

AĈTINIZYME®

TURBOCHARGE PROTEIN DIGESTION



PROTEIN IS BOOMING

PLANT PROTEIN IS DRIVING THE NEXT WAVE OF GROWTH

\$100B+ MARKET OPPORTUNITY

BEYOND POWDERS: BARS, BEVERAGES, GUMMIES & FUNCTIONAL FOODS

PLANT PROTEIN: ONE OF THE FASTEST-GROWING SEGMENTS

NATURE BUILT THIS. WE CONCENTRATED IT.

TARGET BIO LOCK™

BIOACTIVITY PRESERVATION PROTOCOL



97%

BIOACTIVITY RETAINED

212%

BIOACTIVITY INCREASE

MEET AĈTINIZYME®

FREEZE DRIED WHOLE GREEN KIWIFRUIT

NATIVE FRUIT MATRIX

NOT AN EXTRACT



>100K

U/G
actinidin
activity



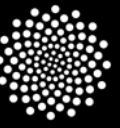
DIGESTION IS A PROBLEM FOR PLANT PROTEINS

ABSORPTION GAP

Plant proteins offer 75-80% digestibility compared to animal sources [1].

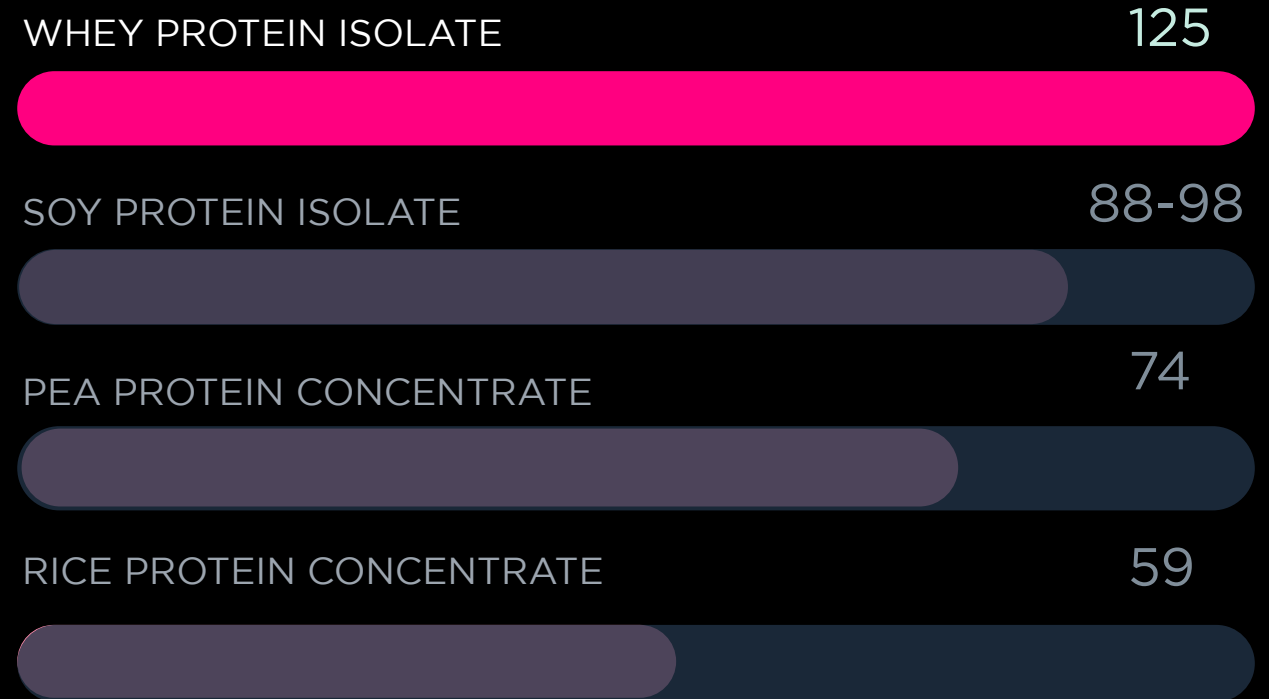
AVG PLANT DIGESTIBILITY





A CONSUMER BUYING
25G OF PEA PROTEIN IS
NOT ABSORBING
25G OF USABLE
AMINO ACIDS

DIAAS: how well a protein provides and delivers the essential amino acids your body can digest and absorb



