

Fuji Mulberry Root Extract C (FMRE-C)

for hair growth tonic

Summary of Fuji Mulberry Root Extract C

Mulberry root or *sohakuhi* is the root bark of *Morus alba* Linne, a genus of flowering plants in the *Moraceae* family. Fuji Mulberry Root Extract(FMRE) is extracted from mulberry root using our proprietary extraction method.

FMRE-C is prepared from FMRE by solvent replacement to non-alcohol, and by enrichment the extract content to 5 times.



How to use Fuji Mulberry Root Extract C

Composition

INCI name	Composition
MORUS ALBA ROOT EXTRACT	5.5%
PROPANEDIOL	70.0%
POLYGLYCERYL-10 OLEATE	20.0%
WATER	4.5%

Stability

FMRE-C is stable for 3 years at room temperature.

Storage

Store in a hermetically closed container in a cool place protected from direct sunlight. Drastic change in temperature may cause precipitate (because of solubility-lowering). Use product as soon as possible after opening.

Recommended concentration

6% (solid Mulberry Root Extract: 0.33%)

Recommendations when preparing mixtures (at 6%)

It is possible to prescribe with non-ethanol (if you use solubilizer).

If ethanol concentration in final product is 30 to 40% or 70 to 90%, solubilizer is unnecessary. If ethanol concentration is not greater than 20% or 50 to 60%, turbidity or precipitation can be suppressed by using solubilizer.

◆ Formulation example

A. Hair growth agent (ethanol concentration is 0%)

a	DIPOTASSIUM GLYCYRRHIZATE	0.1g
b	FMRE-C	6.0g
c	PROPANEDIOL	3.0g
d	PEG-60 HYDROGENATED CASTOR OIL	1.5g
e	PEG-80 HYDROGENATED CASTOR OIL	1.0g
f	PHENOXYETHANOL	0.5g
g	POLYSORBATE20	0.3g
h	GLYCERYL CAPRYLATE	0.2g
i	WATER	proper quantity

Preparation method

Melt **d** and **e** with heating and mix it with **b**, **c**, **f**, **g** and **h** until dissolved. Apply **a** and disperse into mixture, and then add **i** and mix it until dissolved.

d: PEG-60 HYDROGENATED CASTOR OIL

Ingredient	Polyoxyethylene Hydrogenated Castor Oils
Brand name	NIKKOL HCO-60(Nikko Chemicals Co., Ltd.)
INCI name	PEG-60 HYDROGENATED CASTOR OIL
Target concentration	1.5%
Remarks	This solubilizer listed in Japanese standards of quasi-drug ingredients. It makes these products readily foamable.

e: PEG-80 HYDROGENATED CASTOR OIL

Ingredient	Polyoxyethylene Hydrogenated Castor Oils
Brand name	NIKKOL HCO-80(Nikko Chemicals Co., Ltd.)
INCI name	PEG-80 HYDROGENATED CASTOR OIL
Target concentration	1.0%
Remarks	This solubilizer listed in Japanese standards of quasi-drug ingredients. It makes these products readily foamable.

B. Hair growth agent (ethanol concentration is 50%)

a	DIPOTASSIUM GLYCYRRHIZATE	0.1g
b	FMRE-C	6.0g
c	SOLUBILIZER ※	※
d	ETHANOL	50.0g
e	WATER	proper quantity

Preparation method

Melt **c** with heating and mix it with **b** and **d** until dissolved. Apply **a** and disperse into mixture, and then add **e** and mix it until dissolved.

※Solubilizer: select one

Ingredient	Polyoxyethylene Polyoxypropylene 2-Decyl Tetradecyl Ether
Brand name	NIKKOL PEN-4612 (Nikko Chemicals Co., Ltd.)
INCI name	PPG-6-DECYLTETRADECETH-12
Target concentration	0.2%
Remarks	Less foaming, highly safe solubilizer

Ingredient	Polyoxyethylene Hydrogenated Castor Oils
Brand name	NIKKOL HCO-80 (Nikko Chemicals Co., Ltd.)
INCI name	PEG-80 HYDROGENATED CASTOR OIL
Target concentration	0.5%
Remarks	This solubilizer listed in Japanese standards of quasi-drug ingredients. It makes these products readily foamable.

Ingredient	Polyoxyethylene Hydrogenated Castor Oils
Brand name	NIKKOL HCO-60 (Nikko Chemicals Co., Ltd.)
INCI name	PEG-60 HYDROGENATED CASTOR OIL
Target concentration	0.5%
Remarks	This solubilizer listed in Japanese standards of quasi-drug ingredients. It makes these products readily foamable.

◆ Usage notes

FMRE-C should be dissolved in solubilizer or ethanol firstly and then mixed it with water.
 Prescription examples can't guarantee long-term stability.
 And it doesn't mean approval example as Japanese quasi-drugs.

