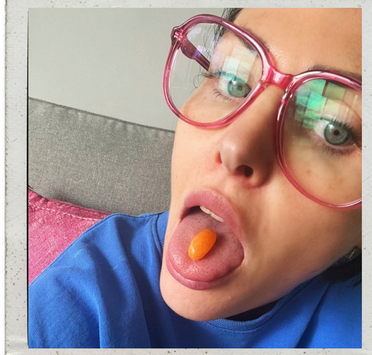
L O O N S H O T S :

Science-based Serendipity and the Importance of Nurturing the Crazy Ideas that Change Healthcare Forever

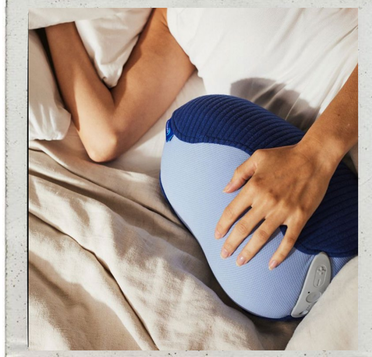
Brooke Benson Campbell BHSc (Nut Med)



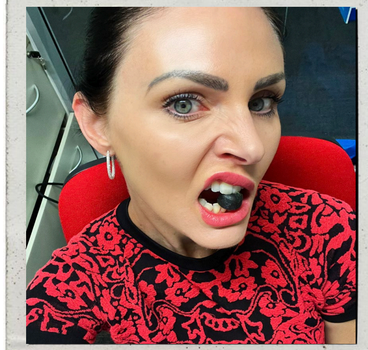
Immune jellybeans

Cbd leggings

adaptogen spirits



Sleep robots

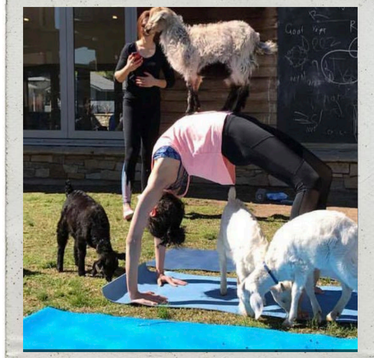


greens as gummies

