

A close-up photograph of a green fern frond, showing the intricate details of its pinnules. The frond is set against a solid black background, which makes the vibrant green color stand out. The lighting is soft, highlighting the texture of the leaves.

ION^{*} Intelligence
of Nature[™]



What does
“Intelligence of Nature”
mean?

Our invisible communicators: The Microbiome

In her ancient and inherent wisdom, nature uses communication to connect us to what we need to thrive. One device of nature's innate ability to communicate is the microbiome.

A collection of bacteria, fungi, and even parasites that exists on and within each of us, the microbiome is what helps facilitate communication and connection between us and the natural world.

Human

1 species – 20,000 genes

Parasites

300,000 species – 2 billion genes

Bacteria

40,000 species – 2 million genes

Fungi

3,500,000 species – 125 trillion genes



We are hardly human...

You are mostly microbes with at least 10 times as many microbial cells as human cells. They are responsible for:

- digesting our food
- making our vitamins
- educating our immune system to keep pathogens out
- producing essential brain chemicals called neurotransmitters that control our mood.

Further, your microbiome is not set.

It is constantly changing and adapting to new environments with:

- the things you eat
- the places you go
- the air you breathe






“All disease begins in the gut.” -*Hippocrates*

A dysfunctional, unbalanced microbiome contributes to:

- inflammation
- digestive issues
- brain fog
- and too many diseases to name...

This is known as **gut dysbiosis**.





How the microbiome speaks

A balanced microbiome communicates with the intestinal cells and prevents disease-causing bacteria from sticking to the gut lining.

It does this using a process called electron transfer, or redox signaling. You can think of redox molecules as the words the microbiome uses to communicate.

“redox”= reduction and oxidation

Redox reactions include:

- Photosynthesis
- Respiration
- Corrosion

In the gut, this signaling controls inflammatory response.



A balanced, diverse microbiome is key, but let's go deeper

For your microbiome to thrive, it needs a healthy space to live, and your gut lining is foundational.

- largest barrier system in the body
- one cell layer thick
- houses 70-80% of your immune system
- where 90% of serotonin and 50% of dopamine is made in the body
- coated in a mucosal layer, where your microbiome lives
- held together by tight junctions (cellular seals)





Tight junctions: intelligence at a cellular level

The importance of tight junctions cannot be overstated.

Tight junctions are protein seals that hold our cell membranes together.

Tight junctions:

- keep toxins and foreign particles out of the bloodstream
- allow nutrients to enter
- support the mucosal “terrain” or biofilm upon which your microbiome resides, making or breaking its balance and health.



How does this all fit together?

— *tight junction integrity*

— *strong gut lining*

— *stable environment for microbes*

— *balanced microbiome*

— *inherent health*

A person is seen from behind, standing in a lush green field. They are holding a long, thin pole or stick. In the distance, there are rolling hills or mountains under a clear blue sky. The scene is bathed in soft, golden light, suggesting early morning or late afternoon. The overall mood is peaceful and contemplative.

If nature is intelligent...

what is the problem?



We are working against ourselves

Over the last sixty years, several factors have played major roles in the decline of tight junction function, microbiome diversity and overall health:

- factory farming
- processed foods
- widespread antibiotic use

Today:

- leaky gut has become increasingly widespread
- two thirds of people in the U.S. suffer from some kind of recurring gut issue



Antibiotic exposure comes in many forms

Primary: Prescription antibiotics

- 83% of the population takes one course of antibiotics per year

Secondary: Conventionally raised livestock

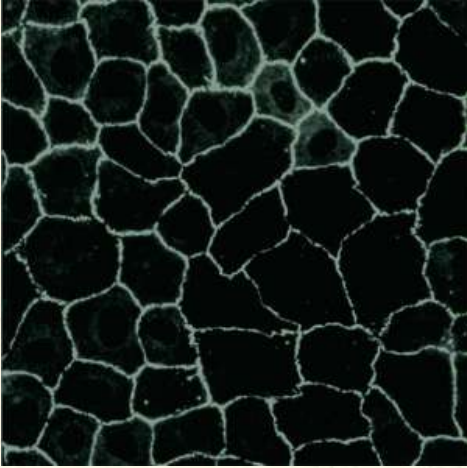
- 10x as much antibiotics used in meat, dairy, and poultry production annually

Perpetual: Glyphosate (Roundup) is one of the most dangerous and prevalent antibiotics, and the most unavoidable.

