

Hwangchil (Ginseng Tree)

Dendropanax



The scientific name of the ginseng tree (Hwangchil) is *Dendropanax Morbifera* Lev. There are about 75 species of oak trees in East Asia, the Malay Peninsula, Central and South America, and one in Korea.

The Greek Translation

- dendro: tree
- panax: cure-all

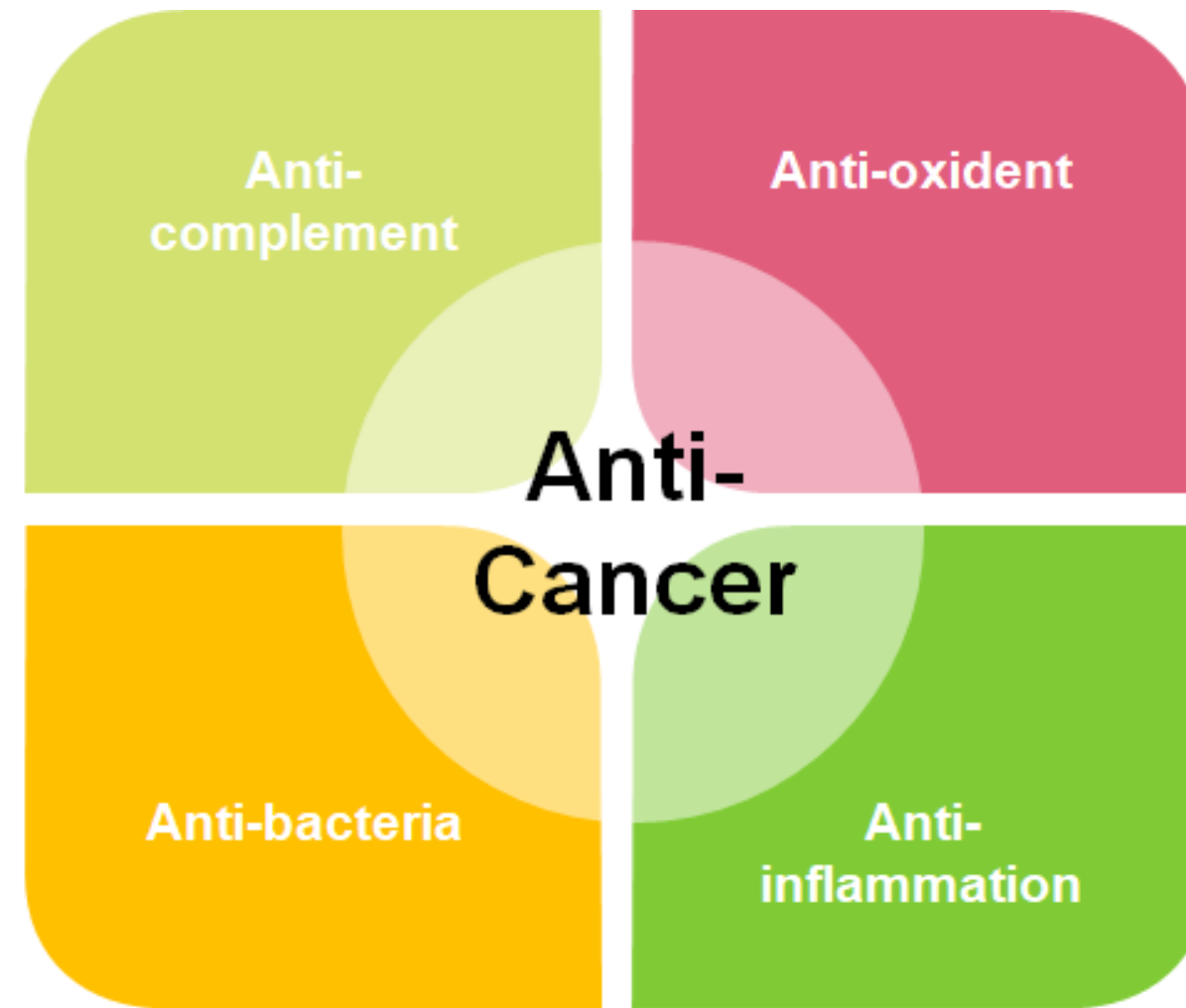


The Korean name Hwangchil originates from the yellow liquid which seeps like lacquer when the bark is damaged.

This yellow liquid is used in paints and varnishes. Objects which are coated with this liquid can last 10,000 years. The Lacquer tree which is also cultivated for its sap and used in the same capacity to coat objects lasts up to only 1000 years.

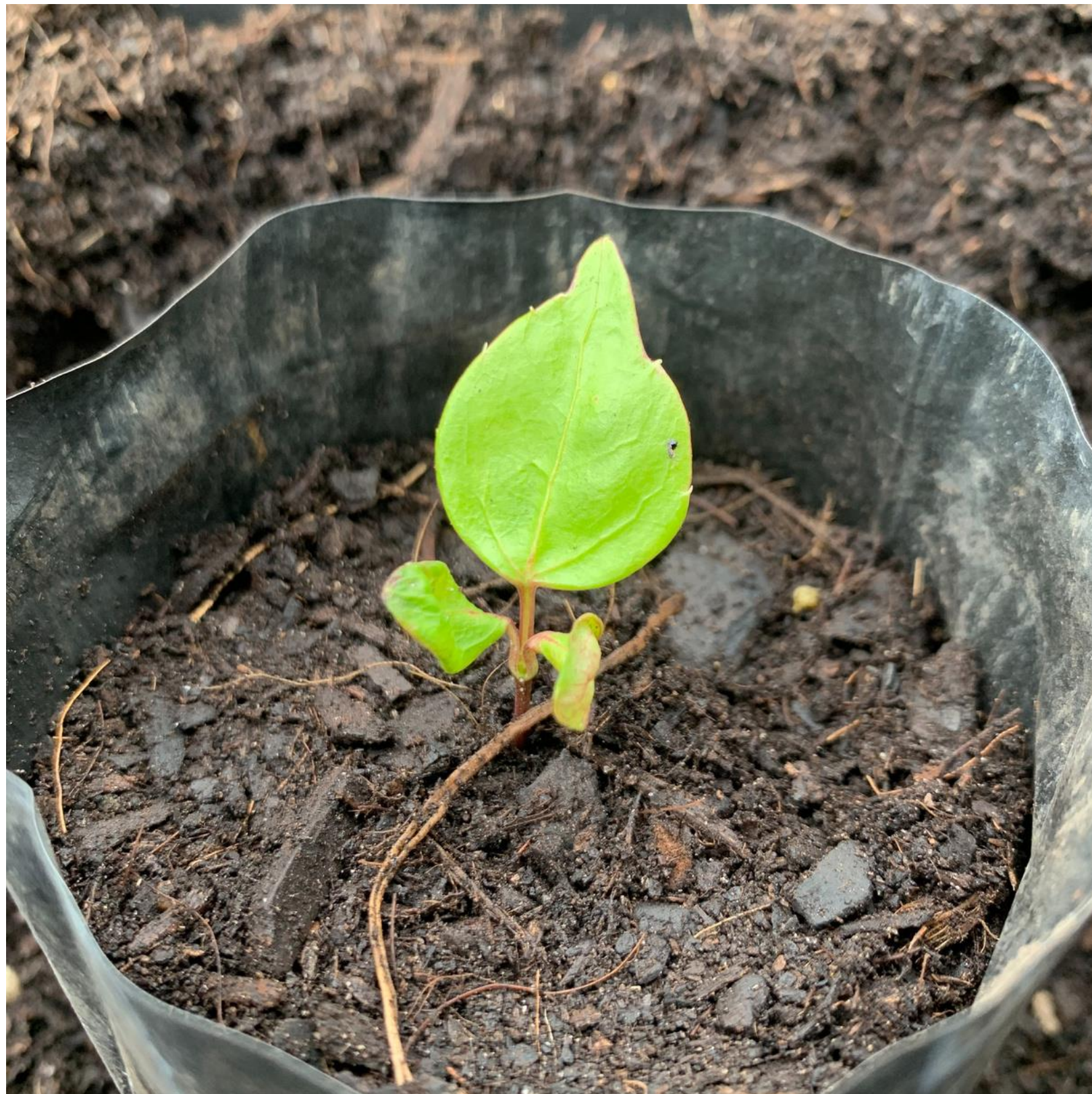


Benefits & Medicinal Properties



An endemic species in Korea is best known
as a folk medicine.