nutrient iv

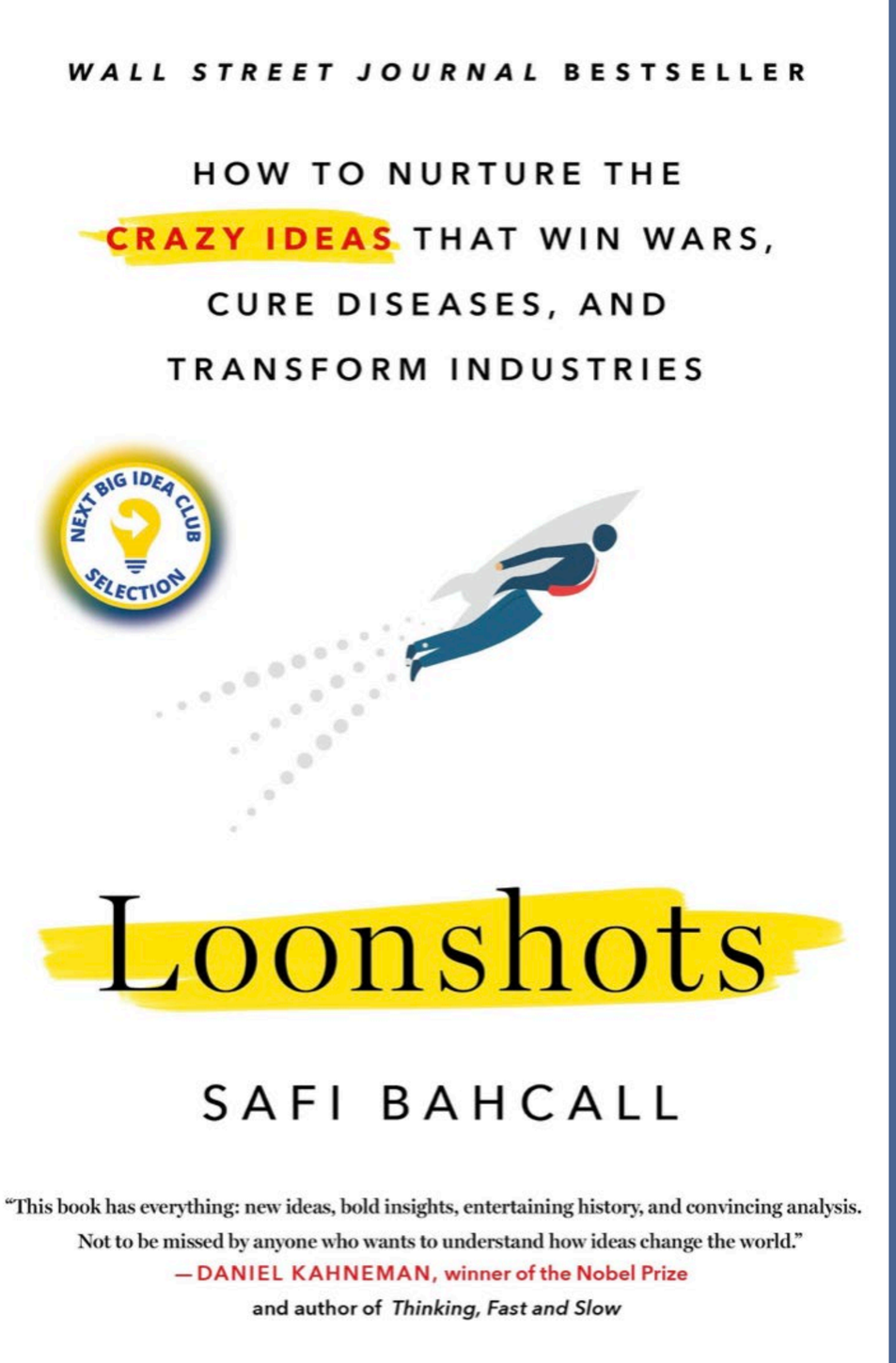
nootropic shots

Jade egg



goat yoga

miscellaneous foods



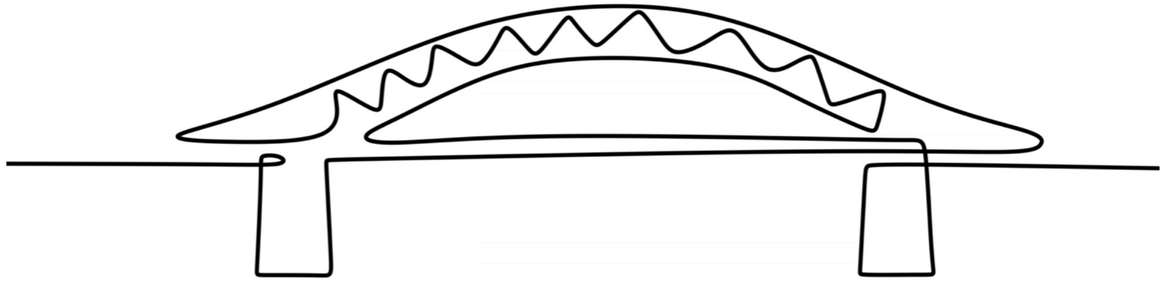
'moonshot':

(1) the launching of a spacecraft to the moon; (2) an ambitious or expensive goal, widely expected to have great significance

'loonshot':

a widely-dismissed or ridiculed idea, its champion written off as unhinged, crazy or overly optimistic

