

# MACA

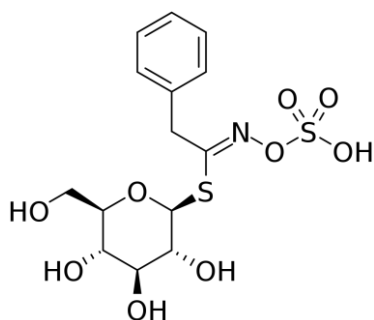
## (Maca Extract)

Scientific name	: <i>Lepidium meyenii</i>
Family name	: Cruciferae
Other name	: Peruvian ginseng
Origin	: Peru
Traditional use	: Muscle building, Fatigue recovery, Immune boosting etc.



## The features of Tokiwa's MACA

Specification: no less than **1.2%** or **2.4%** of Benzylglucosinolate



Benzylglucosinolate

- Endurance-enhancing effect
- Fatigue reducing effect
- Water-soluble
- Standardized with Benzylglucosinolate

## Recommended dose

**100-120 mg/day**

Based on MACA extract containing  
no less than 1.2% Benzylglucosinolate

## Safety

Method	Results
Ames test	Negative
Acute toxicity (mouse)	LD <sub>50</sub> ≥ 5000 mg/kg

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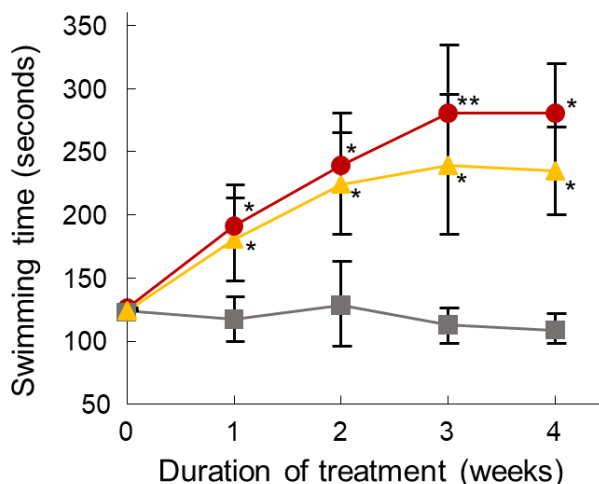
## In vivo test

## Endurance-Enhancing Effect



### Tokiwa's MACA extract enhances endurance

Swimming duration was significantly extended in the MACA extract groups



- Control
  - ▲ Maca Extract 6 mg/kg
  - Maca Extract 30 mg/kg
- Each value represents mean ± SE.  
\* p < 0.05, \*\* p < 0.01 vs. control

#### Experimental design:

- A weight (10% of body weight) was attached to tail of mice, and placed in water tank (25°C)
- Duration from start of swimming to time the nose of the mice sunk below the water surface for at least 5 seconds was measured

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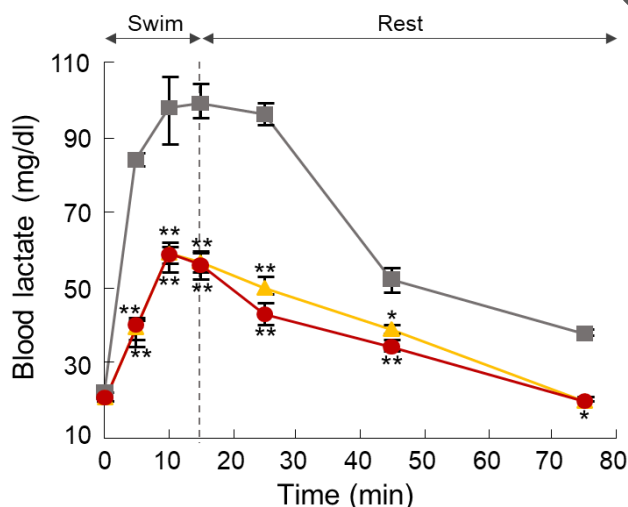
## In vivo test

## Fatigue Reducing Effect



MACA extract inhibited the increase of lactic acid in blood

### Tokiwa's MACA extract reduces fatigue



- Control
  - ▲ Maca Extract 6 mg/kg
  - Maca Extract 30 mg/kg
- Each value represents mean ± SE.  
\* p < 0.05, \*\* p < 0.01 vs. control

#### Experimental design:

- A weight (5% of body weight) was attached to tail of mice, 5 weeks after starting the study, and mice were placed in water to swim for 15 minutes
- After 60-minute rest, blood were collected over a period of time to measure the concentration of lactic acid in blood

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