◆ pH

Recommended pH of final product is 4.2-6.2.
 Discoloration, turbidity or deposit may be produced depending on pH.

◆ Others

Discoloration, turbidity or deposit may be produced depending on compatibility with ingredients in final products.

Application

Hair growth tonic (lotion / gel type)

Category

Cosmetic ingredients

※FMRE-C contains solubilizer, it may occur bubble during you fill it into the bottle.
 When you have trouble of bubble, please try following solutions.

In addition, we recommend to do small-scale filling test.

- ◆ Fill liquid **along inside of bottle.**
- ◆ Control speed of filling not to bubble.
- ◆ Attach movable nozzle to filling machine and **adjust movable nozzle with surface of liquid** or filling under liquid.
- ◆ Filling gradually and control bubble.

Specifications of Fuji Mulberry Root Extract C

Test Items		Specification
Description		Yellow brown liquid, having a characteristic odor.
Identification	Flavonoids	The solutions exhibit a light-red to red color.
	Triterpenoids	Yellow to red-brown color develops at the zone of contact.
Physical and chemical value	pH(1→5)	2.6-4.6
Purity	Heavy metals	≤10 ppm
	Arsenic	≤2 ppm
Content	Sanggenon C	0.080-0.250w/v%

The specification and test method are based on the general rules and the general test method of the Japanese pharmacopoeia except of what is provided for separately.

Contact


 **FUJI SANGYO CO.,LTD.**

1301 Tamura-Cho Marugame Kagawa, 763-8603 JAPAN

Phone: +81-877-25-3111 Fax: +81-877-25-0569

HP: <https://www.fuji-sangyo.co.jp/english/>

Contact: <https://www.fuji-sangyo.co.jp/english/inquiry/>

 Made in Japan

To recover hair growth cycle

FUJI MULBERRY ROOT EXTRACT

For hair growth tonic

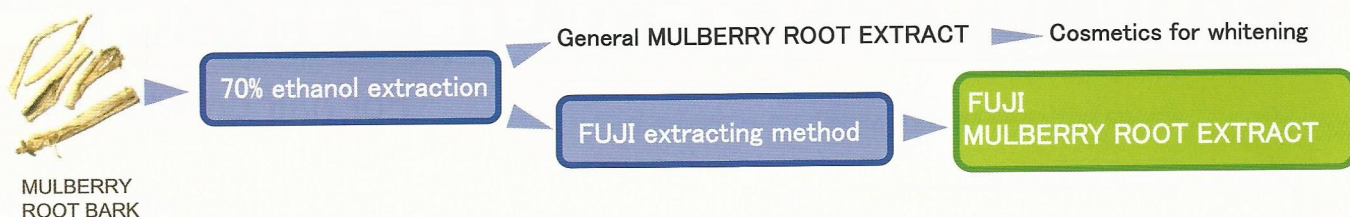
What is MULBERRY ROOT EXTRACT ?

- MULBERRY ROOT EXTRACT has been used in traditional Chinese medicine for
 - the prevention of hypertension
 - Relieving fatigue
 - Tonic property
- It is recently used in cosmetics for whitening effectiveness.

FUJI MULBERRY ROOT EXTRACT

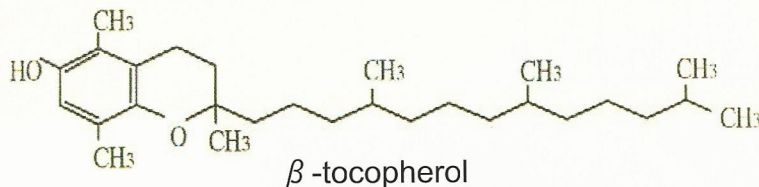
As a result of having tried various extraction method, We found its new effect !

FUJI MULBERRY ROOT EXTRACT recovers hair growth cycle, which causes improvement of thinning hair.



Active ingredients in FUJI MULBERRY ROOT EXTRACT

FUJI MULBERRY ROOT EXTRACT includes β -tocopherol that has been confirmed by the test as one of the active ingredients to recover hair growth cycle.



Moreover we assume that there should be more than 2 other effective ingredients in it but unfortunately we have not been able to find them out at this moment.