FAO >3y reference pattern [2]



TWO BARRIERS TO PLANT DIGESTION

- ANTI-NUTRITION FACTORS
- BONDS ARE HARD TO CUT



LEGACY SOLUTIONS HAVE TRADEOFFS

30

MINS

is all it takes for papaya and pineapple extracts to degrade **gastric lipase** [4]



PAPAIN DIES IN STOMACH

Needs expensive **enteric coating** to survive gastric transit [3].



BROMELAIN AFFECTS FAT DIGESTION

Degrades gastric lipase, potentially affecting fat-soluble vitamins (**A, D, E, K**) absorption [4]

**BOTH ARE
BROAD-
SPECTRUM
PROTEASES
THEY DIGEST
EVERYTHING**

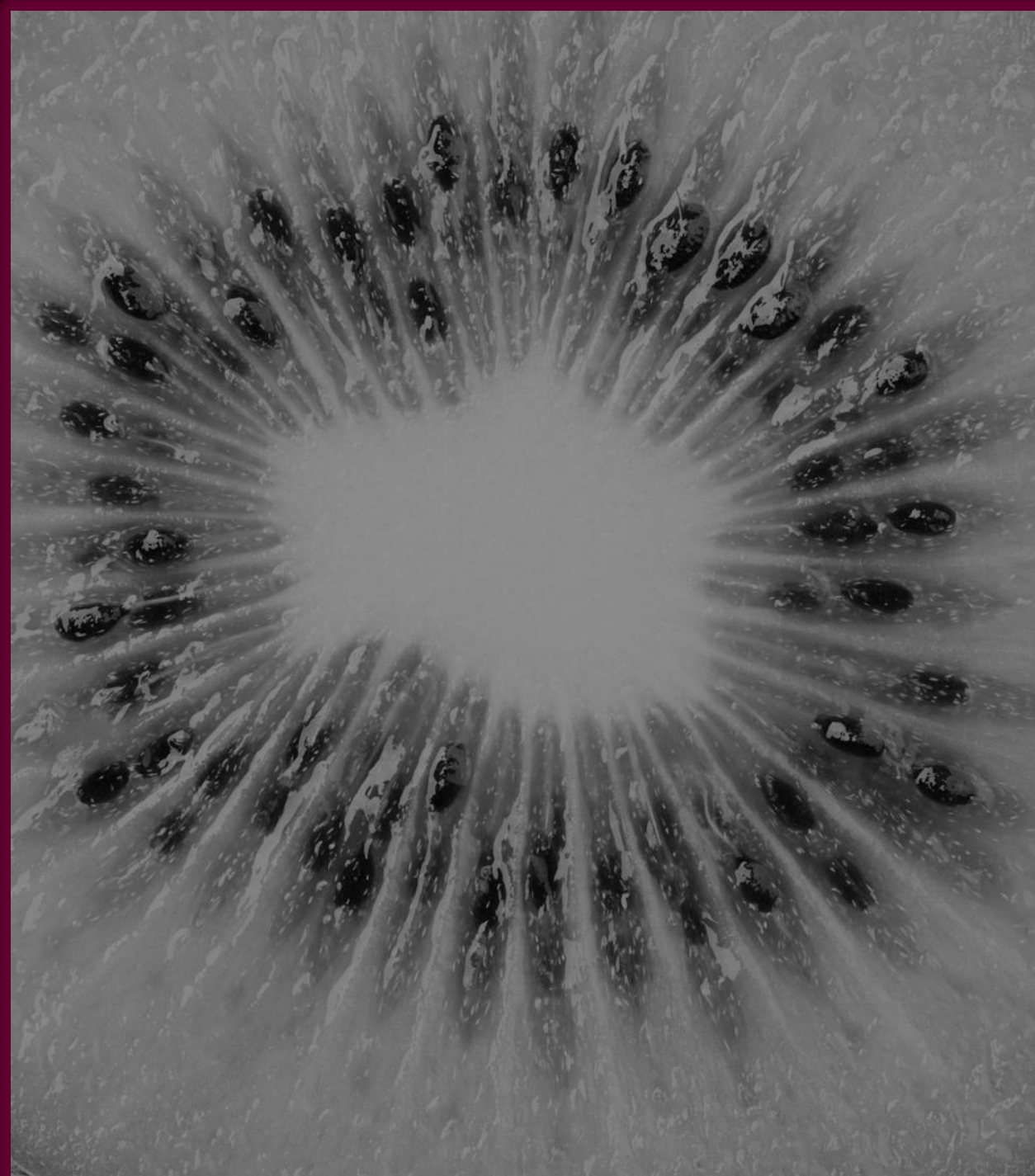
...
**INCLUDING
DIGESTIVE
ENZYMES
THEMSELVES**

