



bio⁺Quercitrin

Enhanced Bioavailability

layn Natural
Ingredients

bio⁺Quercitrin FROM SOPHORA JAPONICA

Sophora Japonica, also known as the Japanese Pagoda Tree, is a showy shade tree that grows in the wild and is also responsibly cultivated in North China and the Loess Plateau. The tree blooms late summer through fall, and the flower buds are harvested Quercetin.

ONE OF NATURE'S MOST STUDIED AND POWERFUL FLAVONOIDS

Found abundantly in onions, capers, yellow fruits and vegetables, interest in Quercetin surged in recent times - and it is one of nature's most studied flavonoids for health benefit, boasting **more than 10,000 published studies**.

However, it is impossible to consume enough food to achieve therapeutic levels of Quercetin through diet alone - and in supplementation, Quercetin has poor bioavailability. Layn Natural Ingredients **bio+Quercitrin**, our branded form of IsoQuercitrin, provides the perfect solution!



bio⁺Quercitrin

Flavonoid *noun* /'FLĀVƏ,NOID/

Class of polyphenolic secondary metabolites found in plants. From the Latin word "Flavus", meaning yellow.

The natural pigments in flavonoids play multiple roles in the life cycle of plants, and provide multiple benefits to human health.



bioQuercitrin from Layn Natural Ingredients is a potent, natural antioxidant flavonoid that scavenges free radicals to inhibit oxidative damage.



Dietary
Supplements



Personal
Care



Pet
Supplements

Perfect for nutraceutical formulation and scientifically-supported for numerous health benefits:

- Immune Support
- Healthy Aging
- Cardiovascular Support
- Allergy Support
- Gut Health
- Healthy Inflammatory Response
- Joint & Healthy Cartilage Support
- Cellular Support
- Promote DNA Integrity

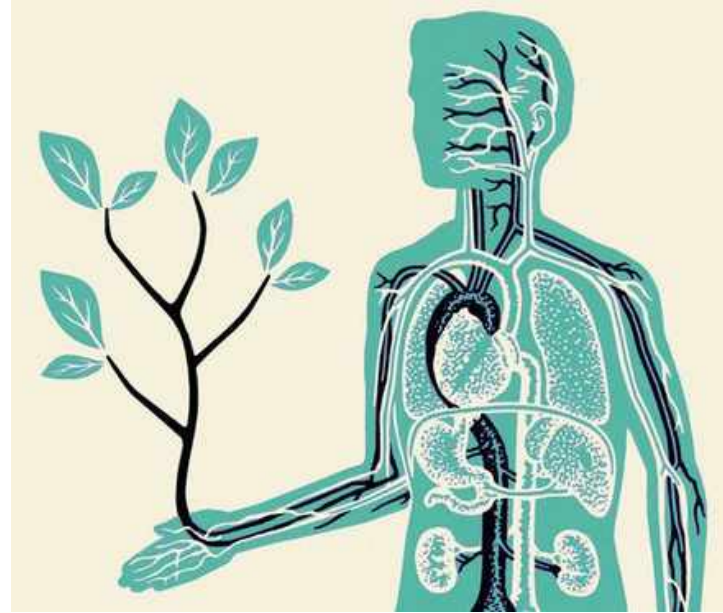
IT'S ALL ABOUT

BIOAVAILABILITY

Bioavailability is a measure of how much active ingredient gets absorbed into the body and reaches its intended target so an ingredient's health benefits can be realized.

As beneficial as Quercetin is, the solubility and absorption rate of Quercetin is low. However when Quercetin combines with glycosyl to form Quercetin glycoside, absorption is significantly enhanced.

Because **bio+Quercitrin** has a ribose molecule attached to it, **absorption is faster** as it shuttles Quercetin into the body quicker.



bio+Quercitrin 6X THE BIOAVAILABILITY OF REGULAR QUERCETIN



6X Layn Natural Ingredients **bio+Quercitrin** is more absorbable and permeable in the small intestine due to its glycoside form, **delivering 6X the bioavailability of regular Quercetin.**

Layn's bio+Quercitrin is stable, soluble and bio-available as a stand alone or complementary ingredient for product line extensions, new products, or to replace regular Quercetin in numerous applications in nutraceuticals:



Powders



Capsules



Tablets



Softgels



Beverages



Gummies



Bars



BIOAVAILABILITY AND SPEED OF ABSORPTION ARE KEY TO CREATING A SUPPLEMENT THAT DELIVERS PROVEN BENEFITS WITH LESS DOSAGE AND AT LESS COST

MORE IS LESS

When bioavailability is low and the body cannot absorb an active ingredient in desired quantities or timeframes, it often leads to adding excess ingredient to achieve desired absorption levels - but that contributes to several problems, including:

- Undesirably large serving doses or pills sizes
- Gastrointestinal issues
- Increased ingredient costs



Layn Natural Ingredients **bio+quercitrin** delivers more Quercetin to the body, faster, more cost effectively, and in smaller doses.