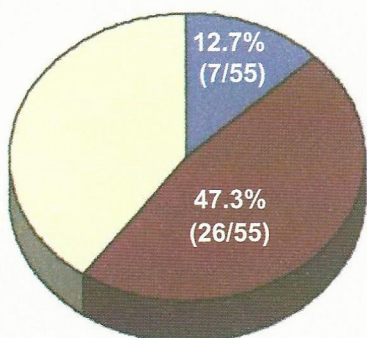
Clinical efficacy

Main hospital : Kochi Red Cross Hospital etc. Subject : Male and female pattern alopecia

Number : Male 55, Female 13 Term : 3~9 months

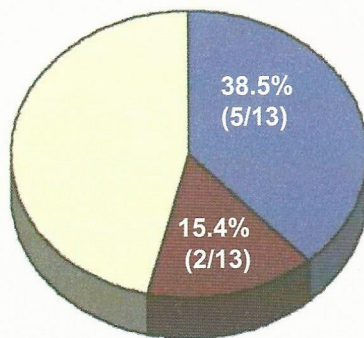
Dose : Twice a day (For a dose : 2mL)

■ Prominent improvement
■ Improvement



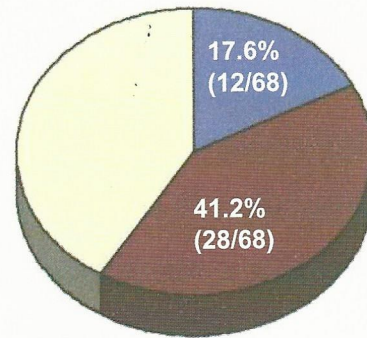
Male pattern alopecia

**60.0% (33/55)
improved**



Female pattern alopecia

**53.8% (7/13)
improved**



Total

**58.8% (40/68)
improved**

Prominent improvement of the human clinical test

Prominent improvement is defined that more than 50% of thinning hair is improved comparing with before testing.

These are the pictures of the prominent improvement of the human clinical test.

Age39 male

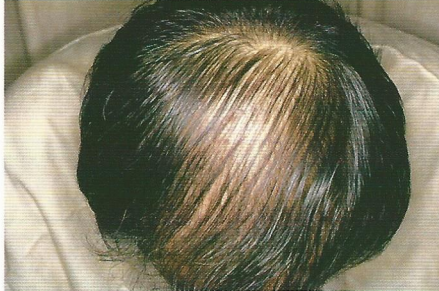


Before treatment

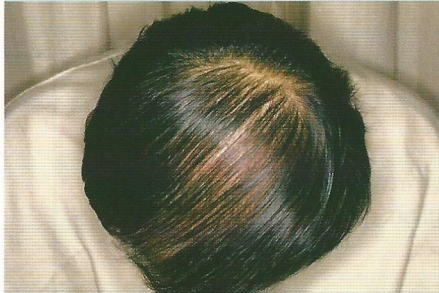


After treatment for 6 months

Age56 male



Before treatment



After treatment for 4 months

Age63 female



Before treatment



After treatment for 7 months

Age65 female

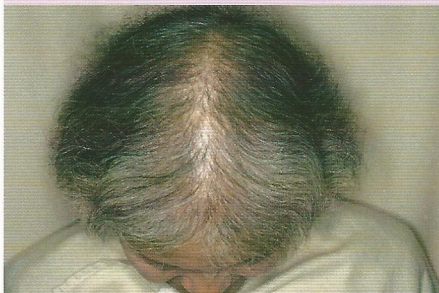


Before treatment



After treatment for 7 months

Age69 female



Before treatment



After treatment for 7 months

Age77 female



Before treatment



After treatment for 6 months

Material information

Ingredient of FUJI MULBERRY ROOT EXTRACT		
MORUS ALBA ROOT EXTRACT	ALCOHOL	WATER

Aspect	Verification test		
Yellow brown colored and transparent liquid with peculiar smell. Metallic taste.	Flavonoids	Triterpenoid	Mulberry Root Extract
	The liquid presents blight red~red	Interface presents dark reddish-brown	The neighborhood of 0.28(yellow~yellowish-brown) The neighborhood of 0.35(yellow~yellowish-brown) The neighborhood of 0.38(yellow~yellowish-brown)

Value of merit			Purity test	
pH	Specific gravity	Alcohol number	Heavy metals	Arsenic
4.0~5.9	d_{20}^{20} 0.82~0.92	More than 7.5	Max. 10ppm	Max. 2ppm

Component content			
Residue on evaporation	Residue on ignition	Extractive content n-hexaneextract	SanggenonC content
1.0~1.2%	Max. 0.1%	12~36%	0.16~0.50mg/mL

Product name	Aspect
FUJI MULBERRY ROOT EXTRACT	Liquid

40 degrees C for 6 months, room temperature for 3 years –
Preserve the quality

For storage : You should store it in the bottle with airtight stopper in a cool and dark place and keep it away from fire and heat resource.

Manufacturer

 **FUJI SANGYO Co., Ltd.**

1301 Tamura-cho, Marugame-shi, Kagawa 763-8603 JAPAN

URL: <http://www.fuji-sangyo.co.jp/english/>

E-mail: mori@fuji-sangyo.co.jp

MCB

Management & Consulting

Sourcing & Distribution

Marie-Christine Bouju

Managing Director

Route de Clémenty 37
CH-1260 Nyon, Switzerland
mcbconsulting@bluewin.ch

Tel +41 22 362 20 00
Fax +41 22 362 44 50
Mob +41 79 340 08 65

Memo