MICHIGAN STATE UNIVERSITY | Asia Hub | NANJING AGRICULTURAL UNIVERSITY | CMU CHIANG MAI UNIVERSITY | MDRI CMU

Asia Hub and CIAERA Annual Meeting 2024

November 12-15, 2024 | Centara Riverside Hotel, Chiang Mai, Thailand

AGRO CMU | AGRO-INDUSTRY CHIANG MAI UNIVERSITY

CMU CHIANG MAI UNIVERSITY

Faculty of Agro-Industry, Chiang Mai University

FOOD INNOVATION

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Plant-Based Protein

Plant-Based Raw Materials

Wolffia globosa

Yamabushitake

Tiger-Stripe Peanut

CMU107 Rice

Pea

Soybean

"Advanced Technologies"

High Moisture Extrusion

Enzymatic Hydrolysis

Microwave-Assisted Extraction

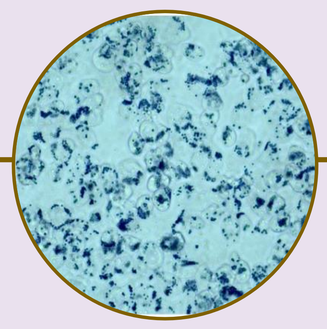
Enzymatic Closs-liking

Pulsed Electric Field (PEF)

Column Chromatography Fractionation

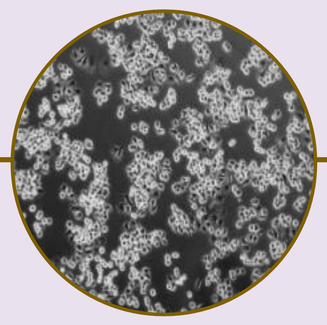
Ultrasonic-Assisted Extraction

Plant-Based Food and Functional Ingredients



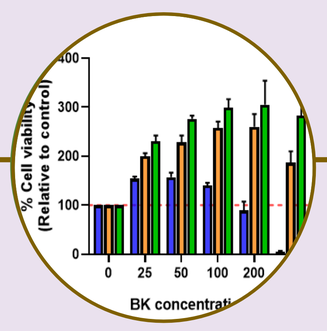
ANTI-CANCER PEPTIDES

50% Inhibition of Human Ovarian Cancer Cell Lines



ANTI-INFLAMMATORY PEPTIDES

Reduced Nitric Oxide Production by 30-40%



BOOSTING CELL CULTURE PEPTIDES

Enhanced Cell Proliferation by 2-3 Folds, for Cultured Meat

MEAT ANALOGUE

Meat-Like Structure with Completed Protein

QUICK-COOKING RICE

Reduced Cooking Time by 40-50%, Compared to Conventional Cooking

Functional Ingredient and Food from "Thai Rice and Herbs"

Synergistic of **Green Tea and Curcumin Extract** for Anti-cancer (In vitro & In vivo)

Elderly Boosting Drink

- ☑ No sugar
- ☑ High antioxidant
- ☑ Low glycemic index (GI)
- ☑ Reduce blood sugar levels

InnoRice Plus+ :
Black rice + Cinnamon
+ *Lagerstroemia speciosa* Leaf

Protein Hydrolysate from Jasmine Rice Bran for Improving Brain Function (In vitro & In vivo)

Hydrolyzed protein from jasmine rice bran contains small molecular peptides (<3 kDa) with high antioxidant activity, which helps in brain function and improves memory.

Innovation in processing black/golden garlic that takes only 1 week to produce, which is faster than the traditional production that takes more than 1 month.

Black Garlic & Golden Garlic

- ☑ High S-allylcysteine (SAC)
- ☑ High 5-Hydroxymethylfurfural (5-HMF)
- ☑ High antioxidant activity

Supercritical CO_2 extraction, achieved by heating and pressurizing CO_2 above its critical point, offers properties intermediate between liquids and gases, and is valued for its adjustable solvent selectivity enhancing the extraction of specific compounds.

Plant and insect oils, like sesame, hemp seeds, spent coffee grounds, turmeric, calendula, black soldier fly larvae, are increasingly used in both food and cosmetics.

Supercritical CO_2 extraction enhances oil yield, quality, and stability by preserving heat-sensitive components and ensuring high purity.

This environmentally friendly method retains natural bioactive compounds, offers precise control over extraction, and produces oils free from toxic residues, making it ideal for food, cosmetics, and pharmaceuticals.

Supercritical CO_2 Extraction of Agri-foods, Oilseeds, and Residuals

ATLANTA MEDICARE