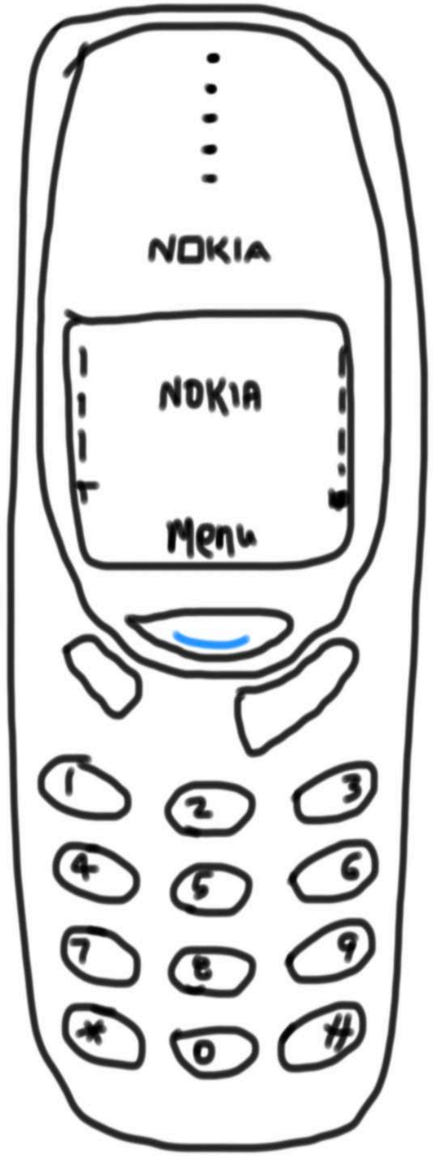
LOONSHOT



THERAPEUTIC OUTCOME

CONSUMER REQUIREMENT

NOKIA WHO?



INNOVATION

OPPORTUNITY

RESEARCH

FORESIGHT

LUCK

THE GUMMY VITAMIN BOOM DOESN'T SEEM TO BE SLOWING DOWN ANYTIME SOON

As the line between supplement and candy continues to blur, what does this mean for consumers?

Are multivitamin gummies a waste of money?

Gummy Vitamins—Not Just for Kids!

Vitamins Gone Gummy

Do Gummy Vitamins Actually Work? 3 Nutritionists Hash It Out

Surprised by the Benefits of Gummy Vitamins

Gummies as multivitamins: The pros and cons you must know about

Wait, are Gummy Vitamins a Good or Bad Idea?

CRN: Gummy article harps on problems, ignores benefits

Vitamin gummies are gaining momentum among adults, and health experts are worried

Gummy vitamin market shows gumption

Ease of use, variety in shapes, colors and flavors drive growth in market.

GRAND VIEW RESEARCH

SELFRIDGES&Co

$42bn by 2028

#1 vitamin format for >35s

900% growth year on year

MINTEL

nutrients

MDPI

Article

Bioequivalence Studies of Vitamin D Gummies and Tablets in Healthy Adults: Results of a Cross-Over Study

Carol L. Wagner [1,*], Judy R. Shary [1], Paul J. Nietert [2], Amy E. Wahlquist [2], Myla D. Ebeling [1] and Bruce W. Hollis [1]

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Received: 4 April 2019; Accepted: 4 May 2019; Published: 7 May 2019

Abstract: The objective of this investigation was to compare bioavailab
Vitamin D_3 ($vitD_3$) gummies vs. tablets in healthy adults. An initial
trial involving healthy adults ($n = 9$) was conducted followed by a larg
Healthy participants aged 18–45 years with body mass index (BMI)
deficiency were randomized to receive 20,000 international units (IU) v
tablets with serial samples obtained to measure plasma $vitD_3$ at baselin
by a 2-week washout period. The same participants then crossed ove
the form not previously given, with sampling at the same time points
were analyzed for $vitD_3$ concentration by liquid chromatography (LC)-
1, results suggested bioavailability was greater with gummies compar
1.08 at 24 h). In Study 2, the area under the concentration curve (AUC) w
than tablets (gummy mean (95% CI): 1474 ng·/mL (1393–1555); tablet mean
(693–855), $p < 0.0001$). Average peak blood concentration (C_{max}) values wer
with gummies (gummy: 47.3 ng/mL; tablet: 23.4 ng/mL; $p < 0.0001$). $VitD_3$ gu
bioavailability than tablets with higher vitD concentrations over time, which may ha
for achieving vitD sufficiency.