THE ANSWER WAS IN A KIWIFRUIT

ACTINIDIN IS A CYSTEINE PROTEASE THAT ADDRESSES
STRUCTURAL BARRIERS TO PLANT PROTEIN DIGESTION

01 BYPASSES PLANT'S DEFENCES

02 CUTS TOUGH PLANT PROTEINS



ACTINIZYME HAS UP TO ~X5 PERFORMANCE

ENZYME	ACTIVITY (NMOL/MIN/G) ^[A]
ACTINIZYME	130,900
BROMELAIN	26,780
PAPAIN	73,920

Anagenix Internal Data

[A] ACTIVITY: ASSAYED AGAINST 200 UM Z-LYS-PNP, 25°C, PH 6.0
[B] SOLUBLE PROTEIN: BRADFORD PROTEIN

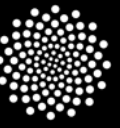
~ 5× MORE ACTIVE
THAN BROMELAIN
~2× MORE ACTIVE
THAN PAPAIN

PAPAIN SOURCE

SWANSON HEALTH: 12,000 USP UNITS/MG

BROMELAIN SOURCE

DOCTOR'S BEST: 3,000 GDU/G



BENEFITS OF USING ACTINIZYME



**NO ENTERIC COATING
NEEDED**



STABLE FROM **pH 3-10** ^[5]

**WORKS WITH PEPSIN,
NOT REDUNDANTLY** ^[5]



FULL DIGESTIVE TRACT ^[6]

GASTRIC

2 HR

INTESTINAL

2 HR

4H

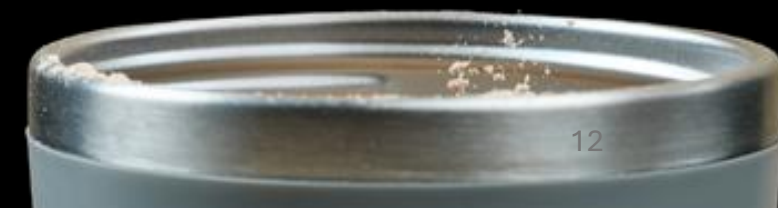
BIOACTIVITY

NO EXTRACTIONS. NO SOLVENTS. CLEAN LABEL



3 REASONS TO ADD
ACTINIZYME®
TO YOUR PROTEIN FORMULA

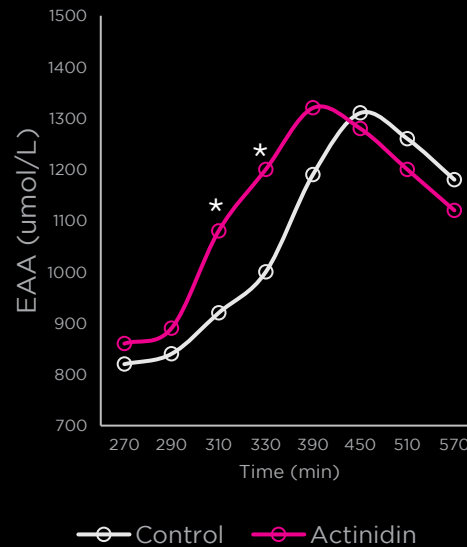
1. PERFORMANCE
2. DIGESTION SYNERGY
3. COMFORT