Numerous Studies Support the Bioavailability of IsoQuercitrin for Humans & Animals

Olthof MR, Hollman PCH, Vree B, Katan MB. Bioavailabilities of quercetin-3-glucoside and quercetin-4'-glucoside do not differ in humans. *J Nutr.* 2000;130(5):1200-1203.

Erlund I, Kosonen T, Alfthan G, et al. Pharmacokinetics of quercetin from quercetin aglycone and rutin in healthy (human) volunteers. *Eur J Pharmacol.* 2000;56:545-554.

Manach C, Morand C, Demigné C, Texier O, Régéat F, Rémésy C. Bioavailability of rutin and quercetin in rats. *FEBS Lett.* 1997;409(1):12-16

Ader P, Wessmann A, Wolfram S. Bioavailability and metabolism of the flavonol quercetin in the pig. *Free Radic Biol Med.* 2000;28(7):1056-1067.

Cermak R, Landgraf S, Wolfram S. The bioavailability of quercetin in pigs depends on the glycoside moiety and on dietary factors. *J Nut.* 2003;133(9):2802-2807.



ALL SUPPLY CHAINS ARE NOT CREATED EQUALLY



Agronomy



Extraction



Innovation



Quality



Logistics

Layn manages nearly **25% of the global Sophora Japonica market for functional botanical extracts**, harvesting the rich buds of both wild crafted and cultivated strains. Our fully vertically integrated supply chain places keen emphasis on worker safety, social responsibility, and sustainability - including no banned pesticides, and efficient water and land usage.

Sustainable Agronomy



Fun Fact

Due to its increased bioavailability, Layn's **bio+Quercitrin** achieves the same potency as Quercetin **in less than 20% of dosage.**



GENTLE, HIGH PURITY STANDARDIZED EXTRACTION



Layn Natural Ingredients' exclusive botanical extraction process has been refined for nearly 3 decades, ensuring high yield of pure, concentrated extracts for nearly every application in food, beverage, nutraceuticals, sports nutrition, pet food and animal feed.



PHOTO: Layn Natural Ingredients Guilin

- EXTRACTION PROCESS FOR BIO+QUERCETRIN
- Raw Material
 - Water ONLY Extraction
 - Centrifugation & Crystallization
 - Concentration & Recrystallization
 - Centrifugation & Enzyme Desugation
 - Washing
 - Concentration & Crystallization
 - Drying Sterilization, Milling & Metal Detection
 - HPLC Testing, Internal & 3rd Party Verification & Authentication



**LAYN bio+Quercetin
DELIVERS THE MOST
BIOAVAILABLE
FORM OF
QUERCETRIN**



Fully tested, verified, and ID authenticated.

SUPPLY CHAIN QUALITY & SECURITY **AT SCALE**

**STILL
USING
SYNTHETIC
INGREDIENTS?**

FEATURED SUPPORTER



**AMERICAN
BOTANICAL
COUNCIL**
SINCE 1988



THE POWER OF **bio+**Quercitrin

- 6x more bioavailable than standard Quercetin
- Faster absorption
- Less is more - due to increased bioavailability, Layn bio+Quercetin achieves the same potency as Quercetin in less than 20% of dosage
- Natural, polyphenol-rich antioxidant
- Important flavonoid scientifically supported for numerous health & wellness benefits
- Manufacturer-Direct, state-of-the-art extraction process
- Sustainable & Renewable
- Traceable
- Secure, stable supply
- Application and formulation support available

Vegan

Non GMO

Allergen Free

Clean Label

Gluten Free

100% Natural

No Artificial Colors or Flavors



layn Natural
Ingredients

GLOBAL BOTANICAL LEADERSHIP - FULLY VERTICALLY INTEGRATED

120,000

METRIC
TONS

biomass
processed
annually

205

THOUSAND
M²

state-of-the-art
extraction

58

PATENTS

for science and
innovation
achieved globally

6

INNOVATION
CENTERS

around
the world

3000

FARMING
COMMUNITIES

and families
supported
with sustainable
agronomy

#1

IN
SWEETENERS

for stevia
& monk fruit

3

DECADES

botanical
innovation and
leadership



global secure &
transparent
supply chain



WHAT'S **NOT** ON YOUR LABEL?

Consumers are demanding more clean label ingredients - and concerns about safety and toxicity are leading to increased restrictions of synthetic antioxidants. Contact us to speak with an expert about adding bio+Quercitrin to your brand.

layn Natural
Ingredients

MORE THAN A SUPPLIER. A RELATIONSHIP.

True innovation begins at the source and selecting a partner with skills, capital, tools, and alignment to drive R&D.



Explore our full portfolio of functional botanical extracts in our Ingredient Library:

layncorp.com/ingredient-library

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BOTANIFY YOUR BRAND TODAY - LAYNCORP.COM



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