Keywords: vitamin D; cholecalciferol; bioequivalence; bioavailability

1. Introduction

There is increasing evidence that vitamin D supplementation is essential in providing adequate delivery of this preprohormone implicated not only in calcium metabolism but also in immune function [1,2]. Historically, the main source of vitamin D was through the interaction of ultraviolet B

BIOEQUIVALENCE ACROSS FORMATS

JACN Journal of the American College of Nutrition ›
Volume 39, 2020 - Issue 5

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325 Views
2 CrossRef citations to date

Articles

Vitamin C Bioequivalence from Gummy and Caplet Sources in Healthy Adults: A Randomized-Controlled Trial

Malkanthi Evans, Najla Guthrie, H. Kelly Zhang, William Hooper, Andrew Wong & Annahita Ghassemi

Pages 422-431 | Received 01 May 2019, Accepted 19 Oct 2019, Published online: 20 Nov 2019

Download citation | https://doi.org/10.1080/07315724.2019.1684398 | Check for updates

ficacy of Vitamin C (L-ascorbic acid) supplementation can be assessed by uptake into
ion in leukocytes. Vitafusion® Power C gummy is an alternative vitamin C source
ilar bioavailability to comparator caplets.

ve of this study was to evaluate the bioequivalence of vitamin C from a
ummy formulation and a comparator caplet in healthy adults.

thy men and women, 34.0 ± 11.4 years of age and Body Mass Index (BMI) 24.5 ± 3.6
e randomized examiner-blind, comparator controlled, cross-over trial with two
(1000 mg) to caplet (1000 mg) or caplet to gummy. Intake of foods fortified with
stricted 7 days prior to each dosing. Blood samples were collected pre-dose and at 0.5,
, 10, 12 and 24 h post-dose for plasma and leukocytes; and urine was collected pre-dose
0-2, 2-4, 4-8, 8-12 and 12-24 h post-dose for L-ascorbic acid analysis.

s: Vitafusion® Power C gummy and comparator caplet demonstrated similar plasma absorption
ofiles as there were no significant differences in plasma L-ascorbic acid total Area Under the Curve $(AUC)_{0\text{-}24h}$, and T_{max} between gummy and caplet. The caplet did elicit a significantly higher C_{max} than the gummy ($p < 0.05$), however, the difference was numerically small. Leukocyte L-ascorbic acid total $AUC_{0\text{-}24h}$ and C_{max} were not significantly different between gummy and caplet, however T_{max} of the gummy group was significantly longer ($p = 0.012$). Urinary L-ascorbic acid levels were also not significantly different between gummy and caplet. There were no serious adverse events and safety parameters remained within normal clinical range for both products.

Conclusion: Vitafusion® Power C gummy exhibited similar Vitamin C absorption and bioavailability to a comparator caplet in healthy adults and were considered bioequivalent.

L O O N S H O T #1

Do any natural remedies work for the common cold?

Need cold & flu relief?

Which at-home hacks to ward off cold and flu actually work?

How to Boost Your Immune System During Cold and Flu Season

Cold remedies: What works, what doesn't, what can't hurt

OPINION: Why natural cold and flu remedies are not to be sniffed at

Home remedies to fight cold and flu symptoms may be comforting, but they're not a cure

PHARMACY MEDICINE
KEEP OUT OF REACH OF CHILDREN

Pharmacy+ Choice

Cold & Flu Day /Night Relief PE

16 Day Tablets
Paracetamol 500 mg
Phenylephrine hydrochloride 5 mg

NEW FORMULATION
For temporary relief of cold & flu symptoms

8 Night Tablets
Paracetamol 500 mg
Phenylephrine hydrochloride 5 mg
Chlorphenamine maleate 2 mg

AUST R 295785

EASEaCOLD

Cold&Flu Relief

SHORTEN YOUR COLD

Non Drowsy

7 SYMPTOMS & BENEFITS

Provide relief from:
- Head Cold
- Sore Throat
- Mild Fever*
- Blocked & Runny Nose
- Fatigue
- Nasal Congestion
- Pain*

+ Support immune system health
*Traditionally used in Western Herbal medicine

LIQUID ACTION
18 SOFT CAPSULES

AUST L 351522

PHARMACY MEDICINE
KEEP OUT OF REACH OF CHILDREN

APOHEALTH

PE Day + Night Cold & Flu Relief

DAY: Paracetamol 500 mg
Phenylephrine Hydrochloride 5 mg

NIGHT: Paracetamol 500 mg
Phenylephrine Hydrochloride 5 mg
Chlorphenamine Maleate 2 mg

Day 16 tablets
Night 8 tablets

Temporary relief of the following cold & flu symptoms: nasal congestion, sinus pain, runny nose, headache and body aches & pains. Reduces fever.