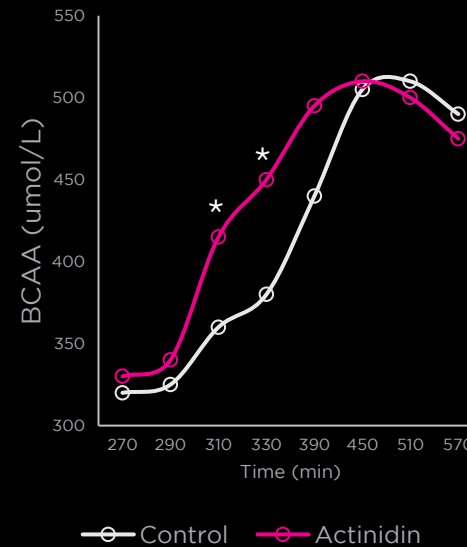
ACCELERATING AMINO ACID RELEASE

INCREASE OF
EAA, BCAA
& LEUCINE
AS EARLY AS
40 MINS
POST-MEAL [7]

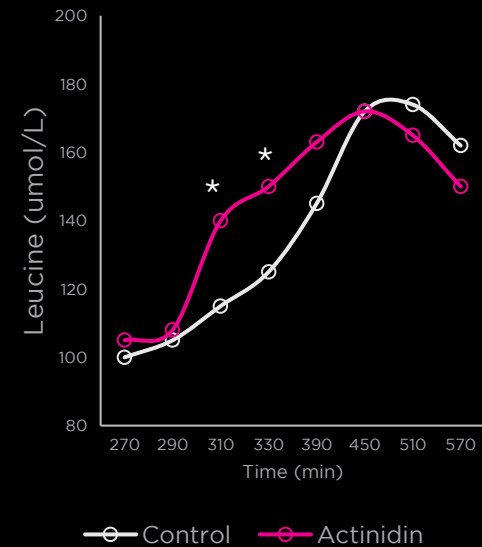
PLASMA EAA



PLASMA BCAA

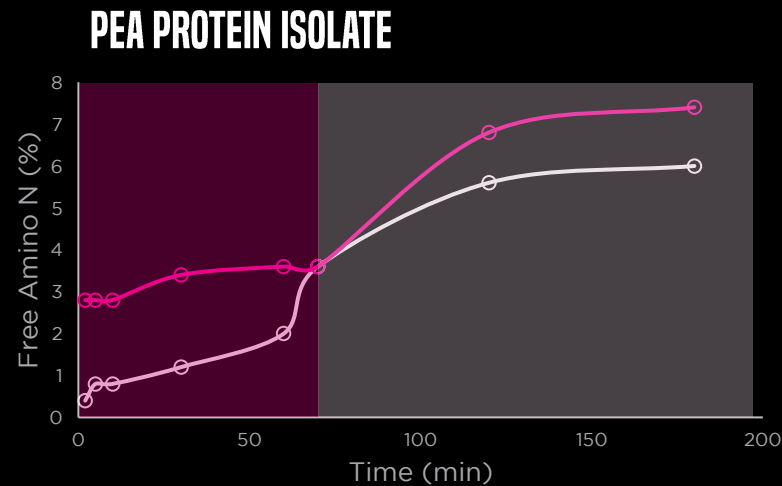


PLASMA LEUCINE

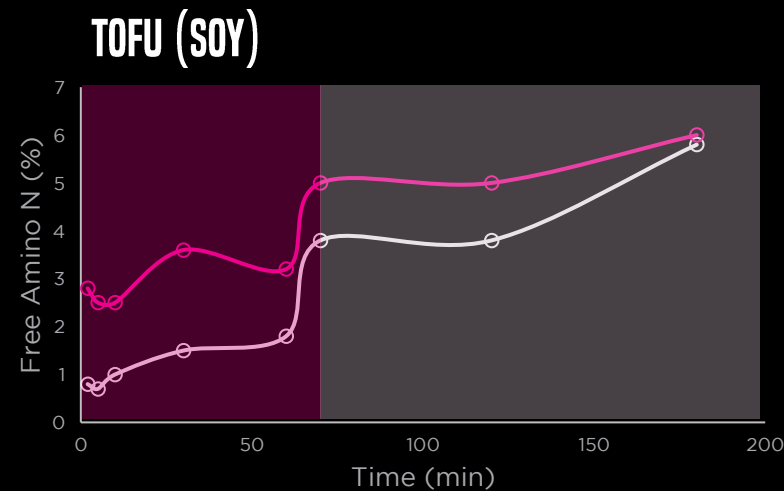


* STATISTICALLY SIGNIFICANT ($p < 0.01$)

WORKS ON TOP OF BODY'S OWN ENZYMES

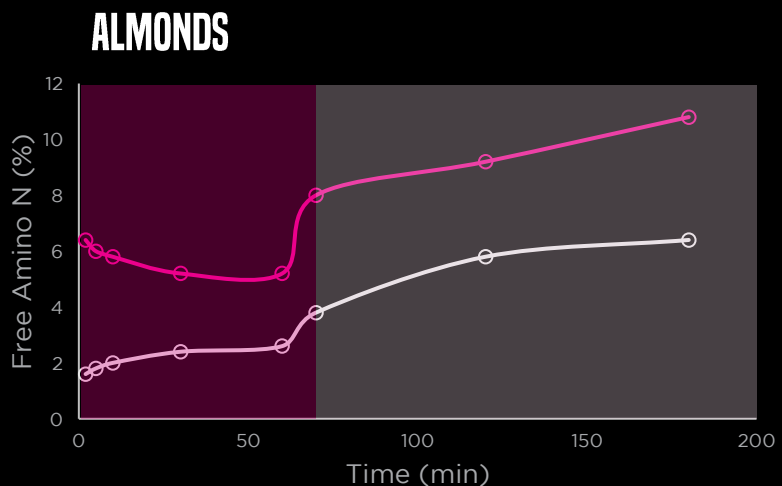


○ Body Enzymes ● Actinidin + Body Enzymes



○ Body Enzymes ● Actinidin + Body Enzymes

■ GASTRIC PHASE (2-60 MIN) ■ INTESTINAL PHASE (70-180 MIN)



○ Body Enzymes ● Actinidin + Body Enzymes

Charts derived from Kaur et al. (2022) [5]

IN PIGS
27% FASTER GASTRIC EMPTYING [8]

44% MORE NITROGEN, EARLIER [9]

REDUCES BLOATING



CLINICAL TRIAL

44% REDUCTION IN BLOATING AUC SCORE ^[10]

Randomised Cross-over Trial

WITH ACTINIDIN



84

CONTROL



150

$p < 0.05$

Statistically significant reduction



ANAGENIX CONSUMER DATA

REAL WORLD FEEDBACK AFTER 2 WEEKS

UK Audience | Protein: Whey soy, pea, rice, hemp

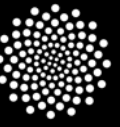
-37%

BLOATING/GAS

-34%

ABDOMINAL PAIN

-29% REFLUX



AETINIZYME®

3 KEY POSITIONING PLATFORMS

1. MUSCLE PERFORMANCE

2. HEALTHY AGEING

3. WOMEN'S WELLNESS



1. MUSCLE PERFORMANCE

**FASTER PROTEIN DIGESTION.
FASTER AMINO ACID DELIVERY.**
SUPPORTING MUSCLE PROTEIN
SYNTHESIS AND RECOVERY

Target applications: Sports nutrition, active lifestyle, exercise recovery, protein powders, RTDs



