

NGM Kit Instruction Manual

Product Name

NGM Kit

Specification Model

Specification: 96 tests

Model: NGM Kit (Basic Version) ;NGM Kit (Pro Version)

Intended Use

For metabolomics detection in samples. This kit is for research use only.

Testing Principle

The protein precipitation method is used to separate and extract various metabolites from samples. Liquid chromatography-tandem mass spectrometry (LC-MS/MS) is applied for data collection.

Multi-dimensional matching is performed based on the collected data, integrating information from multiple dimensions (e.g., mass-to-charge ratio (m/z), retention time, ion intensity, fragment spectra) for molecular identification and matching. The multi-dimensional matching algorithm, combined with a database, is used to determine the detected molecular information.

Main Components

Part A	Component Name	Specification	Quantity
	Internal Standard NP (Pro Version)	1mL/bottle	1
	Internal Standard P	0.5mL/bottle	1
	RTQC_NP (Pro Version)	35μL/bottle	1
	RTQC_P	35μL/bottle	1
	Mobile Phase Additive 1 (Pro Version)	0.12mL/bottle	1
	Mobile Phase Additive 2	5mL/bottle	1
	Mobile Phase Additive 3	5mL/bottle	1

Part B1 (NGM Basic Version)	Component Name	Specification	Quantity
	Extraction Agent	50mL/bottle	1
	Protein Precipitation Plate	1 piece/pack	1
	96-Well Collection Plate	1 piece/pack	1
	Plate Silicone Lid Gasket	1 piece/pack	1

Part B2 (NGM Pro Version)	Component Name	Specification	Quantity
	Extraction Agent	100mL/bottle	1
	Protein Precipitation Plate	1 piece/pack	2
	1mL 96-Well Collection Plate	1 piece/pack	2
	1mL Plate Silicone Lid Gasket	1 piece/pack	2

Storage Conditions and Validity Period

Part A: Store at -85°C to -75°C in a sealed, light-proof condition. Valid for 12 months from the production date. Avoid repeated freeze-thaw cycles.

Part B: Store at 2°C to 30°C in a sealed, light-proof condition. Valid for 12 months from the production date.

Applicable Instruments

Liquid chromatography-tandem mass spectrometry (LC-MS/MS) system

Sample Requirements

Liquid samples: whole blood, serum, plasma, urine, cerebrospinal fluid, plant tissue fluid, etc.

Testing Method

1. Preparation of Mobile Phase

Non-polar System

Mobile Phase A: Add 100.0 µL of Mobile Phase Additive 1 to 1 L of ultrapure water and mix well (prepare according to actual usage).

Mobile Phase B: Measure 500 mL of isopropanol and 500 mL of acetonitrile into a 1000 mL glass bottle and mix well (prepare according to actual usage).

Polar System

Mobile Phase A: Accurately add 5 mL of Mobile Phase Additive 2 and 4.535 mL of Mobile Phase Additive 3 to 990 mL of ultrapure water and mix well (prepare according to actual usage).

Mobile Phase B: Acetonitrile (prepare according to actual usage).

2. Preparation of Internal Standard Working Solution

Non-polar System: Transfer Internal Standard NP completely into Extraction Agent NP and mix well (Internal Standard Working Solution NP).

Polar System: Transfer Internal Standard P completely into Extraction Agent P and mix well (Internal Standard Working Solution P).

3. Sample Preprocessing (Automation adaptation required before loading)

Thaw the sample and mix thoroughly. Add 400 µL of Internal Standard Working Solution P to the wells of Protein Precipitation Plate, then add 100 µL of liquid sample. Vortex and mix thoroughly for 10 minutes.

4. Sample Pretreatment

- a) Positive Pressure: Place the Protein Precipitation Plate on the 96-well collection plate. Apply pressure slowly to 6 psi. After liquid starts to drip,

wait 120 s until no liquid remains in the lower layer.

- b) QC Sample Preparation: Mix equal volumes of supernatant from all samples into a QC sample ($n \geq 12$), with a total volume $\geq 400 \mu\text{L}$.

QC Sample Sampling Recommendation	
Sample Quantity	Sampling Volume per Sample
12–20	40 μL
20–40	20 μL
>40	10 μL

- c) Detection: Remove the 96-well collection plate, seal with a film, transfer to the autosampler, and load for analysis.

Quality Control Procedures

RTQC (Real-Time Quality Control)

Frequency: One injection before and after sample testing, and one injection daily during testing.

Acceptance Criteria: Retention time fluctuation ≤ 0.2 min within the same batch.

QC Samples

Frequency: Insert one injection for every 10 valid test samples.

Acceptance Criteria: Median RSD of internal standard response $\leq 15\%$.

Limitations of the Testing Method

This product is for research use only.

Product Performance Indicators

Appearance: The reagent solution should be clear and transparent, free of floccules and precipitation; the packaging box should be clean, and reagent bottles should be free of leakage; labels should be clear, complete, and correctly identified; product name, batch number, and validity period should be legible, and the instruction manual should be clear and complete.

Net Content: The net content of liquid reagents shall not be less than the marked value.

RTQC: Retention time fluctuation ≤ 0.2 min; coefficient of variation of absolute peak area $\leq 30\%$.

Precautions

1. This reagent is for research use only.
2. Components of different batches shall not be mixed.
3. Non-polar and polar systems should be extracted and detected separately.
4. Reagent components should avoid direct sunlight and long-term exposure to light.
5. This reagent contains volatile or slightly toxic organic substances. Experimental operators should wear basic protection (lab coat, protective gloves, and safety goggles), and operations should be performed in a fume hood or biosafety cabinet as much as possible. Avoid skin contact with reagents; if contact occurs, rinse immediately with plenty of water.
6. Tighten the bottle cap immediately after each use to prevent secondary contamination and volatilization.

7. All laboratory reagent handling precautions must be followed when using this product. All waste must be disposed of in accordance with local regulations.

Basic Information

Filer/Manufacturer: Shanghai Biotree Biomedical Technology Co., Ltd.

Address: Floors 4 and 5, Building 1, No. 51 Xinpei Road, Jiading District, Shanghai

Website: www.biotree.cn

Contact: 400-664-9912

After-sales Service: Shanghai Biotree Biomedical Technology Co., Ltd.

After-sales Contact: 400-664-9912

Production Address: Floor 4, Building 1, No. 51 Xinpei Road, Jiading District, Shanghai