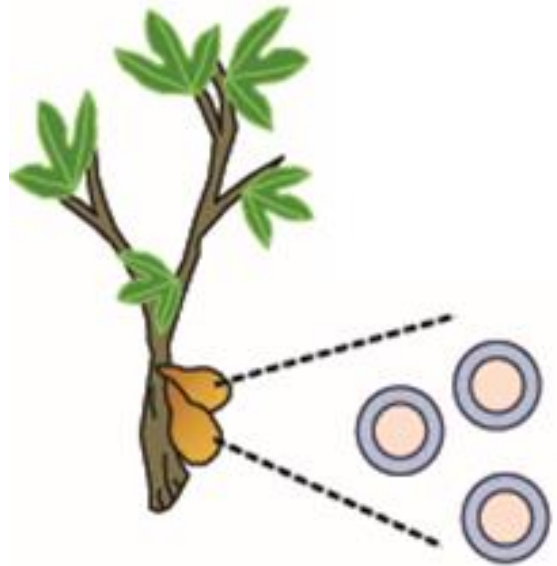
The effect of *Dendropanax morbifera*



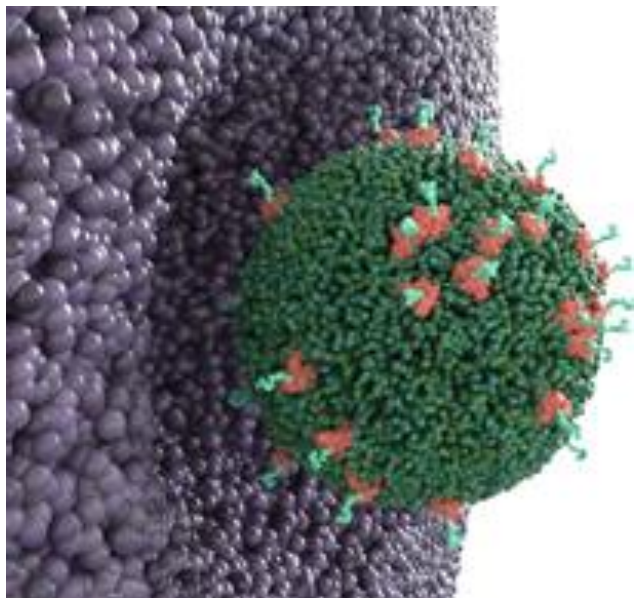
D. Morbifera, an endemic species in Korea is best known as a folk medicine for the treatment of anti-oxidant, anti-inflammation, anti-bacterial, anti-diabetic, anti-cancer, anti-atherogenic activities.

What is nanovesicles from *D. morbifera*?

Dendropanax morbifera



We obtained “Naturally occurring nano-sized Evs” from sap, leaves and stems of *D. morbifera*”



The active uptake of nanovesicles into cells has occurred.

Registration for food raw materials from *D.morbifera* “sap” diluent in KFDA

황칠수액 희석액의 한시적 기준·규격 검토결과 보고서

(신소재식품과)

1. 검토결과

- (인정·사용현황) 황칠수액 희석액은 국내·외에서 식품원료로 인정·사용되는 사례는 없음
- (원료의 특성) 탄수화물(0.084%), 조단백질(0.112%), 조지방(0.104%), 수분(99.7%)으로 구성되어 있음. 중금속 시험결과(납, 비소, 카드뮴, 수은) 불검출이었으며, 일반세균 및 대장균군 시험 결과 불검출이었음
- (안전성) 안전성 관련 논문 등을 검토한 결과 특이사항이 없었고, 독성시험 결과에서도 이상반응은 없었음. 섭취량을 평가한 결과, 업체에서 제안한 황칠수액 희석액의 사용대상 식품과 사용량 범위 내에서 안전성이 확인되었음

2. 인정원료 및 요건

- 가. 인정번호 : 식품원료 한시기준 제2018-4호(2018. 5. 3.)
- 나. 인정업체 : 국제뇌교육종합대학원대학교
- 다. 원료명 : 황칠수액 희석액(학명 : *Dendropanax morbiferus* H.Lév)

‘Initial’ registration of raw food materials in KFDA in May 2018!

The anticancer effects of *D.morbifera*



Hwangchil is proven to effectively prevent cancer cells from proliferating by

inducing suicide of cancer cells such as lung, liver, breast and stomach, and leukaemia.

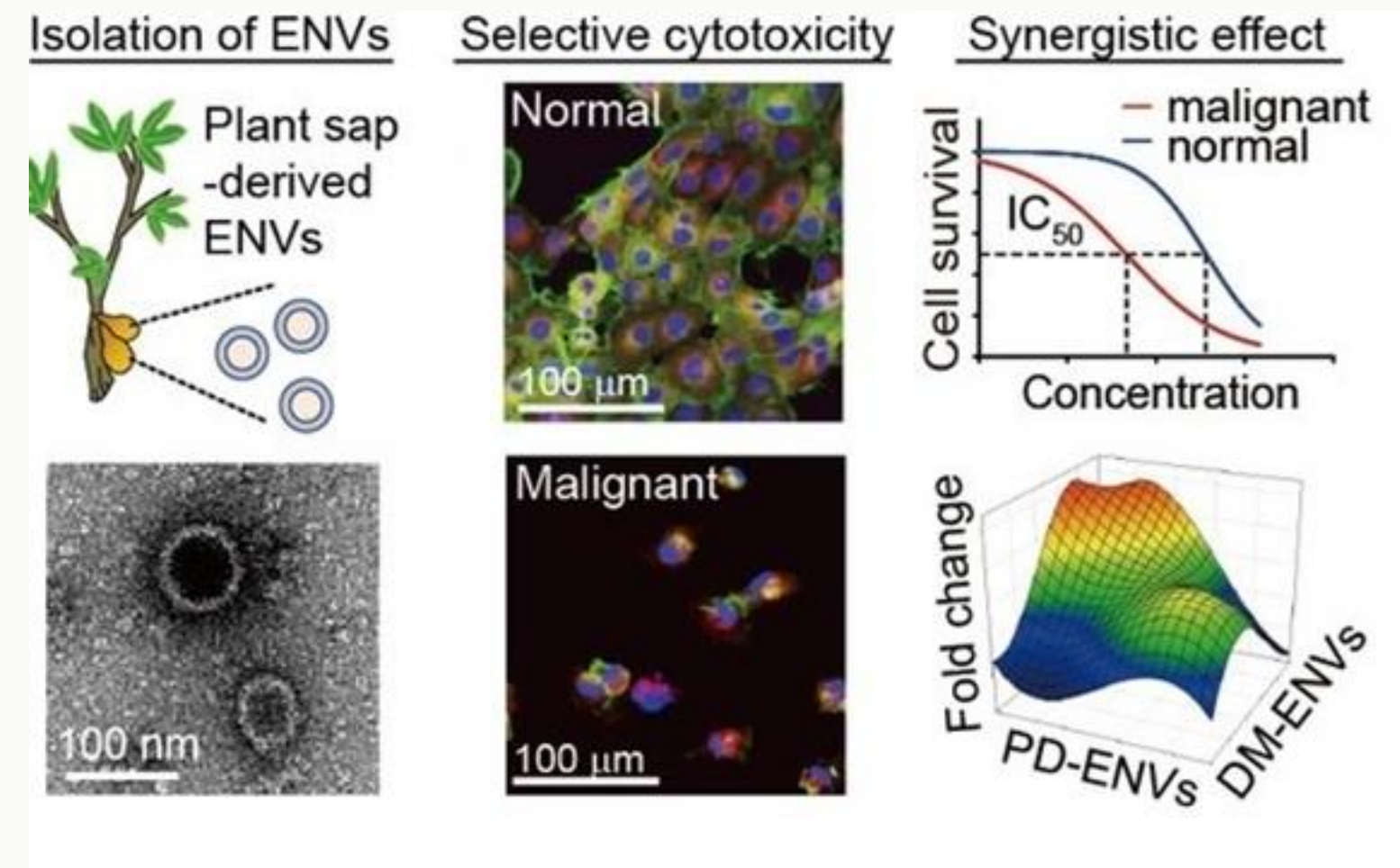
The result of anticancer effects from *D.morbifera* “sap”-derived EVs

