001	LABNEFA-M1	LabAssay™ NEFA	500 tests	Keep at 2-10°C

## 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.

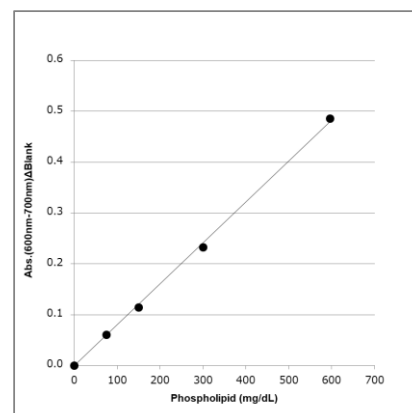
### Kit Contents

1	Buffer Sokution	50mL×3bottles
2	Chromogen Substrate	for 50mL×3bottles
3	Standard Solution	5mL×1bottle

### Performance

- Standard curve range 75.0~596.1mg/dL(mg/100mL)
- Measurement time approx. 10 minutes
- Amount of sample 2μL
- Measurement wavelength 600nm(Main), 700nm(Sub)

### Standard Curve



### [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.	Maker Code	Product name	Package size	Storage Condition
639-51001	LABPLIP-M1	LabAssay™ Phospholipid	500 tests	Keep at 2-10°C

## 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.

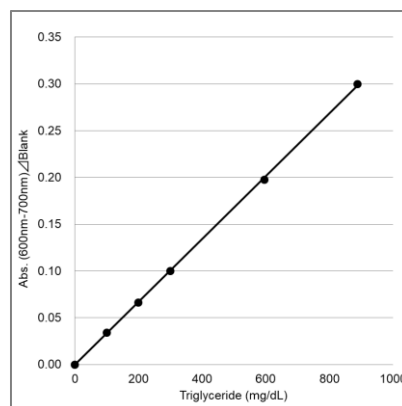
### Assay Principle

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×1 bottle
2	Chromogen Substrate	for 105mL×1 bottle
3	Standard Solution	4mL×1bottle

### 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.	Maker Code	Product name	Package size	Storage Condition
632-50991	LABTRIG-M1	LabAssay™ Triglyceride	350 tests	Keep at 2-10°C

## Reagents for Adiposity & Diabetes Research

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

Wako metabolic

search



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°C
293-79301	Active GLP-1 ELISA Kit Wako, Chemiluminescent	0.123~30pmol/L	for Diabetes Research	96 tests	Keep at 2-10°C
292-80001	Glucagon ELISA Kit Wako	2.2~143.6pmol/L (7.8~500pg/mL)	for Diabetes Research	96 tests	Keep at 2-10°C
291-73501	Mouse/Rat PYY ELISA Kit Wako	0.15~12.5ng/mL	for Adiposity Research	96 tests	Keep at 2-10°C

# LBIS

## ELISA for Measuring Insulin

Code No.	Maker Code	Product name	Standard curve range	Package Size	Storage condition
637-10629	AKRIN-010H	Lbis Insulin-Rat (H type)	0.5 ~100ng/mL	96 tests	Keep at 2-10°C
634-10379	AKRIN-011H	Lbis Insulin-Mouse (H type)	0.5 ~100ng/mL	96 tests	Keep at 2-10°C
631-01479	AKRIN-010T	Lbis Insulin-Rat	0.156 ~10ng/mL	96 tests	Keep at 2-10°C
638-01489	AKRIN-011T	Lbis Insulin-Mouse	0.156 ~10ng/mL	96 tests	Keep at 2-10°C
631-07199	AKRIN-010S	Lbis Insulin-Rat (S type)	0.1 ~10ng/mL	96 tests	Keep at 2-10°C
630-07289	AKRIN-011S	Lbis Insulin - Mouse (S type)	78 ~5,000pg/mL	96 tests	Keep at 2-10°C
630-05589	AKRIN-130	Lbis Insulin-Rat (U-E type)	39 ~2,500pg/mL	96 tests	Keep at 2-10°C
637-03419	AKRIN-031	Lbis Insulin-Mouse (U type)	39 ~2,500pg/mL	96 tests	Keep at 2-10°C
630-24149	AKRIN-010RU	Lbis Rat Insulin ELISA KIT(RTU)	100 ~12,000pg/mL	96 tests	Keep at 2-10°C
633-23919	AKRIN-011RU	Lbis Mouse Insulin ELISA KIT(RTU)	100 ~12,000pg/mL	96 tests	Keep at 2-10°C
637-01459	AKRIN-012T	Lbis Insulin-Dog-T	0.188 ~12ng/mL	96 tests	Keep at 2-10°C
634-01469	AKRIN-013T	Lbis Insulin-Porcine	0.188 ~12ng/mL	96 tests	Keep at 2-10°C

## Other products : Reagent for Adiposity & Diabetes Research

Code No.	Maker Code	Product name	Standard curve range	Package Size	Storage condition
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°C
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°C
638-04309	AKRAL-121	Lbis Albumin Mouse ELISA Kit	50~1,000ng/mL(Standard curve range)	96 tests	Keep at 2-10°C
635-04319	AKRAL-120	Lbis Albumin Rat ELISA Kit	50~1,000ng/mL(Standard curve range)	96 tests	Keep at 2-10°C
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°C

## Metabolic Research Reagents

Code No.	Maker Code	Product name	Standard curve range	Package Size	Storage condition
637-10641	AKHB48	Lbis Human Apo B-48 ELISA Kit	2.5~160 ng/mL	96 tests	Keep at 2-10°C
622-04909	AKRB48	Lbis Rabbit Apo B-48 ELISA Kit	19.5~1250 ng/mL	96 tests	Keep at 2-10°C

Listed products are intended for laboratory research use only, and not to be used for drug, food or human use. / Please visit FUJIFILM Wako Laboratory Chemicals site: <https://labchem-wako.fujifilm.com/> / This leaflet may contain products that cannot be exported to your country due to regulations. / Bulk quote requests for some products are welcomed. Please contact us.

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