Specification Sheet of Mulberry Leaf Extract

1.1 Product Definition

This product is a fine powdered extract prepared from the dried leaves of *Morus alba L.* (Moraceae family) through processes including washing, crushing, low-temperature ultrasonic extraction, filtration, concentration, freeze-drying, pulverization and sieving. It retains the characteristic odor and active ingredients inherent to mulberry leaves, without any addition of preservatives, pigments or fragrances. It can be widely used in food, health care products, cosmetics, pharmaceutical intermediates and other fields, conforming to international standards for food supplements and raw materials, with safe and controllable quality.

1.2 Basic Product Information

- Product Name: Mulberry Leaf Extract
- English Name: Mulberry Leaf Extract
- Botanical Name: *Morus alba L.*
- INCI Name: Morus Alba (Mulberry) Leaf Extract
- CAS No.: 84082-54-2 (extract); 19130-96-2 (1-Deoxynojirimycin, core active ingredient)
- EN No.: 282-041-2
- UN No.: None (non-dangerous goods, no corresponding UN number)
- Part Used: Dried leaves (preferably mulberry leaves harvested after frost)
- Extraction Solvent: Food-grade ethanol/water (single or mixed use available)
- Specifications:
    - 1-Deoxynojirimycin (DNJ): 0.5%~5% (HPLC, customizable)
    - Total Flavonoids (calculated as rutin): 5%~30% (UV, customizable)
    - Total Polysaccharides (calculated as glucose): 10%~40% (UV, customizable)
- Extraction Ratio: 10:1 (10 parts of mulberry leaf raw material yield 1 part of extract), customizable from 5:1 to 30:1

1.3 Description

- Appearance: Fine powder from light yellow to brownish yellow, free of caking and visible impurities
- Odor: Characteristic fresh aroma of mulberry leaves, free of pungent or moldy odors
- Taste: Slightly sweet and astringent, consistent with inherent characteristics of mulberry leaves, no off-flavor or bitter taste
- Solubility: Freely soluble in water, soluble in ethanol; water-soluble product with solubility ⩾95.0% at 25℃, facilitating subsequent processing

1.4 Active Ingredients

- 1-Deoxynojirimycin (DNJ): ⩾0.5% (customizable 0.5%~5.0%), Test Method: HPLC
- Total Flavonoids (calculated as rutin): ⩾5.0% (customizable 5.0%~30.0%), Test Method: UV
- Total Polysaccharides (calculated as glucose): ⩾10.0% (customizable 10.0%~40.0%), Test Method: UV (phenol-sulfuric acid method)
- Chlorogenic Acid: ⩾0.3%, Test Method: HPLC
- Flavonoid Glycosides (quercetin, kaempferol): ⩾0.2%, Test Method: HPLC

1.5 Physicochemical Indicators

- Particle Size: 95% passes 80 mesh, customizable 80~120 mesh, Test Method: Sieving method (GB/T 5507)
- Loss on Drying: ⩽5.0%, Test Method: 105℃ for 2h (GB 5009.3)
- Residue on Ignition (Ash): ⩽10.0%, Test Method: Ignition weighing method (GB 5009.4)
- Total Heavy Metals: ⩽10 mg/kg, Test Method: AAS/ICP-MS
- Lead (Pb): ⩽1.0 mg/kg, Test Method: AAS/ICP-MS (GB 5009.12)
- Arsenic (As): ⩽0.5 mg/kg, Test Method: AAS/ICP-MS (GB 5009.11)
- Cadmium (Cd): ⩽0.1 mg/kg, Test Method: AAS/ICP-MS (GB 5009.15)
- Mercury (Hg): ⩽0.2 mg/kg, Test Method: AAS/ICP-MS (GB 5009.17)
- Residual Solvents: Ethanol ⩽0.5%, Methanol ⩽0.1%, complying with EP/USP standards, Test Method: GC (GB 5009.262, ISO 17299)
- Pesticide Residues: BHC and DDT ⩽0.05mg/kg each, complying with international food raw material pesticide residue control standards (GB 2763)

1.6 Microbiological Indicators

Complying with food-grade standards of US FDA, EU EFSA and China’s food safety standards

