LabTurbo®

Handbook

For 48C

2020/10 Version 3

CE IVD

TAIGEN®

TAIGEN BIOSCIENCE CORPORATION

Contents

Kit Contents

LabTurbo Kit	DNA Mini Kit	DNA Mini Kit	DNA Mini Kit	DNA Mini Kit
Cat. No.	LGD480-220	LGD480-300	LGD480-500	LGD480-1000
Number of preparations	480	480	480	480
Column set	480	480	480	480
Sample 6-tube strip	100	100	100	100
Elution tubes 2.0ml	480	480	480	480
DLL	1 x 160 ml	1 x 200 ml	2 x 160 ml	2 x 160 ml 1 x 225 ml
LW1 (concentrate)	3 x 175 ml	1 x 38 ml 3 x 175 ml	1 x 95 ml 3 x 175 ml	4 x 175 ml
CCEB	2 x 500 ml	2 x 500 ml	2 x 500 ml	2 x 500 ml
Proteinase K	2 x 5 ml	3 x 5 ml	5 x 5 ml	9 x 6 ml
Handbook	1	1	1	1

LabTurbo Kit	DNA Mini Kit	DNA Mini Kit
Cat. No.	LGD480-2000	45X-LGD480-2000
Number of preparations	480	480
Column set	480	480
Sample 6-tube strip	80	80 (Long 6-strip tubes)
Elution tubes 2.0ml	100	100
DLL	1 x 160 ml 2 x 500 ml	1 x 160 ml 2 x 500 ml
LW1 (concentrate)	5 x 175 ml	5 x 175 ml
CCEB	2 x 500 ml	2 x 500 ml
Proteinase K	17 x 6 ml	17 x 6 ml
Handbook	1	1

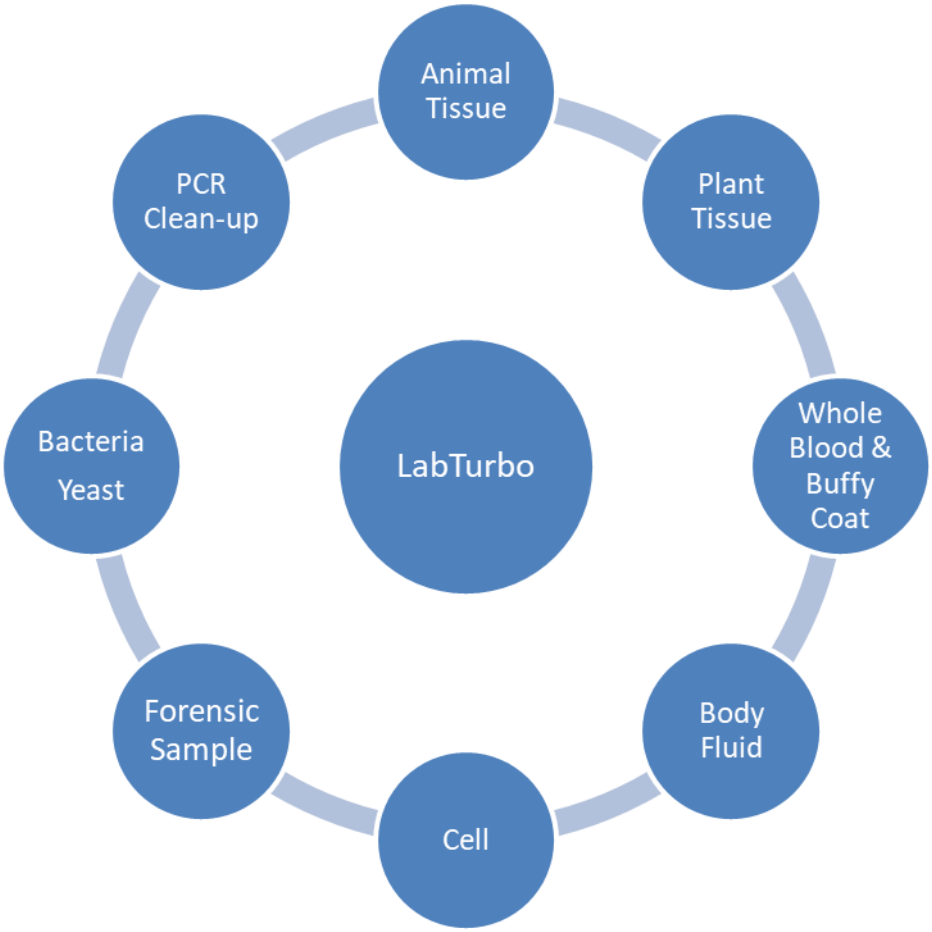
LabTurbo Kit	Virus Mini Kit	Virus Mini Kit	Virus Mini Kit	Virus Mini Kit
Cat. No.	LVN480-220	LVN480-300	LVN480-500	LVN480-1000
Number of preparations	480	480	480	480
Column set	480	480	480	480
Sample 6-tube strip	100	100	100	100
Elution tubes 2.0ml	480	480	480	480
VLL	1 x 160 ml	1 x 200 ml	2 x 160 ml	1 x 160 ml 2 x 200 ml
LW1 (concentrate)	3 x 175 ml	1 x 38 ml 3 x 175 ml	1 x 95 ml 3 x 175 ml	4 x 175 ml
CCEB	2 x 500 ml	2 x 500 ml	2 x 500 ml	2 x 500 ml
Proteinase K	2 x 5 ml	3 x 5 ml	5 x 5 ml	9 x 6 ml
BE solution	1 x 1.6 ml	1 x 2.0 ml	2 x 1.6 ml	1 x 1.6 ml 2 x 2.0 ml
Handbook	1	1	1	1

