

Beauty effect raw material made from mature okra seeds

Mature Okra Seed Extract



- ☐ Sustainable raw material made from disposal seeds
- ☐ Maintaining skin elasticity
- ☐ Improving the quality of sleep



Birth story

MOTTAINAI (Too good to waste) ...

Respecting resources and their value while also reducing waste. Its origins derive from two words—mottai (importance or sanctity) and nai (lack of something).



● Okra

Okra (Scientific name: *Abelmoschus esculentus*) is a plant and country of origin is northeastern Africa. The main plant area in Japan is Kagoshima. Ibusuki (a city in Kagoshima) produces 80% of okra seeds grown in Kagoshima. It is popular as a food ingredient in Japan.



● Product value could be "zero" in just one day

Okra grows quickly, so if you miss the edible okra harvest time, okra will mature and too hard to eat. In okra cultivation, mature okra is unutilized and discarded.



● Beauty effect of mature okra seeds

After extensive research on unutilized mature okra seeds, it was found that they have several functionalities. We have developed an extract with standardized ingredient so that it can be easily used as food.





To maintain skin elasticity

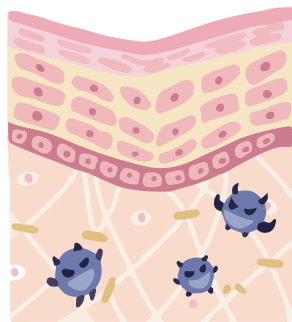
Inhibiting fibroblast-derived elastase and is expected to be effective in maintaining skin elasticity



2 types of elastases

(fibroblast-derived elastase and neutrophil-derived elastase)

Elastase cause of the decrease in skin elasticity. "Mature Okra Seed Extract" inhibits fibroblast-derived elastase and maintains skin elasticity. The elasticity of the skin is maintained by collagen and elastin in the dermis (the layer behind the skin). Elastin will be decreased because of aging, ultraviolet light, active oxygen, stress, elastase (elastin-degrading enzyme) and etc. There are two types of elastases, one is fibroblast-derived elastase which is activated by aging and daily ultraviolet light, and the other is neutrophil-derived elastase which is activated mainly by strong ultraviolet light. Neutrophil-derived elastase can be prevented by sunscreen. "Mature Okra Seed Extract" is effective for fibroblast-derived elastase.



(Image) Activates elastase and decrease elastin. It causes wrinkles.

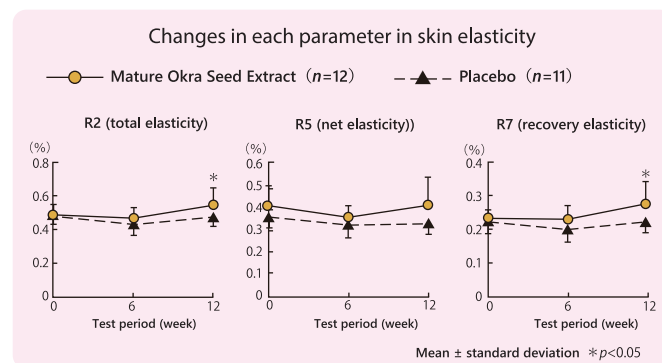
Clinical trial

Subjects: 23 males and females who were concerned about skin elasticity

Sample: Mature Okra Seed Extract 300mg/day, 12 weeks

Evaluation: Skin elasticity is evaluated by a skin elasticity meter

Result: Significant improvements in R2 and R7 levels in measuring skin elasticity.



The importance of the quality of sleep

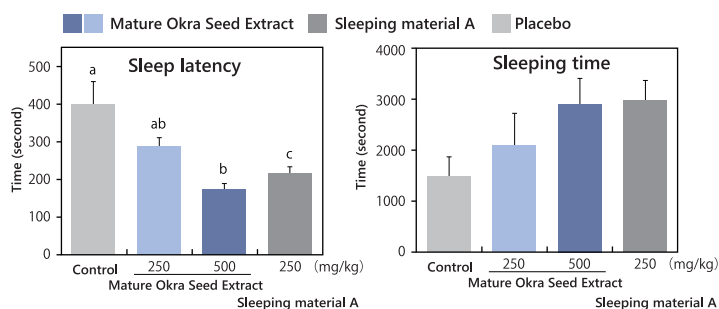
Improving the quality of sleep may stimulate growth hormone secretion and maintain skin elasticity



The effect on sleep by Mature Okra Seed Extract In vivo

30 minutes after each sample was orally administered to mice, an anesthetic (pentobarbital Na) was administered intraperitoneally to induce sleep, and the time until the mice fell asleep (sleep latency) and the time they woke up (sleeping time) was measured.

Result: Time to sleep was half and sleeping time was doubled.



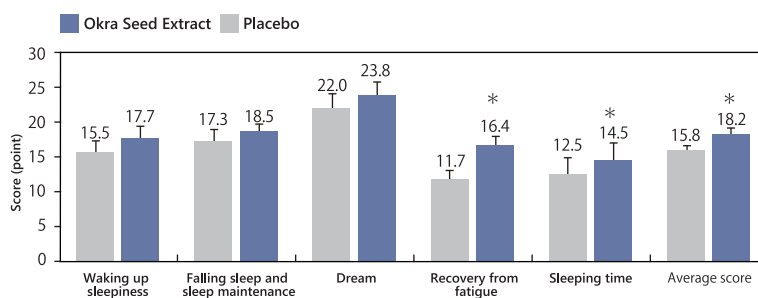
Clinical trial

Subjects: : 11 males and females with a Pittsburgh Sleep Survey (PSQI) score ≥ 5.5

Sample: Mature Okra Seed Extract 250mg/day, 5 days

Evaluation: sleep sensation was assessed by OSA-MA version (Waking Sleep Perception Questionnaire)

Result: All OSA-MA values were improved



PRODUCT SPECIFICATION [Mature Okra Seed Extract]

TEST	SPECIFICATIONS
Properties	
Appearance	light brown powder
Odor	characteristic odor
Moisture	max. 8.0%
OF4949-II	min. 0.10%
Heavy metals (as Pb)	max. 20 ppm
Arsenic (as A ₂ O ₃)	max. 2 ppm
Total plate count	max. 3,000cfu/g
Coliforms	Negative
Recommended dosage	300mg/day

PRODUCT INFORMATION

Composition Okra seed extract / gamma-Cyclodextrin
Made in Japan

◆Storage conditions...

Should be stored in the dark dry place at room temperature.

◆Shelf life: 3 years after manufacture (unopened)

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