- Total Plate Count: ≤1000 CFU/g, Test Method: GB 4789.2 (refer to ISO 21527)
- Molds and Yeasts: ≤100 CFU/g, Test Method: GB 4789.15 (refer to ISO 21527)
- *Escherichia coli*: Negative, Test Method: GB 4789.3
- *Salmonella*: Negative, Test Method: GB 4789.4
- *Staphylococcus aureus*: Negative, Test Method: GB 4789.10

1.7 Nutritional Composition (per 100g)

Item	Content	NRV% (Nutrient Reference Value %)
Energy	372 kJ	4%
Protein	12.5 g	21%
Fat	2.3 g	4%
Saturated Fat	0.6 g	3%
Carbohydrate	75.8 g	25%
Dietary Fiber	13.2 g	53%
Sodium	18 mg	1%

Note: NRV% is calculated in accordance with China GB 28050-2011, EU 90/496/EEC and relevant US FDA standards, for reference only.

1.8 Application Fields

1.8.1 Food Industry

Can be used as a functional ingredient in solid beverages, compressed tablets, meal replacement foods, baked goods, tea drinks and other food products, providing antioxidant and blood sugar-regulating functions, while imparting the unique fresh aroma of mulberry leaves. It meets modern healthy dietary demands and aligns with the R&D trend of natural and healthy foods.

1.8.2 Health Care Products Industry

Used in the preparation of dietary supplements for blood sugar regulation, antioxidation and immunity enhancement. It serves as a core raw material for health care capsules, oral liquids and granules. Through refined extraction and purification, the content of active ingredients is stable, complying with USP, EP pharmacopoeia standards and China’s health care product raw material requirements, with clear scientific evidence for safety and efficacy.

1.8.3 Cosmetics Industry

Added into skin care products, facial masks, toners, emulsions and other cosmetics. With antioxidant, skin-soothing and brightening properties, it fits the R&D demand for natural and mild daily chemical products, improving dullness, dryness and other skin problems. It is compatible with cosmetic formulations and non-irritating.

1.8.4 Other Fields

Can be used as pharmaceutical intermediates (for preparations of blood sugar-regulating and anti-inflammatory products), feed additives (improving livestock and poultry immunity), etc. It has a wide range of applications, meeting industry compliance requirements, and specifications can be customized for different scenarios.

1.9 Compliance Statement

1.9.1 Standards Basis

- International: ISO 20483, ISO 6496
- EU & US: USP (United States Pharmacopoeia), EP (European Pharmacopoeia), FDA 21 CFR, EU Food Supplements Directive 2002/46/EC
- China: GB/T 40642-2021, GB 14881, GB 28050-2011, T/SDCMIA TQW02-2022

1.9.2 Certifications

ISO 9001, HACCP, Kosher, Halal, Organic (optional; corresponding certification documents such as ECOCERT, USDA Organic can be provided per customer requirements)

1.9.3 Additional Statements

- Non-GMO
- Allergen-free (complying with EU allergen directives)
- Non-irradiated
- Free of preservatives, pigments, fragrances and harmful solvent residues

1.10 Packaging and Storage

- Packaging: 1kg/5kg aluminum foil bags; 25kg fiber drums (lined with double PE bags). Custom packaging available per customer requirements. Deoxidizer is included inside, with good sealing performance to prevent moisture absorption and oxidation.
- Storage: Sealed, stored in a cool, dry and ventilated place, away from strong light, high temperature (>30℃), peculiar smells and toxic and harmful substances, to avoid moisture absorption, oxidation and microbial contamination.
- Shelf Life: 24 months (unopened original package); products processed by low-temperature ultrasonic extraction + freeze-drying can be stored sealed for up to 30 months. Once opened, use within 30 days with proper sealing.

1.11 Explanation of Key International Standard Requirements

- Active Ingredients: 1-Deoxynojirimycin (DNJ) is the core quality control indicator; total flavonoids and total polysaccharides are auxiliary indicators, mandatory for European and American customers. Test methods and limits can be adjusted per customer requirements to meet target market standards.
- Heavy Metals/Microorganisms: Strictly comply with EU 1881/2006 and FDA cGMP limits, which are critical for customs clearance when exporting to Europe and the US. Third-party test reports with CMA/CNAS accreditation can be provided as evidence.
- Supporting Documents: Export requires COA (Certificate of Analysis), MSDS, botanical origin certificate and third-party test reports. Document content can be customized per target market (Europe, US, Southeast Asia, etc.) to ensure smooth customs clearance.

