ACB Wasabi Extract PF
Antioxidant + Antimicrobial + Plant Derived

Tomorrow’s Vision... Today!®
ACB Wasabi Extract PF

Technical Information:

**Product Code:** 20351PF

**INCI Name:** Lactobacillus/Wasabia Japonica Root Ferment Extract

**INCI Status:** Conforms

**Suggested Use Levels:** 1.0–5.0%

**Suggested Applications:** Antioxidant & Antimicrobial
Wasabi

- Also known as Japanese horseradish
- Used as a condiment and has an extremely strong flavor
- Widely thought to have powerful antimicrobial properties
- The plant grows naturally along stream beds in mountain river valleys of Japan
- The chemical in wasabi that provides its initial pungency is the volatile allyl isothiocyanate, which is produced by hydrolysis of natural rhizome thioglucosides

\[ \text{Allyl-Isothiocyanate} \]
Wasabi

• When the tissue of the Wasabi plant is damaged, the enzyme myrosinase is activated and begins converting sinigrin to allyl isothiocyanate (AITC)
  o Giving unique organoleptic properties to Wasabi

• Allyl isothiocyanate exhibits cidal effects against a wide range of organisms ranging from nematodes to fungus and bacteria

• Other isothiocyanates present, such as 6-methylsulfinylhexyl isothiocyanate, help to promote the activity of other antioxidants, such as glutathione, found in the skin
  o Helps protect the skin against unnecessary injury
ACB Wasabi Extract PF

- The wasabi root is fermented with *Lactobacillus*
- Fermentation allows for isolation of phytochemicals and phenolic compounds
- Isolated phenolic compounds include oxidoreductases, isocyanates, and glucosinolates
ACB Wasabi Extract PF

Benefits:

✓ Protects DNA against damage caused by free radicals
✓ Helps promote the activity of other antioxidants
✓ Natural preservative
  o The Japanese have traditionally used wasabi as an antimicrobial agent with the consumption of raw seafood
✓ Highly effective antioxidant
✓ Water-based, glycol free
ACB Wasabi Extract PF
Efficacy Assay Results

SOD Activity

Inhibitory Rate (%)

Percent (%) Concentration of ACB Wasabi Extract PF Tested

Protocol

• Superoxide dismutase (SOD) is an enzyme that breaks down free radicals and reactive oxygen species, and it is used here to depict the antioxidant capability of ACB Wasabi Extract PF

• A Xanthine Oxidase based model was used where Ascorbic acid was the positive control and absorbance was measured by the Nitro Blue Tetrazolium (NBT) method

• ACB Wasabi Extract PF showed that its pseudo enzymatic antioxidant activity is concentration dependent
ACB Wasabi Extract PF
Efficacy Assay Results

Challenge Test Results:

Protocol
• ACB Wasabi Extract PF at 3% concentration was placed in three separate containers to which the three inoculated test organisms were added
• The inoculated samples were evaluated 0, 3, 7, and 14 days after the initial inoculation to determine quantitatively the number of viable microorganisms remaining
ORAC Assay

**Protocol**

- Solutions of **ACB Wasabi Extract** and Trolox® (positive control) were prepared in 75mM potassium phosphate buffer.
- Concentrations: 0.06%, 0.03%, 0.015%
- Fluorescent measurements were then taken every 2 minutes for 2 hours.
- **ACB Wasabi Extract** began exhibiting antioxidant activity at 0.015%
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ACTIVE CONCEPTS LLC

THANK YOU

For more information – Visit our website!
www.activeconceptsllc.com