J Funct Biomater. 2020 Apr 2;11(2). pii: E22. doi: 10.3390/jfb11020022.

Cytotoxic Effects of Plant Sap-Derived Extracellular Vesicles on Various Tumor Cell Types.

Kim K¹, Yoo HJ¹, Jung JH², Lee R¹, Hyun JK³, Park JH², Na D⁴, Yeon JH¹.

“Dendropanax-derived EVs shows anticancer effects to malignant breast tumour cells but not to normal cells.”

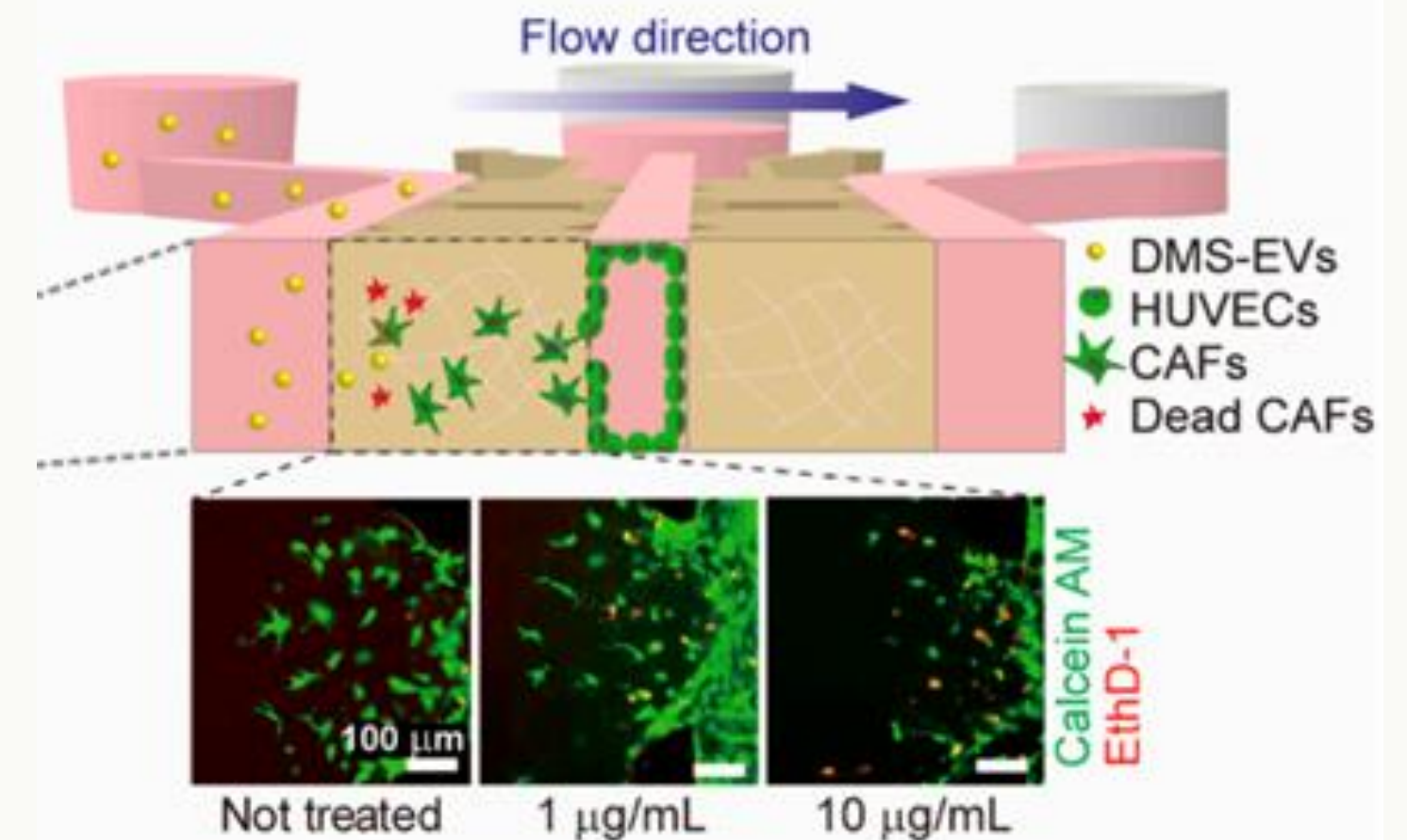
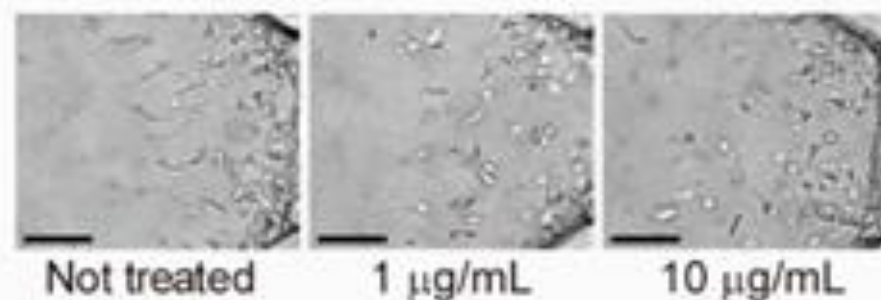
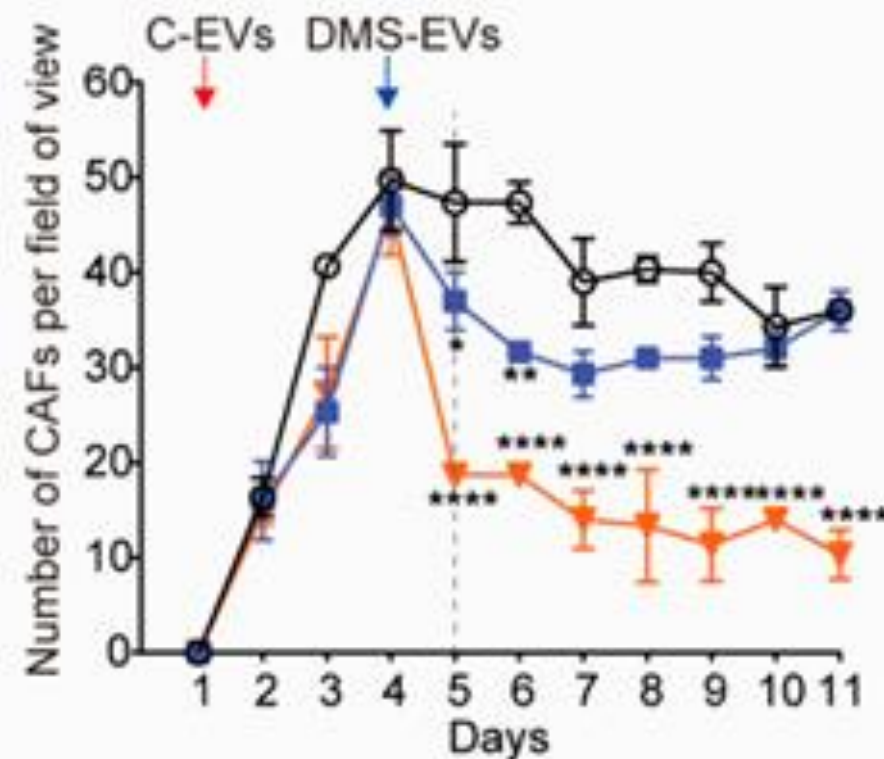