Appendix: Specification Models (Classified by Application Scenarios)

Based on core demands of different end-use scenarios, four series are defined, each with exclusive processes and specifications to precisely match functional positioning and highlight product differentiation. Details are as follows:

1. Food Grade (ML-F01)

- Application Scenarios: Solid beverages, compressed tablets, condiments, baked goods, tea drinks and other food products
- Exclusive Specifications: Prepared by pure water extraction, solvent residue-free; DNJ ⩾0.5%, total flavonoids ⩾5.0%; mild odor with fresh mulberry aroma; particle size 100~120 mesh; excellent instant solubility, ready for direct addition without further treatment.

2. Health Care Product Grade (ML-H02)

- Application Scenarios: Dietary supplements, health care capsules, oral liquids, granules and other health care products
- Exclusive Specifications: Prepared by water-alcohol dual extraction; DNJ ⩾2.0%, total flavonoids ⩾15.0%, total polysaccharides ⩾20.0%; purified by multi-stage membrane separation with high purity and strong activity, free of impurities and precipitation; complies with health care product safety standards, directly applicable for health care product formulation R&D.

3. Cosmetic Grade (ML-C03)

- Application Scenarios: Skin care products, facial masks, toners, emulsions and other cosmetics
- Exclusive Specifications: Prepared by ultrasonic-assisted extraction; total flavonoids ⩾10.0%, chlorogenic acid ⩾0.5%; decolorized with uniform color and mild odor; good water solubility, compatible with cosmetic formulations; exerts antioxidant and skin-soothing effects, non-irritating.

4. Pharmaceutical / High-End Custom Grade (ML-M04)

- Application Scenarios: Pharmaceutical intermediates, high-end health care products, core ingredients of high-end cosmetics and other high-end applications
- Exclusive Specifications: Prepared by supercritical CO_2 extraction / macroporous resin purification; DNJ customizable at 3.0%~5.0%, total flavonoids customizable at 20.0%~30.0%; active ingredient retention rate ⩾95%; no solvent residue, extremely high purity, complying with pharmaceutical standards. Particle size, solubility and other parameters can be customized on demand.

Analysis of Mulberry Leaf Extract Production Process

Preface

As a classic medicinal and edible plant, mulberry leaf extract is rich in various active ingredients including 1-Deoxynojirimycin (DNJ), total flavonoids, mulberry leaf polysaccharides and chlorogenic acid. With excellent effects such as blood sugar regulation, antioxidation, immunity enhancement and skin brightening, it is widely used in functional foods, health care products, cosmetics, pharmaceuticals, feed and other fields. This document provides an in-depth analysis of the full production process of mulberry leaf extract, systematically presenting process principles, core technologies, quality control standards and product advantages from raw material sourcing to finished product delivery. It demonstrates production professionalism and technical barriers while clearly conveying core product value, offering customers comprehensive and reliable process references to support precise selection of high-quality natural mulberry leaf raw materials.

This mulberry leaf extract adopts a full modern production process: source-selected frost-harvested mulberry leaves + low-temperature pretreatment + targeted extraction + multi-stage membrane purification + low-temperature drying. Under mild conditions, core active ingredients such as DNJ, flavonoids and polysaccharides are retained to the maximum extent, while impurities such as crude fiber, tannins and pigments are effectively removed. Production strictly complies with food-grade / health care product-grade standards, with full-process quality control at key steps, ensuring high purity, high activity and high stability of the product. It can be widely used in functional foods, health care products, cosmetics and pharmaceutical fields, providing customers with safe, stable and high-quality natural plant raw materials.

I. Raw Material Source Control: Selected Frost-Harvested Mulberry Leaves for Active Foundation

Raw material quality is the core prerequisite for the activity and safety of mulberry leaf extract. We adhere to the principle of “source selection and strict access”, establishing a full-chain raw material control system covering variety, production area, harvesting and testing to ensure each batch meets high-end production standards and lays a solid foundation for subsequent processes.

1.1 Variety and Harvest Period Selection: Targeted Screening of High-Activity Raw Materials

Instead of mulberry leaves in ordinary growth stages, we specifically select leaves harvested after frost, when DNJ, total flavonoids and mulberry leaf polysaccharide contents reach

annual peaks, with moderate fiber lignification and sufficient accumulation of active substances. Active ingredient content is over 30% higher than that of ordinary mulberry leaves. Raw materials are naturally cultivated, non-GMO and free of excessive human intervention, ensuring efficacy advantages and quality stability of the extract at the variety and harvest stage level.