2. HEALTHY AGEING

**OPTIMISING PROTEIN NUTRITION
FOR HEALTHY AGEING**

**SUPPORTING MUSCLE
PRESERVATION AS WE AGE**

**Target applications: Healthy ageing, mobility,
strength, senior nutrition**



3. WOMEN'S WELLNESS

**CLEAN-LABEL PROTEIN SUPPORT FOR
EVERYDAY WELLNESS**

**DESIGNED FOR COMFORT, CONFIDENCE
AND ACTIVE LIVING**

**Target applications: Women's health, meal
replacements, lifestyle nutrition, weight
management, wellness shakes**



AĈTINIZYME®

NPD AND PRODUCT CONCEPTS



ACTINIZYME®

LOW DOSE

200 MG/ 30 G PROTEIN

(STANDARD SERVE OF PROTEIN ISOLATES)

- **Undetectable flavour**
- **Undetectable texture**
- **Enhanced protein powder**
- **Results consumers can feel**

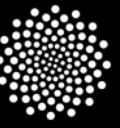


ACTINIZYME®

**HELPING CONSUMERS GET MORE FROM
THE PROTEIN THEY ALREADY CONSUME**

**CLEAN LABELS
USUALLY COST YOU
PERFORMANCE
NOT THIS TIME**





REFERENCES

1. Opazo-Navarrete, M. et al. Comprehensive Review of Plant Protein Digestibility: Challenges, Assessment Methods, and Improvement Strategies. *Appl. Sci.* 15, (2025).
2. Herreman, L., Nommensen, P., Pennings, B. & Laus, M. C. Comprehensive overview of the quality of plant- And animal-sourced proteins based on the digestible indispensable amino acid score. *Food Sci. Nutr.* 8, 5379–5391 (2020).
3. Sharma, M., Sharma, V., Panda, A. K. & Majumdar, D. K. Development of enteric submicron particle formulation of papain for oral delivery. *Int. J. Nanomedicine* 6, 2097–2111 (2011).
4. Martin, H., Cordiner, S. B. & McGhie, T. K. Kiwifruit actinidin digests salivary amylase but not gastric lipase. *Food Funct.* 8, 3339–3345 (2017).
5. Kaur, L. et al. Actinidin in Green and SunGold Kiwifruit Improves Digestion of Alternative Proteins—An In Vitro Investigation. *Foods* 11, (2022).
6. Grozdanovic, M. M., Ostojic, S., Aleksic, I., Andjelkovic, U. & Et., A. Active actinidin retains function upon gastro-intestinal digestion and is more thermostable than the E-64-inhibited counterpart. *J. Sci. Food Agric.* <https://doi.org/10.1002/jsfa.6656> (2014) doi:10.1002/jsfa.6656.
7. Park, S. et al. The impact of Hayward green kiwifruit on dietary protein digestion and protein metabolism. *Eur. J. Nutr.* 60, 1141–1148 (2021).
8. Montoya, C. A. et al. Actinidin from kiwifruit (*Actinidia deliciosa* cv. Hayward) increases the digestion and rate of gastric emptying of meat proteins in the growing pig. *Br. J. Nutr.* 111, 957–967 (2014).
9. Montoya, C. A., Cabrera, D. L., Zou, M., Boland, M. J. & Moughan, P. J. 'The Rate at Which Digested Protein Enters the Small Intestine Modulates the Rate of Amino Acid Digestibility throughout the Small Intestine of Growing Pigs. *J. Nutr.* 148, 1743–1750 (2018).
10. Wallace, A. et al. A Pilot Randomized Cross-Over Trial to Examine the Effect of Kiwifruit on Satiety and Measures of Gastric Comfort in Healthy Adult Males. *Nutrients* 9, 639 (2017).