The result of anti-metastasis effects from *D.morbifera* “sap”-derived EVs

Article

Anti-Metastatic Effects of Plant Sap-Derived Extracellular Vesicles in a 3D Microfluidic Cancer Metastasis Model

Kimin Kim¹, Jik-Han Jung², Hye Ju Yoo¹, Jae-Kyung Hyun³, Ji-Ho Park², Dokyun Na⁴ and Ju Hun Yeon^{1,*}



“Dendropanax-derived EVs shows anticancer effects to prevent cancer-associated fibroblasts, which are important mediators of cancer metastasis.”



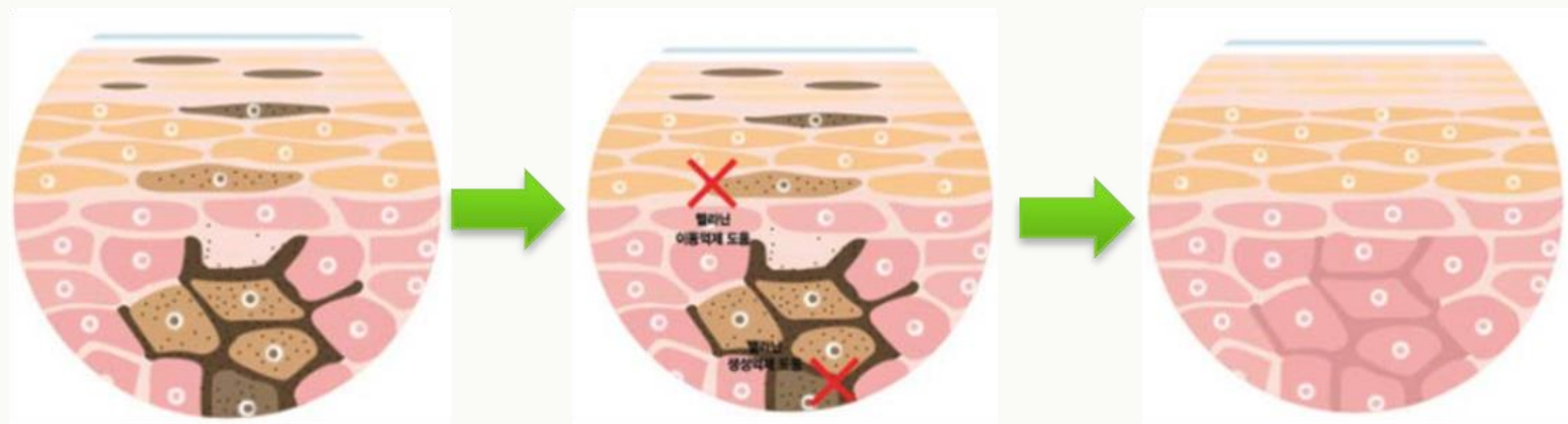
The strong antibacterial action prevents harmful bacteria from entering the human body, promotes the growth of immune cells, improves overall immunity, promotes the creation and enhancement of immune cells due to the abundance of saponin which can also be found in Ginseng.



Earth Village, New Zealand

Anti-melanogenic effects.

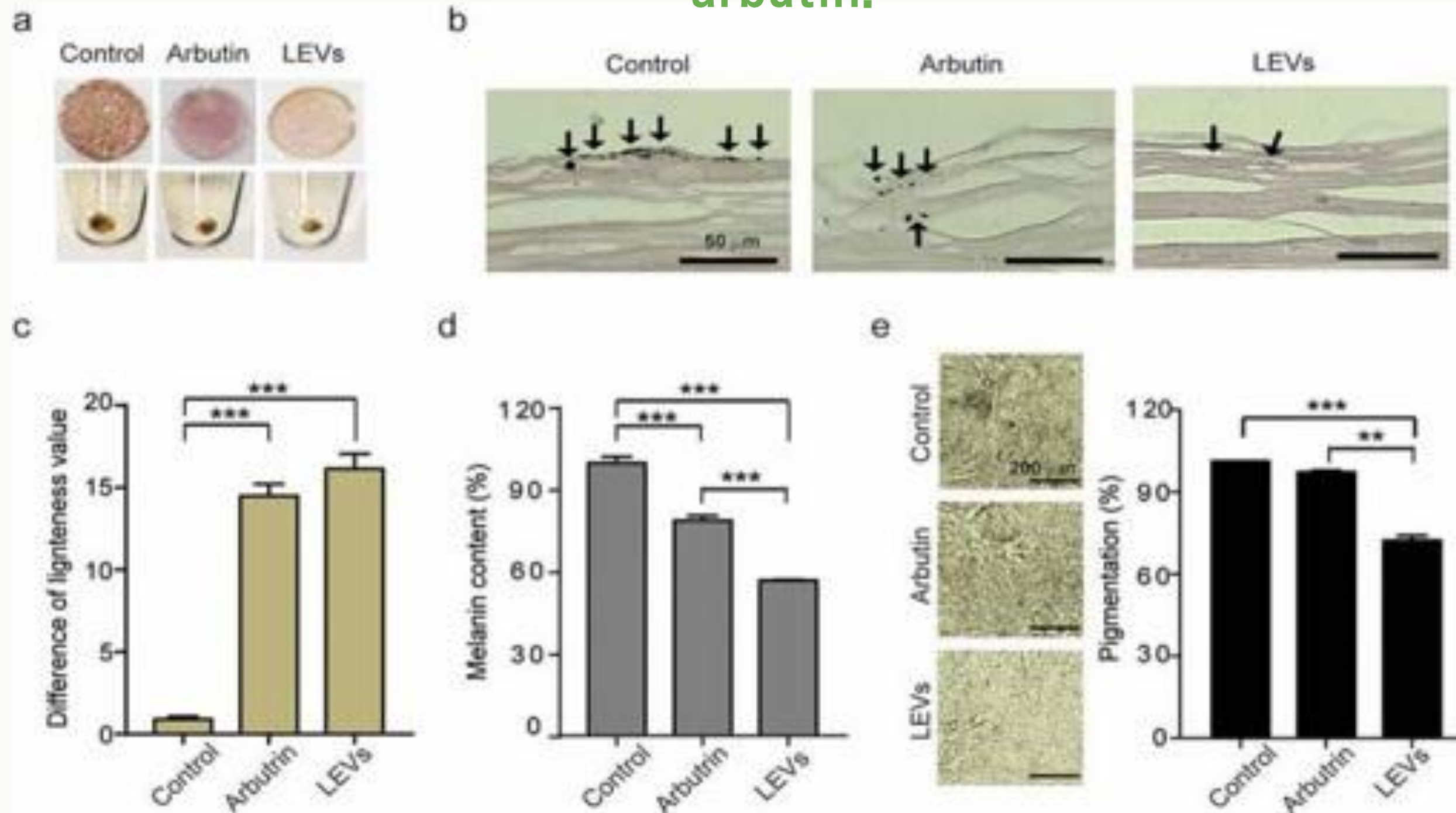
D.morbifera leaves(LEVs) and stems(SEVs) - derived extracellular vesicles exerted a stronger inhibitory effect on melanin production than conventional chemical compound.