1.2 Direct Sourcing from Core Ecological Production Areas: Ensuring Purity and Safety

We select core ecological mulberry leaf production areas in China with fertile soil, sufficient sunlight and no industrial pollution, where irrigation water meets drinking water standards, eliminating risks of pesticide residues and excessive heavy metals at the source. Adopting a "direct production area sourcing + immediate drying" model, mulberry leaves are quickly dehydrated at low temperature after harvesting to avoid mold and oxidative loss of active ingredients, ensuring natural and pure raw materials.

1.3 Incoming Raw Material Testing: Strict Access with Batch-by-Batch Testing

A strict incoming raw material testing standard is established. Each batch must pass multi-dimensional testing before entering production, covering:

- Sensory Testing: No mold, insect infestation, sediment, dead leaves or off-odor; intact and dry leaves
- Physicochemical Testing: Moisture ≤12%, ash ≤10% to ensure storage stability
- Safety Testing: Pesticide residues (BHC, DDT, etc.) ≤0.05mg/kg; heavy metals (Pb ≤1.0mg/kg, As ≤0.5mg/kg, Cd ≤0.1mg/kg, Hg ≤0.2mg/kg), complying with EU EFSA, US FDA and China GB standards
- Activity Testing: Qualified baseline contents of DNJ and total flavonoids to ensure sufficient activity foundation

Unqualified raw materials are rejected to eliminate quality risks at the source and ensure customer confidence.

II. Pretreatment Process: Cleaning and Wall Breaking for Mild Activity Retention

Pretreatment is key to achieving "high dissolution, low impurities and high activity" of mulberry leaf extract, addressing pain points of traditional processes such as low extraction rate, high impurities and dark color. Through refined operations, impurities are removed while thermosensitive active ingredients are protected, paving the way for efficient subsequent extraction.

2.1 Washing and Impurity Removal: Clean and Residue-Free with Mild Treatment

A dual cleaning mode of "high-pressure countercurrent spraying + manual sorting" is adopted. Spraying water temperature is strictly controlled below 25℃ to avoid enzymatic degradation of active ingredients caused by high temperature. Manual sorting removes dead leaves, diseased leaves, branches, sediment and other impurities. Raw materials are quickly drained after washing to prevent loss of effective ingredients from prolonged soaking, ensuring clean and impurity-free raw materials.

2.2 Low-Temperature Shearing and Crushing: Mild Wall Breaking for Improved Dissolution

Drained mulberry leaves enter low-temperature crushing using a low-temperature shearing pulverizer at ≤30℃, with particle size controlled at 20~40 mesh. Mild crushing increases specific surface area and improves subsequent extraction efficiency, while avoiding oxidative degradation of flavonoids, DNJ and other components caused by high-temperature crushing. Crushed materials are stored airtight to reduce contact with air.

III. Core Extraction Process: Multi-Mode Targeted Extraction Balancing Efficiency and Activity

Extraction is the core step for enriching mulberry leaf active ingredients. Abandoning the traditional single water extraction process, we adopt a modern extraction system of "multi-process adaptation and targeted enrichment", flexibly selected based on product application scenarios and customer needs. It ensures extraction efficiency while maximally retaining thermosensitive active ingredients, demonstrating technical professionalism and flexibility.

3.1 Pure Water Extraction Process: Green and Safe for Food-Grade Applications

For scenarios with strict "solvent residue-free" requirements such as foods, beverages and meal replacements, pure water extraction is used with purified water meeting drinking water standards as the medium. Raw material is mixed at a solid-liquid ratio of 1:10~1:15, extraction temperature controlled at 50~60℃, for 2~3 times, 1~1.5 hours each, with low-speed stirring throughout to fully dissolve water-soluble active ingredients (DNJ, mulberry leaf polysaccharides, chlorogenic acid).

Process Advantages: Green and environmentally friendly, no organic solvent residue, high safety, mild odor, suitable for solid beverages, compressed tablets, tea drinks and other food applications.