APOTEX CONSUMER PRODUCTS

AUST R 294344

EASEaCOLD

Cough,Cold&Flu + PAIN

SHORTEN YOUR COLD

Day Night

9 SYMPTOMS & BENEFITS

Provide relief from:
- Cough*
- Pain*
- Mild Fever*
- Mucous Congestion
- Fatigue
- Blocked & Runny Nose
- Sore Throat
- Restless Sleep*

+ Support immune system health
*Traditionally used in Western Herbal medicine

LIQUID ACTION
18 DAY SOFT CAPSULES
6 NIGHT SOFT CAPSULES

AUST L 353050

L O O N S H O T #2

What Are Superfoods and Are They Really Super?

Do Superfoods Really Exist?

Superfoods or Superhype?

The truth about superfoods

16 Superfoods That Are Worthy of the Title

Are ‘Superfoods’ a real thing…or is the term just a marketing ploy?

What’s So Super About Superfoods?

Young people, if you want a house, ‘stop buying avocado toast’

Are millennials lazy and afraid of hard work?

Millionaire to millennials: Lay off the avocado toast if you want a house

Avocado toast mortgages have gone global

5 Reasons Why The “Lazy Millennial” Stereotype Is Bullshit

The avocado toast index: How many breakfasts to buy a house?

Enough! Millennials Are Not 'Lazy'

Millennials: The Lazy Generation

8 Reasons Millennials Seem To Be Lazy At Work

Kiddies Cheer as Price of Cod Liver Oil Goes Skyward

One Thing Germans Have Done to Make American Youth Feel Kindly Toward Them.

The memory of the stuff was described this way by Toronto's Globe and Mail in 2002:

"The oily, fishy, smelly exudation of the liver of the *Gadus morrhea* -- once crudely obtained by simply letting the oil float to the top of a barrel full of rotting fish flesh -- has been known to induce a dry heave in the memory decades after the last swallow."

←FROM THIS

TO THIS →

L O O N S H O T #3

High–Pressure Processing vs. Thermal Treatment

Dietary Plant Polyphenols: Effects of Food Processing on Their Content and Bioavailability

Impacts of Different Types of Cooking and Freezing

Lectin Digestibility and Stability of Elderberry Antioxidants to Heat Treatment In Vitro

Some Like It Hot: Heat Resistance

Q. How do heating and freezing affect antioxidant levels in food?

Journal of Berry Research 11 (2021) 51–68
DOI:10.3233/JBR-200629
IOS Press

Research Report

Potential bioactive ingredient from elderberry fruit: Process optimization for a maximum phenolic recovery, physicochemical characterization, and bioaccesibility

Milagros Lucía Gomez Mattson[a], Rocío Corfield[b], Leonardo Bajda[a], Oscar Edgardo Pérez[c], Carolina Schebor[b] and Daniela Salvatori[a,*]

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[b]*ITAPROQ (UBA-CONICET), Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Departamento de Industrias. Intendente Güiraldes 2160, Ciudad Universitaria, Buenos Aires, Argentina*
[c]*IQUIBICEN-CONICET (UBA-CONICET). Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Departamento de Química Biológica, Intendente Güiraldes 2160, Ciudad Universitaria, Buenos Aires, Argentina*

Received 24 June 2020; accepted 26 September 2020

Abstract.
BACKGROUND: Dark-skin berries constitute a polyphenol-rich source of interest for the development of functional ingredients.
OBJECTIVE: To develop an elderberry powder, addressing technological aspects for maximum bioactive recovery, including physical quality and bioaccesibility of the antioxidant compounds.
METHODS: An optimization of the combined process of enzyme-assisted extraction and freeze-drying was undertaken. Polyphenols and anthocyanins were quantified by spectrophotometric and HPLC-DAD analysis along processing stages and an *in vitro* digestion model was used to study the antioxidant compound activity through gastrointestinal tract and after transepithelial transport across a Caco-2 cell monolayer. Powder physical properties were also evaluated.
RESULTS: The best extraction conditions were 45°C and 160 ppm enzyme. 10% maltodextrin was the minimum carrier concentration needed to get a freeze-dried powder with good physical properties and maximum bioactive content. The phenolic compounds identified in fruits (mainly cyanidin-based anthocyanins, quercetin-3-rutinoside, catechin and, in smaller amounts, gallic and chlorogenic acids) were also present in the optimum extract and the powder. High bioaccesibility of bioactive compounds and antioxidant activity were obtained after *in vitro* digestion and transepithelial transport.
CONCLUSION: The designed elderberry powder showed great potential as functional ingredient to be used in berry juice-based beverages or other products formulated with fruit powders.