ü Helps to brighten skin tone by suppressing melanin production

Brightening effect of LEVs on human skin tissue

LEVs exerted a stronger inhibitory effect on melanin production than arbutin.



Registration

Initially registered

D.morbifera “sap diluent” for raw food materials in the Ministry of Food and Drug Safety (MFDS) in May 2018.



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Patent1

Cancer treatment from
D.morbifera “sap”-derived EVs

- Filing Date: 14.Dec.2018
- Registration Date: 07.Oct.2019



Patent 2
Brightening effects
from D.morbifera
“leaves”-derived EVs

- Filing Date:
07.Nov.2018
- Registration Date:
06.May.2019



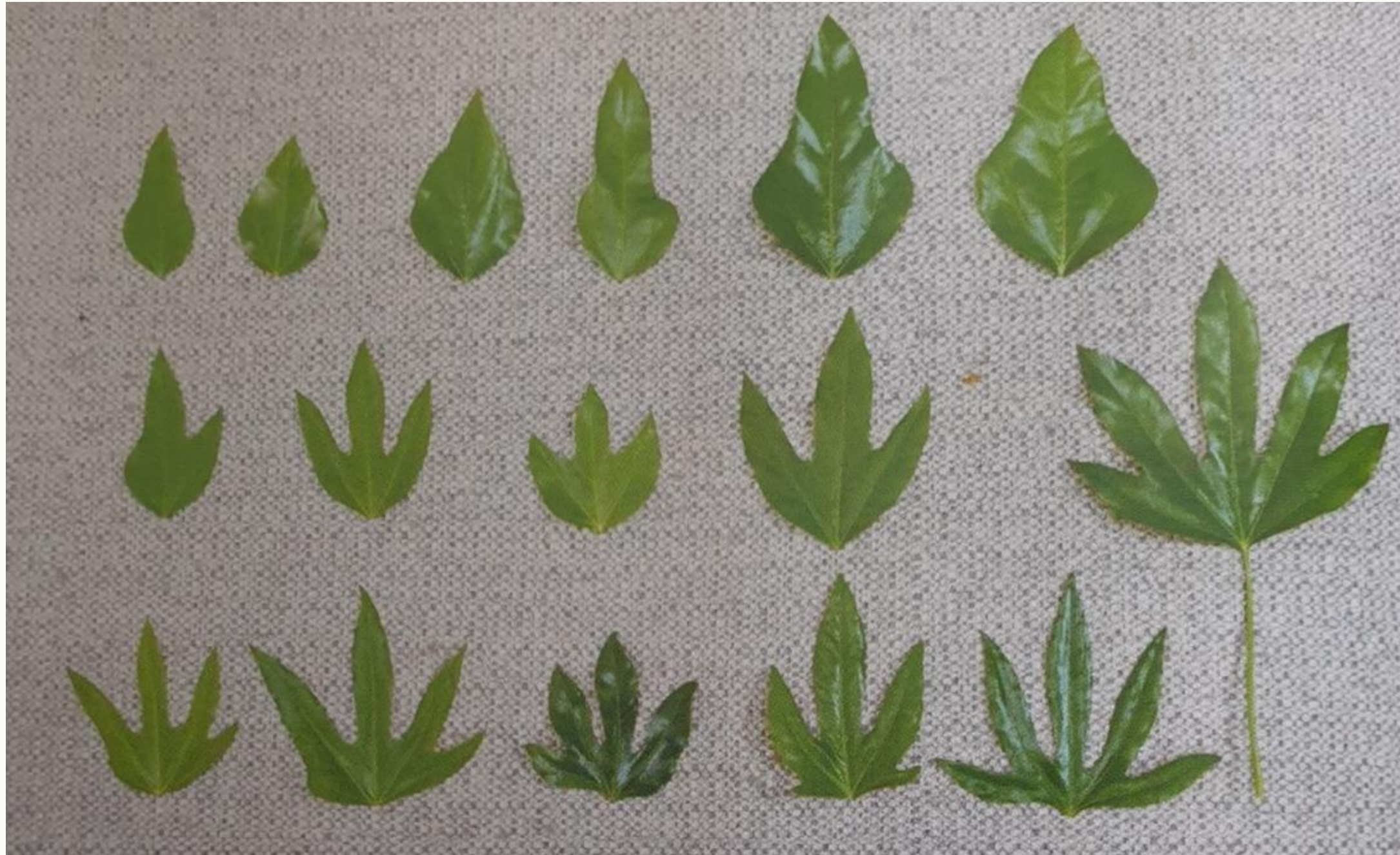


How to grow Hwangchil

Indoor plant.