LabTurbo Kit	RNA Mini Kit	RNA Mini Kit
Cat. No.	LTR480-500	LTR480-1000
Number of preparations	480	480
Column set	480	480
Filter column	480	480
Collection tube	480	480
Sample 6-tube strip	100	100
Elution tubes 2.0ml	480	480
RLL	300 ml	600 ml
LW1 (concentrate)	1 x 95 ml 1 x 175 ml	1 x 95 ml 1 x 175 ml
CCEB	1 x 200 ml 2 x 500 ml	1 x 200 ml 2 x 500 ml
Handbook	1	1

LabTurbo Kit	Viral DNA/RNA Mini Kit	Viral DNA/RNA Mini Kit	Viral DNA/RNA Mini Kit
Cat. No.	LVX480-300	LVX480-500	LVX480-1000
Number of preparations	480	480	480
Column set	480	480	480
Sample 6-tube strip	100	100	100
Elution tubes 2.0ml	480	480	480
VXL	2 x 140 ml	2 x 160 ml	1 x 160 ml 2 x 200 ml
BE solution	2 x 1.4 ml	2 x 1.6 ml	1 x 1.6 ml 2 x 2.0 ml
LW1 (concentrate)	1 x 95 ml 3 x 175 ml	1 x 95 ml 3 x 175 ml	2 x 95 ml 3 x 175 ml
CCEB	2 x 500 ml	2 x 500 ml	2 x 500 ml
Proteinase K	3 x 5 ml	5 x 5 ml	9 x 6 ml
Handbook	1	1	1

Applications

LabTurbo kits can effectively purify cellular, viral, bacterial, fungal, tissue, plant, and circulation DNA/RNA from a broad range of samples such as blood, blood cells, buffy coat, cultured cells, plasma, serum, culture medium, urine, sputum, stool, bronchoalveolar lavage (BAL), synovial fluids, buccal swab, pharyngeal swab, vaginal swab, forensic samples (cigarette butts; blood stain; straw; tape; chewing gum), fixed tissue (FFPE), plant (rice; wheat; leave; seed), fish, and food products.



Kit Storage Condition

All components of the kits including proteinase K can be stored at room temperature (15 – 25°C) for up to one year.

Kit Description

All LabTurbo Kits use silica membrane-chaotropic technology for purifications of high-quality DNA/RNA from a wide range of samples. The kits are designed for automated processing on LabTurbo 24, 45 and 48 Compact System.
Purified nucleic acids are free of proteins, nucleases, and other impurities. The purified DNA/RNA are ready to use for highly sensitive detection in downstream assays, such as PCR, real-time PCR, NGS, SNP, or other enzymatic reactions.