ELSEVIER
Life Sciences
Volume 128, 1 May 2015, Pages 30-38

Inhibition of microglial activation by elderberry extracts and its phenolic components

Agnes Simonyi [a, b, c, d], Zihong Chen [a, b], Jinghua Jiang [a, b], Yijia Zong [a, c, d], Dennis Y. Chuang [a, c, d], Zezong Gu [a, c, d, e], Chi-Hua Lu [a, f], Kevin L. Fritsche [a, f], C. Michael Greenlief [a, g], George E. Rottinghaus [a, h], Andrew L. Thomas [a, i], Dennis B. Lubahn [a, b, f], Grace Y. Sun [a, b, c, d, e]

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https://doi.org/10.1016/j.lfs.2015.01.037

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Abstract

Aims

Elderberry (*Sambucus* spp.) is or… dicinal plants noted for its cardiovascular, anti-infl… …ory properties. In this study, we investigat… …effects of the American elderl… …well as some of the anthocya… …d flavonols (quercetin …

Main m…

The by… …nol or ethyl … lipop… …S) and r… …ory

Critical Reviews in Food Science and Nutrition
Volume 58, 2018 - Issue 15

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Reviews

Food processing strategies to enhance phenolic compounds bioaccessibility and bioavailability in plant-based foods

Albert Ribas-Agustí, Olga Martín-Belloso, Robert Soliva-Fortuny & Pedro Elez-Martínez

Pages 2531-2548 | Accepted author version posted online: 13 Jun 2017, Published online: 24 Aug 2017

Download citation | https://doi.org/10.1080/10408398.2017.1331200

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ABSTRACT

Phenolic compounds are important constituents of plant-based foods, as their presence is related to protective effects on health. To exert their biological activity, phenolic compounds must be released from the matrix during digestion in an absorbable form (bioaccessible) and finally absorbed and transferred to the bloodstream (bioavailable). Chemical structure and matrix interactions are some food-related factors that hamper phenolic compounds bioaccessibility and bioavailability, and that can be counteracted by food processing. It has been shown that food processing can induce chemical or physical modifications in food that enhance phenolic compounds bioaccessibility and bioavailability. These changes include: *(i)* chemical modifications into more bioaccessible and bioavailable forms; *(ii)* cleavage of covalent or hydrogen bonds or hydrophobic forces that attach phenolic compounds to matrix macromolecules; *(iii)* damaging microstructural barriers such as cell walls that impede the release from the matrix; and *(iv)* create microstructures that protect phenolic compounds until they are absorbed. Indeed, food processing can produce degradation of phenolic compounds, however, it is possible to counteract it by modulating the operating conditions in favor of increased bioaccessibility and bioavailability. This review compiles the current knowledge on the effects of processing on phenolic compounds bioaccessibility or bioavailability, while suggesting new guidelines in the search of optimal processing conditions as a step forward towards the design of healthier foods.

Related

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Influen… process… and bio… phytoc…

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Qiaozh… Critical… Nutriti…

BREAKTHROUGHS IN PROCESSING OF PHENOLIC COMPOUNDS

L O O N S H O T #4

SICK CARE

HEALTH CARE

SELF CARE

L O O N S H O T #?


ECONOMIC GROWTH
TRADITIONAL INGREDIENTS
INTEGRITY & EFFICACY IN NATURAL HEALTHCARE
CONSUMER NEEDS
INNOVATION & TECHNOLOGICAL ADVANCEMENT
HEALTH PROMOTION
SAFETY & TRANSPARENCY
SCIENTIFIC RESEARCH

L O O N S H O T S