Hwangchil Tree Leaves



Germinating Hwangchil Seeds







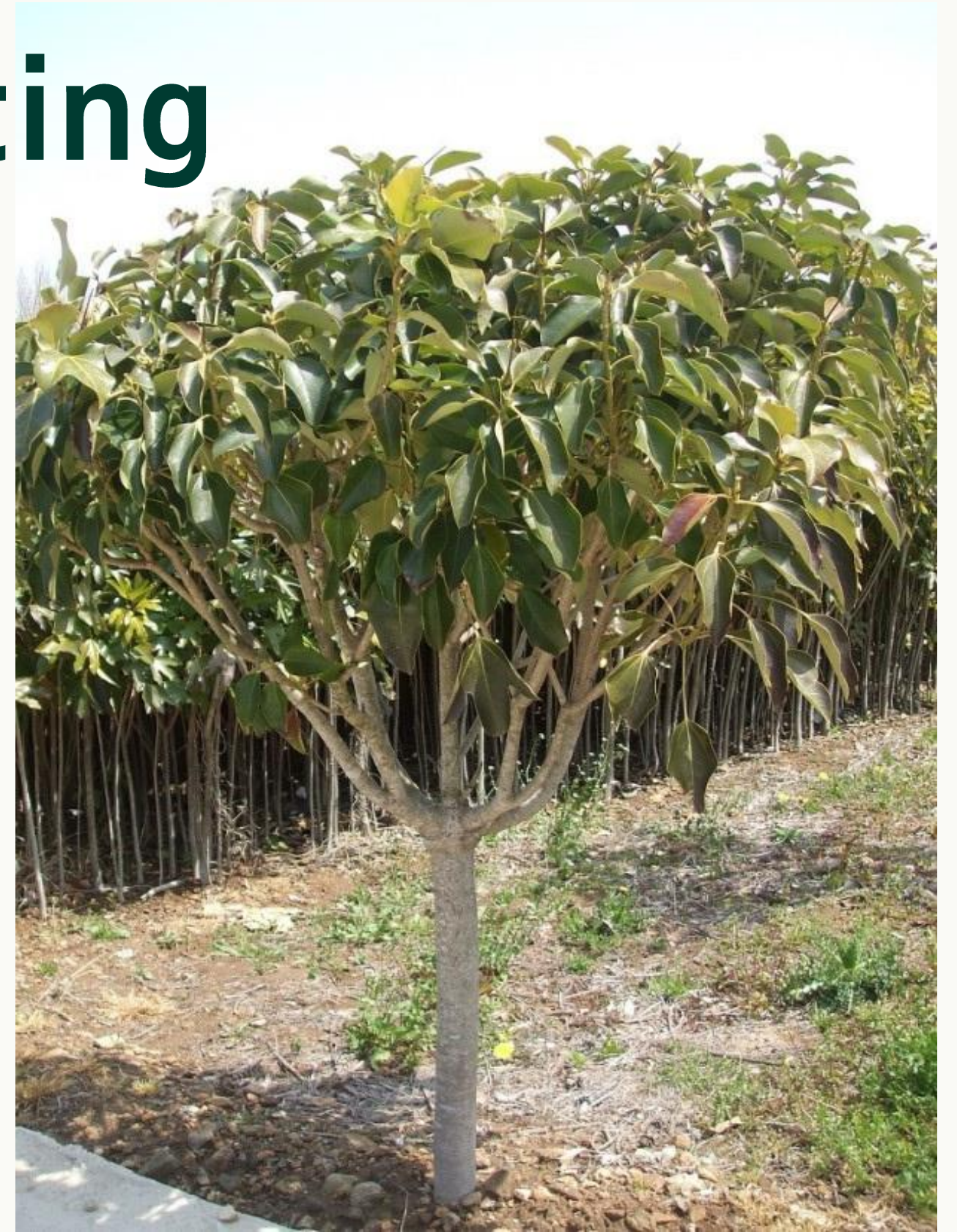
Growing Saplings



Flowers and fruits



Hwangchil Tree Planting



Hwangchil Tree Planting



- 1. Find free draining soil**
- 2. Ocean breeze**
- 3. Plant 2 meters apart**
- 4. Wait 2-3 years**
- 5. Keep the height low for picking leaves**
- 6. Pick leaves to make products**

The Connection to Aotearoa

Pseudopanax arboreus
(whauwhaupaku, fivefinger)



The Hwangchil tree is a close relative of the native New Zealand *Pseudopanax arboreus*, otherwise known as The Five Finger Tree.

Before importing seeds from Korea we undertook some research in conjunction with Callaghan Innovation to understand the medicinal properties of *Pseudopanax arboreus* and *Schefflera digitata*.

. The results from this testing suggested that the *Pseudopanax/Schefflera* has anti-bacterial/fungal properties but at levels that only benefit themselves.

Pseudopanax arboreus

(whauwhaupaku, fivefinger)





Pseudopanax arboreus
(whauwhaupaku, fivefinger)



Schefflera digitata
(Seven finger trees)

Microbial Inhibition Testing of Extracts from Two New Zealand Panax species; *Pseudopanax arboreus* and *Schefflera digitata*.

Report on results for Earth Citizens Organisation.

24/Aug/2018

Authors; Stephen Bloor, Rosemary Webby and Shuguang Zhang.

Earth Citizens Organisation is interested in comparing extracts of New Zealand examples of plants in the “Panax” family, and to eventually compare these to the Korean *Dendropanax* extracts. Leaf materials from two common NZ “Panax” species (Family Araliaceae) have been collected, extracted and tested against 3 microorganisms for general antibiotic activities.

1.Collection and extraction of plant materials

Schefflera digitata leaves were collected from Rishworth Reserve, Lower Hutt on 6.8.2018.
Pseudopanax arboreus leaves were collected from The Mother Aubert Garden at Callaghan Innovation, Lower Hutt, on the same day.

The leaves and petioles were ground using a Waring Blender before extraction. 20g ground plant material from each plant was extracted either with 70:30 (vol./vol.) ethanol: water or with 100% absolute ethanol. Extraction was carried out for 2 hours, followed by a further 60min extraction with fresh solvent. The combined solvent extracts from each plant/solvent combination were dried on a rotary evaporator followed by freeze-drying. The freeze-dried weights (d.w.) are as follows:

S. digitata 70:30 ethanol:water, 20g fresh weight gave 1.51g d.w.

S. digitata 100% ethanol, 20g fresh weight gave 0.85g d.w.

P. arboreus 70:30 ethanol:water, 20g gave 1.73g d.w.

P. arboreus 100% ethanol, 20g gave 1.36g d.w.

The extracts were made to 100mg d.w. extract/ml. The 100% ethanol extracted material was made up in ethanol and the 70:30 material was re-dissolved in 50:50 ethanol water. These samples were used directly for the antimicrobial assays.

2. Antimicrobial testing

a. Microorganisms and media used

Table 1. Microorganisms and media used.

Microorganism	Medium	incubation
<i>Staphylococcus aureus</i> IRL-580 (ATCC 25923)	Tryptic Soy Agar and broth (TSA and TSB)	37°C, 16-24 h
<i>Trichophyton mentagrophytes</i> IRL-582 (ATCC 9533)	Sabouraud dextrose agar (SDA)	25°C, 3-5 days
<i>Candida albicans</i> IRL-17 (NZRM 3394)	Brain heart infusion (BHI) agar and broth	37°C, 16-24 h

b. Antimicrobial assays

Cultures and agar plates. The bacterium *S. aureus* and yeast *C. albicans* were inoculated in STB and BHI broth respectively and incubated O/N at 37 °C. The filamentous fungus *T. mentogrophytes* was streaked on an SDA plate and incubated at 25°C for 4 days to obtain a lawn of mycelia. After its growth, a slice of its mycelia was cut off from the agar plate with a sterilized scalpel, ground with a mini pestle in a sterile Eppendorf tube and then resuspended in 300-400 µl of sterile Milli Q water.

The above broth cultures and ground mycelial suspension were streaked with a sterile cotton swab onto their relevant agar plates.

Disc preparation. 12.5, 25, 50 and 100 µl in total of each sample were loaded onto individual 13mm-diameter sterile paper discs. For those volumes larger than 25 µl, 25 µl was loaded onto the discs, evaporated for 2-3 min in biohazard hood and then another 25 µl was loaded. This was repeated until the final required volumes reached. Duplicate discs were prepared for each volume. Discs were then placed onto the streaked agar plates and the plates were incubated at 37°C for the bacterium and yeast and 25°C for the filamentous fungus. 70% and 100% ethanol were loaded onto discs, evaporated and then used as negative controls. Commercial 10 µg/disc tobramycin and 10 µg/disc ampicillin were used as the positive controls for the bacterium. 30 µg/disc Paramycin was used as the positive control for the yeast and filamentous fungus.