Quality Control

LabTurbo Kits are developed by Taigen Bioscience Corporation. The performance of LabTurbo Kits is inspected and tested routinely on a lot-to-lot basis in our QC

laboratory. All components and plastic consumables of LabTurbo Kits are validated by visual, physical, DNase free, RNase free, human genomic DNA free, purity, yield and sensitivity tests, etc. with appropriate sample types, reagents, physical, and biochemical methods prior to the shipments.

Product Use Limitations

LabTurbo kits are intended for research purposes. Clinical usages should be validated by the users and comply with the regulations and laws of local governments. All the kit components should be handled with care and attention described in this handbook. Waste should be disposed properly in accordance with all local and regional regulations.

Product Warranty

Taigen Bioscience Corporation guarantees the performance of all products as described in our product manual. It is the user's responsibility to ascertain the suitability of the product for his/her particular use. Taigen Bioscience reserves the rights to alter any product, elements, and ingredients to improve operational simplicity and performance.

Safety Information

When working with chemicals and potentially infective pathogens, always wear a suitable lab coat, disposable gloves, and protective goggles. Material Safety Data Sheets for all components of LabTurbo Kits can be requested by emailing Taigen Bioscience Corporation.
During the extraction procedures, the waste may contain guanidine salts from Buffers DLL, VLL, VXL, and LW1. Avoid mixing bleach with the waste. If any liquids from the aforementioned buffer spill out, clean with suitable detergent and water. If the spill contains potentially infectious agents, clean the affected areas with 5% bleach.

Buffer DLL, VLL, VXL, and LW1
Contain guanidine hydrochloride: harmful if swallowed. Irritating to eyes and skin.

Proteinase K

Sensitizer, irritant. Please wear suitable protective clothing and gloves.

Buffer Preparation Before Using

Buffer LW1

Add ethanol (96 – 100%) to a concentrated Buffer LW1, by following the instruction on the bottle, and mark it properly. Between runs, store the reconstituted Buffer LW1 at room temperature (15 – 25°C). Always mix Buffer LW1 by gentle shakes before use.

Buffer VLL / VXL

Add the instructed amount of BE solution to Buffer VLL / VXL to form the 1% BE solution (v/v) in Buffer VLL / VXL before use. The reconstituted Buffer VLL / VXL can be stored at room temperature (15 – 25°C) for up to two months.

Notifications

- Proteinase K, DLL buffer and CCEB are all ready to use.
- If any precipitate forms in Buffer DLL/VLL/VXL, dissolve it by incubating at 70°C.
- Both fresh and frozen tissues can be used for RNA extraction. Tissues can be stored at –70°C for several months. Flash-freeze tissues in liquid nitrogen, and immediately transfer to –70°C environments. Do not allow tissues to thaw during weighing or handling prior to disruption in Buffer RLL.
- Ensure that 96-100% EtOH is added to Buffer LW1 concentrate according to the instruction on the LW1 bottle.
- Ensure that the instructed amount of BE solution is added to Buffer VLL / VXL before use.
- To guarantee that all the automation processes are accurately executed, please use the sample tube and elution tube supplied in the kit; **It is not allowed to use other tubes.**
- All centrifugation steps are carried out at room temperature, if necessary.
- Read the user manual carefully before using LabTurbo workstation.

- The plastic consumables and reagents are not intended to be reused.

Equipment and Reagents Supplied by User

- LabTurbo automated nucleic acid purification system - LabTurbo 48 Compact System
- LabTurbo robotic filtered tips (1100 µl) cat. No. S0550
- 96-100% Ethanol
- LTL (offered separately; for tissue DNA lysis)
- β-mercaptoethanol (for RNA extraction)
- DNase I (for RNA extraction)
- Homogenizer (for tissue/plant samples)

Sample Preparations

If you intend to process the following sample type(s), please contact us or your local distributor for sample preparation procedures.