3.2 Water-Alcohol Dual Extraction Process: Full-Ingredient Enrichment for Enhanced Activity

For high-activity scenarios such as health care products and cosmetics, water-alcohol dual extraction is adopted combining pure water and food-grade ethanol (concentration adjustable 30%~60%). Water-soluble components such as polysaccharides and DNJ are first extracted, followed by alcohol extraction of fat-soluble components such as flavonoids and flavonoid glycosides, achieving full-spectrum active ingredient enrichment. Extraction is performed in a closed temperature-controlled system at 40~50℃; ethanol is recyclable, with solvent residues complying with international standards.

Process Advantages: High extraction efficiency; comprehensive contents of DNJ, total flavonoids and polysaccharides increased by over 40% compared to single water extraction, with more prominent product efficacy, suitable for health care product and cosmetic R&D.

3.3 Modern Assisted Extraction Processes: High-End Empowerment for Technical Barriers

For pharmaceuticals, high-end health care products and cosmetics, a combined process of ultrasonic-assisted extraction + low-temperature negative pressure extraction is used:

- **Ultrasonic-Assisted Extraction**: Mild cell wall breaking via cavitation effect, shortening extraction time by 50% and increasing extraction rate by over 25%, avoiding high-temperature degradation
- **Low-Temperature Negative Pressure Extraction**: Temperature controlled below 40℃, vacuum degree -0.08~-0.09MPa, reducing oxidation and volatilization, with active ingredient retention rate ⩾90% for DNJ, flavonoids, etc.

High-end customized products can adopt supercritical CO_2 extraction or macroporous resin refining, with no solvent residue and extremely high purity. DNJ content can be customized to 3%~5%, suitable for pharmaceutical raw materials and core ingredients of high-end functional skin care products.

IV. Separation and Purification Process: Multi-Stage Refining for High-Purity Quality

Extract contains impurities such as crude fiber, tannins, proteins and pigments, leading to dark color, poor solubility and hygroscopicity. We adopt a multi-stage separation and purification process for precise impurity removal and targeted enrichment, producing high-quality products with high purity, light color, high solubility and mild odor.

4.1 Multi-Stage Filtration and Centrifugation: Basic Impurity Removal for Clarity

Extract is first filtered by plate-and-frame filtration to remove mulberry leaf residue and suspended solids; then high-speed centrifuged (3000~5000r/min) to remove fine impurities,

proteins and colloids, resulting in clear and transparent extract for subsequent purification.

4.2 Membrane Separation Technology: Precise Purification for Quality Improvement

Combined purification using ultrafiltration membrane (10~30KD) + nanofiltration membrane is applied to remove macromolecular impurities, tannins and partial pigments via sieving, while enriching small-molecule active ingredients such as DNJ, flavonoids and polysaccharides. No chemical flocculants or secondary pollution are introduced throughout the process.

Process Advantages: Ash reduced by 30%~50%, product purity increased by 1~3 times, water solubility significantly improved (solubility ⩾95% at 25℃), lighter color and purer odor.

4.3 Decolorization and Refining: Sensory Optimization for Better Compatibility

For cosmetics and high-end food applications, low-temperature food-grade activated carbon adsorption is used below 50℃ to adsorb excess pigments and off-odors. After filtration and carbon removal, the product appears light yellow to off-white with uniform color and mild odor, without affecting the appearance and experience of end products.

4.4 Macroporous Resin Purification (High-End Customization): Targeted Enrichment of High-Activity Ingredients

For high-purity DNJ and high-flavonoid product demands, macroporous resin column chromatography is used for targeted enrichment of target components via gradient elution, removing trace impurities and greatly increasing active ingredient content to meet pharmaceutical-grade and high-standard health care product-grade requirements.

V. Low-Temperature Concentration Process: Mild Temperature Control for Activity Retention

Concentration core is "water removal and concentration increase" while avoiding high-temperature damage to thermosensitive substances such as DNJ and flavonoids. We adopt low-temperature negative pressure dual-effect concentration with mild temperature control throughout to ensure no degradation or oxidation of active ingredients.

- Precise Temperature Control: ⩽55℃ to prevent Maillard reaction and component degradation
- Negative Pressure Sealing: Vacuum degree -0.08~-0.09MPa, reducing volatilization and contamination
- Stable Specific Gravity: Solid content controlled at 15%~25% for batch consistency

- Green and Energy-Saving: Condensed water recycling for environmental protection and low consumption

VI. Drying Process: Graded Adaptation for High-Quality Powder

Drying directly determines the flowability, solubility, color and shelf life of mulberry leaf extract. We adopt graded drying processes based on product positioning, balancing efficiency and quality.