3. Results

a. Testing vs. *Staphylococcus aureus* and *Candida albicans*

None of the four extracts showed observed inhibition against *S. aureus* and *C. albicans* as shown in Figure 1.

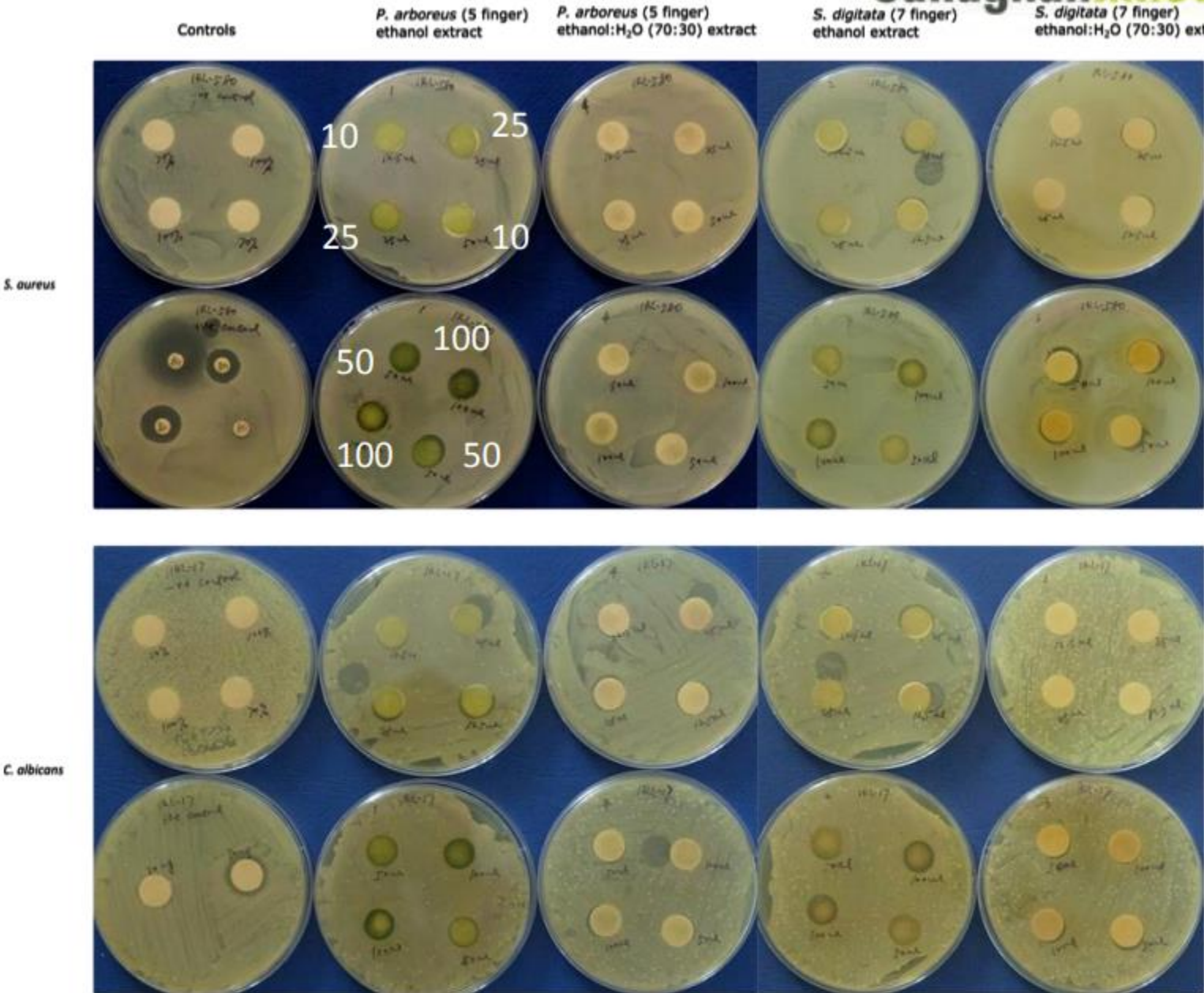


Figure 1. Photographs of test plates after incubation, *S. aureus* (top row) and *C. albicans* (bottom row).

b. Antifungal testing vs *T. mentagrophytes*

Both extracts showed some activity in this assay. Only the *Pseudopanax* ethanolic extract showed weak activity while the *Schefflera* extracts were both active at all concentrations.

the ethanol extract of *P. arboreus*, only the load with a volume of 100 µl showed inhibition against the growth of *T. mentagrophytes*. None of the loads in four volumes (12.5 – 100 µl) of the ethanol:water extract showed inhibition against the growth of *T. mentagrophytes*.

All the loads in four volumes (12.5 – 100 µl) of the ethanol and ethanol:water extracts of *S. digitata* showed obvious inhibition against the growth of *T. mentagrophytes*. These results are shown in Figure 2 and Table 2.

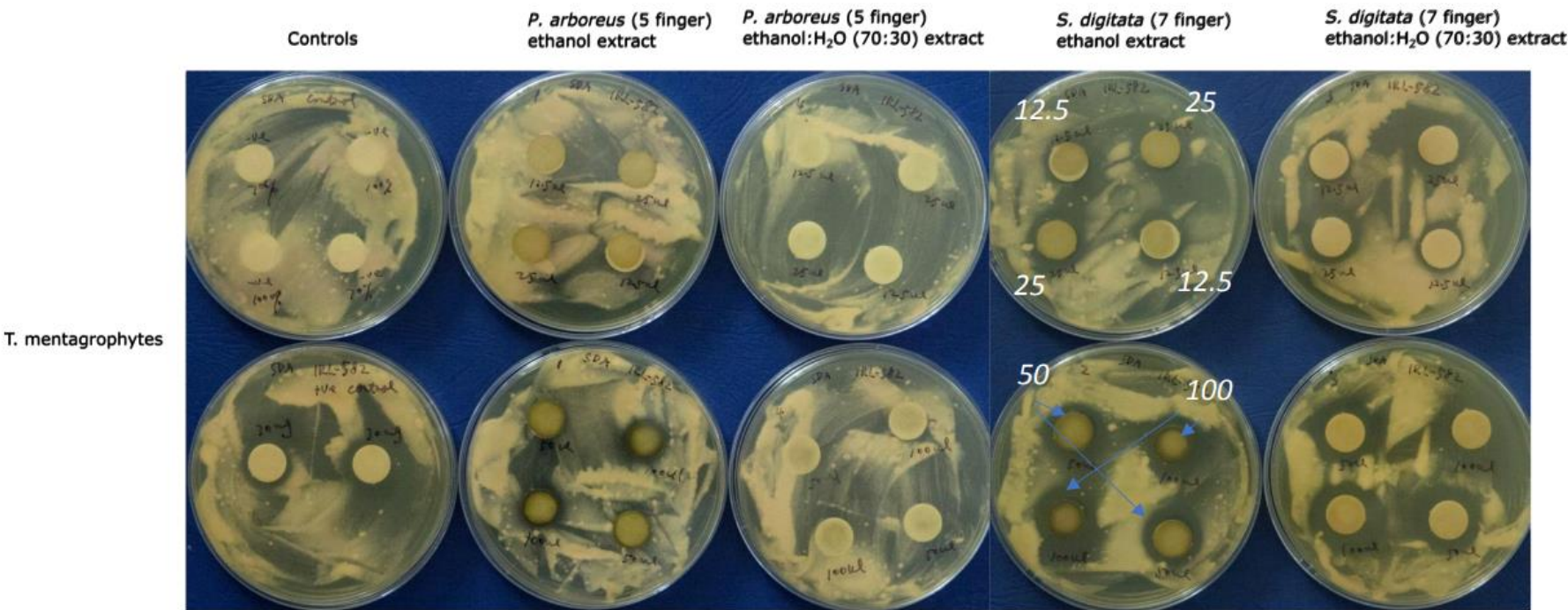


Figure 2. Antifungal assay plates for extracts vs. *T. mentagrophytes*

Table 2. Results from antifungal testing.