- Human/animal tissues
- Human serum/plasma
- Frozen human whole blood
- Human buffy coat
- Cultured cell
- Oral swab/Genital swab
- Forensic samples (Cigarette butt, swab, straw, glove, etc)
- Gram-negative bacteria in urine
- Bronchoaveolar lavage (BAL) fluid
- Formalin-fixed, paraffin embedded tissue (FFPE)
- Sputum
- Stool
- Vaccine

Performance of the Devices

Genomic DNA recovery performance evaluation (for DNA Mini Kit):

Sample type	Input amount	Yield	Concentration (For 100 µl Elution)
Human whole blood	220 µl	3-8 µg	30-80 ng/µl
Human whole blood	300 µl	4-10 µg	40-100 ng/µl
Human whole blood	500 µl	6-15 µg	60-150 ng/µl
Human whole blood	1000 µl	15-45 µg	150-450 ng/µl
Human whole blood	2000 µl	35-100 µg	350-1000 ng/µl
Mouse liver (10 mg)	300 µl	20-40 µg	200-400 ng/µl
Mouse lung (25 mg)	300 µl	7-13 µg	70-130 ng/µl
Mouse tail (0.5-1cm)	300 µl	4-10 µg	40-100 ng/µl
Mouse stool (30 mg)	300 µl	10-50 µg	100-500 ng/µl
Culture cell (5 x 10^6 cells)	300 µl	20-30 µg	200-300 ng/µl
Rice leaf (20 mg)	300 µl	4-8 µg	40-80 ng/µl
Oil palm leaf (50 mg)	300 µl	1.5-4.5 µg	15-45 ng/µl

Total RNA recovery performance evaluation (for RNA Mini Kit):

Sample type	Input amount	Yield	Concentration (For 100 µl Elution)
Human whole blood (from 1ml)	500 µl	3-6 µg	30-60 ng/µl
Human whole blood (from 3ml)	1000 µl	5-12 µg	50-120 ng/µl
Arabidopsis leaf (100 mg)	1000 µl	30-45 µg	300-450 ng/µl
Mouse liver (10 mg)	1000 µl	20-40 µg	200-400 ng/µl
Chicken liver (10 mg)	1000 µl	10-20 µg	100-200 ng/µl
Mouse muscle (15 mg)	1000 µl	5-15 µg	50-150 ng/µl

Viral DNA/RNA recovery performance evaluation (for Viral DNA/RNA Mini Kit and Virus Mini Kit):

(Using same HBV origin for testing different input amount, HBV concentration=5x10^5 IU/ml)

Sample type	Input amount	Target	qPCR CT value
Serum	220 µl	HBV	24.5
Serum	300 µl	HBV	24.2
Serum	500 µl	HBV	23.2
Serum	1000 µl	HBV	22.4

(Using same HCV origin for testing different input amount, HCV concentration=5.2x10^4 IU/ml)

Sample type	Input amount	Target	qPCR CT value
Serum	220 µl	HCV	29.3
Serum	300 µl	HCV	29.1
Serum	500 µl	HCV	28.4
Serum	1000 µl	HCV	27.5

The limit of detection of HCV was used to evaluate the performance of the LVX viral DNA/RNA extraction kit. The performance of the device is listed below:

Limit of detection of HCV analysis			
Viral load (IU/ml)	**Replicates**	**Positive detection**	**Positive percentage (%)**
25	63	63	100.0
20	63	62	98.4
15	63	60	95.2
10	63	61	96.8
7.5	63	56	88.9
5	63	48	76.2
Probit analysis 95%	Viral load 10 IU/ml		

The limit of detection of HCV using the device is determined to be 10 IU/ml.

Interfering Substances Study

An interfering substance study was performed to evaluate the interference of the presence of various common interfering substances. The study results indicate that the following interfering substances do not affect the performance of the devices: EDTA(17 µmol/L), Heparin(15 U/mL), Citrate(1.6 %), Hemoglobin(2 g/L),

Triglycerides(37 mmol/L), Xylometazoline hydrochloride (1.0 mg/ml), Oxymetazoline Hydrochloride (1.0 mg/ml), Budesonide Micronized (1.28 mg/ml), Fluticasone furoate (27.5ug/ 50ul), Benzalkonium chloride (0.0035 %), Cetylpyridinium chloride (2 mg/tablet), Benzydamine HCl (3.0 mg/ml), Mupirocin (20 mg/g), Tobramycin (500 mg/Caps.), Amoxicillin (500 mg/Caps.), Oseltamivir phosphate (75 mg/caps.)

Technical Support

At Taigen Bioscience Corporation, we are proud of the qualities of our products and technical support. For technical assistance, please contact our department of application and customer service at order@taigen.com or call +886-2-28891136.

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