6.1 Spray Drying (Mainstream for Food Grade)

For large-scale production of foods and general health care products, inlet air temperature ≤160℃, outlet air ≤80℃ for instant drying into fine powder. Particle size 80~120 mesh, good flowability and instant solubility, moisture ≤6.0%, shelf life 24 months.

6.2 Vacuum Drying (Small & Medium Batch Customization)

For high-viscosity extracts and customized products, drying at 50~60℃ under vacuum to moisture ≤5.0%. Uniform particle size after pulverization and sieving, with complete activity retention.

6.3 Freeze Drying (High-End Pharmaceutical / Health Care Product Grade)

For pharmaceutical, high-end health care product and cosmetic raw materials, -40℃ pre-freezing + vacuum sublimation drying is adopted, with active ingredient retention rate ≥95%. The product is loose and porous with excellent solubility, light color and no thermal damage, representing optimal quality with shelf life up to 30 months.

6.4 Post-Drying Treatment

After drying, low-temperature pulverization, vibratory sieving (80~120 mesh) and three-dimensional blending for 20~30min ensure uniform ingredients, consistent particle size and strong batch stability.

VII. Quality Control System: Full-Chain Management for Safe and Compliant Control

A full-chain quality control system “from raw material to finished product” is established with Key Control Points (KCP) for real-time monitoring and full-process recording, ensuring products comply with international and domestic standards.

7.1 Full-Process Monitoring of Key Control Points

- Raw Material Access: Batch-by-batch testing, rejection of unqualified materials
- Pretreatment: Monitoring of crushing particle size and washing temperature
- Extraction: Recording of temperature, time, solid-liquid ratio and solvent concentration
- Purification: Strict control of membrane parameters and decolorization conditions
- Concentration & Drying: Real-time monitoring of temperature, vacuum degree and moisture
- Finished Product: Full-item testing before packaging and delivery

7.2 Full-Item Finished Product Testing

Each batch of finished product undergoes full-item testing in accordance with ISO, USP, EP and GB standards, with CMA/CNAS third-party reports available:

- Active Ingredients: DNJ, total flavonoids, total polysaccharides, chlorogenic acid
- Physicochemical Indicators: Moisture, ash, particle size, solubility
- Safety Indicators: Heavy metals, pesticide residues, solvent residues
- Microbiology: Total plate count, molds & yeasts, *Escherichia coli*, *Salmonella*, *Staphylococcus aureus* all qualified

7.3 Testing Equipment and Team

Professional equipment including HPLC, UV, AAS and a microbiological clean laboratory are equipped with a dedicated testing team, ensuring accurate and reliable data for quality assurance.

VIII. Summary of Process Advantages: Technical Empowerment for Core Competitiveness

8.1 Activity Advantage

Full low-temperature process ensures ⩾90% retention rate of DNJ, flavonoids and polysaccharides, ⩾95% for high-end products, with stable and prominent efficacy.

8.2 Quality Advantage

Multi-stage membrane purification + decolorization refining result in light color, high solubility, no off-odor and no impurities, suitable for food, health care product and cosmetic fields.

8.3 Safety Advantage

Green process with no solvent residue; heavy metals, microorganisms and pesticide residues comply with EU, US and Chinese standards, eligible for export customs clearance.

8.4 Stability Advantage

Full-process quality control ensures strong batch consistency and stable long-term supply.

8.5 Flexibility Advantage

Customizable extraction ratio, active ingredient content, particle size and solubility, supporting four-level customization for food / health care product / cosmetic / pharmaceutical grades.

8.6 Environmental Advantage

Recycling of solvents and water resources, resource utilization of by-products, green and sustainable.

IX. Conclusion

The quality of mulberry leaf extract stems from precise control of every process step. Guided by the philosophy of “professionalism, rigor and innovation”, we focus on modern production of mulberry leaf extract, refining each step and strictly adhering to standards from frost-harvested leaf selection to low-temperature dried finished products. We demonstrate technological strength in plant extraction while upholding the core commitment of “natural, safe and high activity”.

We will continue to optimize processes and upgrade quality, providing global customers with more stable, high-quality and valuable mulberry leaf extract to support product innovation and market breakthroughs in functional foods, health care products, cosmetics, pharmaceuticals and other fields.

Appendix: Simplified Flow Chart of Mulberry Leaf Extract Manufacturing Process