		Volumes of loaded samples (μl)							
Sample		12.5		25		50		100	
<i>P. arboreus</i>	ethanol	-	-	-	-	-	-	14	15
<i>P. arboreus</i>	ethanol:water 70:30	-	-	-	-	-	-	-	-
<i>S. digitata</i>	ethanol	17	17	19	19	20	20	21	22
<i>S. digitata</i>	ethanol:water 70:30	15	15	18	18	20	21	21	22
Negative control		disc with 100 ml 100% ethanol, evaporated				disc with 100 ml 70% ethanol in water, evaporated			
		-		-		-		-	
Positive control (30 μg paramycin)		17				17			
Diameter of blank discs		13							

Note: the numbers (except those of the loaded volumes) in the table are diameters (mm) of clear zones or the blank discs.

Where is a good place to grow Hwangchil?



Hwangchil prefer to be around the ocean water, wind and on slopes.

They grow well in warm weather with free-draining soil.

They don't require a lot of water or management.

They can grow to be over 300 years old and become quite large trees.



Dendropanax Morbiferum
(Hwangchil Tree, Ginsaeng Tree)



Dendropanax Morbiferum

(Hwangchil Tree, Ginsaeng Tree)
Fully grown tree, 15-20 meter tall
Some trees live up to 30 years.



Hwangchil Products

Food Product

Tea, Pickles, Rice, Soup

Cosmetic Product

Toner, Serum, Cream



Hwangchil Tea

Hwangchil Pickles



Plant Exosome Technology

A global biotech venture company that develops cosmetics, foods, and pharmaceutical ingredients based on plant exosome technology



Well-aging Exobio Inc.

Well-aging Exobio Inc.

Exosome nanoparticles from Hwangchil tree leaves are quickly absorbed, forming a moisturizing layer to nourish and maintain smooth skin.

Fragrance-free and dermatologist tested for sensitive skin.

Vegan, EWG green grade, U.S FDA verified.



Save 20% with coupon

EXODROP Balance Recovery Toner |
Clarifying&Moisturizing | Ginseng Tree...

★★★★★ 20

\$43⁰⁰ (\$10.62/Fl Oz)

See buying options



Save 20% with coupon

EXODROP Hydro Recovery Serum |
Moisturizing&Regenerating | Ginseng tree...

★★★★★ 28

\$52⁰⁰ (\$38.52/Fl Oz)

See buying options



Save 20% with coupon

EXODROP Silk Recovery Cream |
Moisturizing&Nourishing | Ginseng tree...

★★★★★ 21

\$65⁰⁰ (\$38.46/Fl Oz)

See buying options



EXODROP Skincare Set | 100% Vegan |
Clarifying&Moisturizing&Nourishing |...

\$160⁰⁰

See buying options



Containing ginseng tree exosomes

Brightening and wrinkle improvement functional cream

Fragrance-free and dermatologist tested.

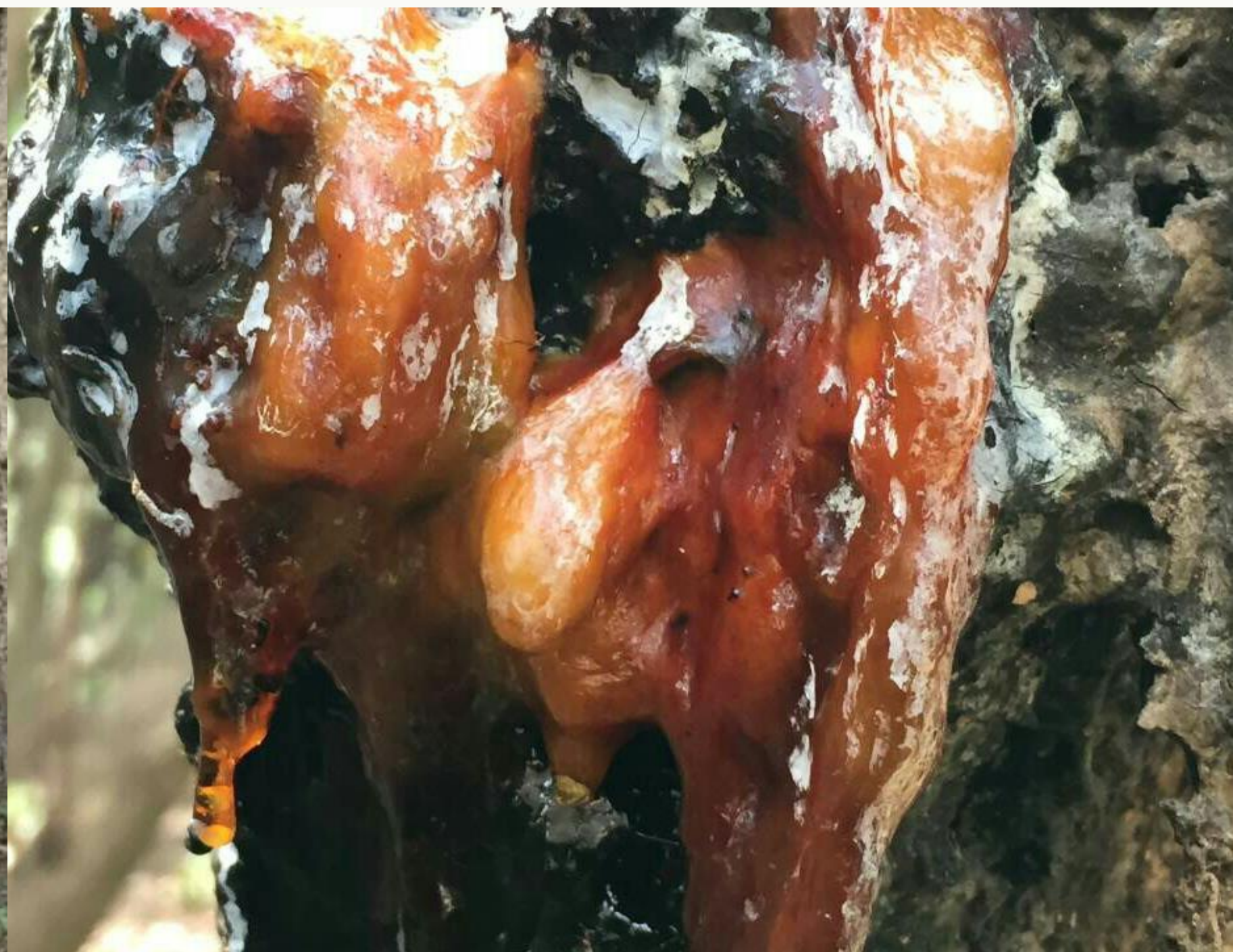
Containing ginseng tree sap oil

Soothing dry skin, improving wrinkles and softening the skin

100% essential oil blend for better sleep



The Founder, Ilchi Lee





Opportunity is yours.
Thank you.