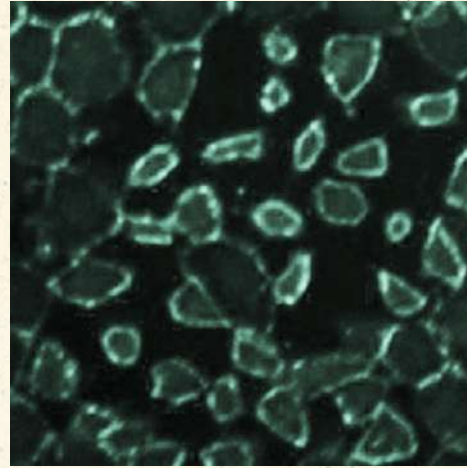
- 300 million pounds on U.S. soil / 4.5 billion pounds sprayed globally every year
- Found in 75% of rain and air samples in much of the U.S.
- Found in urine, blood, and breast milk of feed animals and humans.
- 93% of Americans tested at 3 parts per billion (ppb) of glyphosate, well over the permitted levels for tap water in the E.U. (0.1 ppb)
- Impossible to avoid, even if you are eating an all-organic diet.



Your gut on glyphosate:

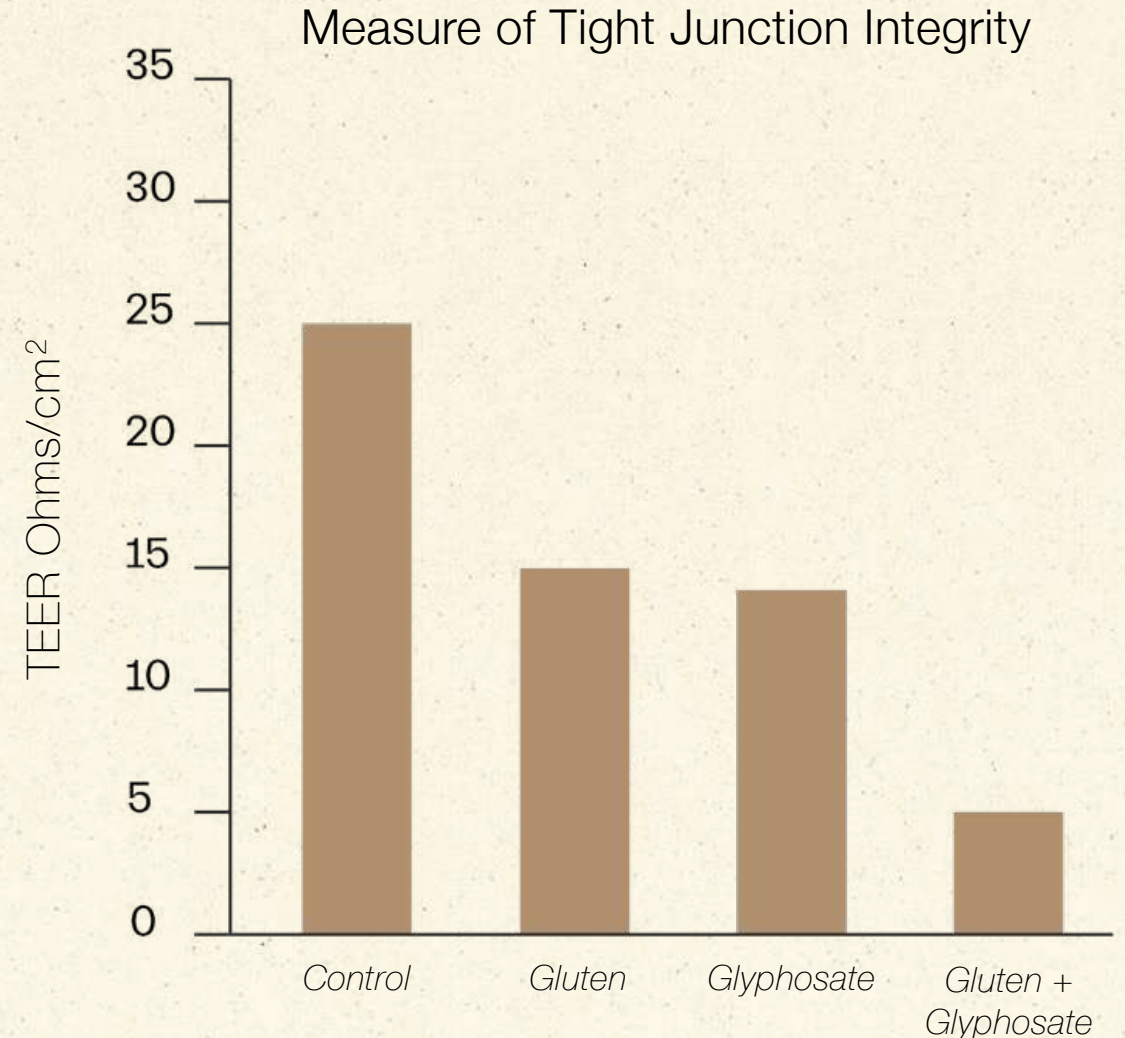


This is your gut membrane.

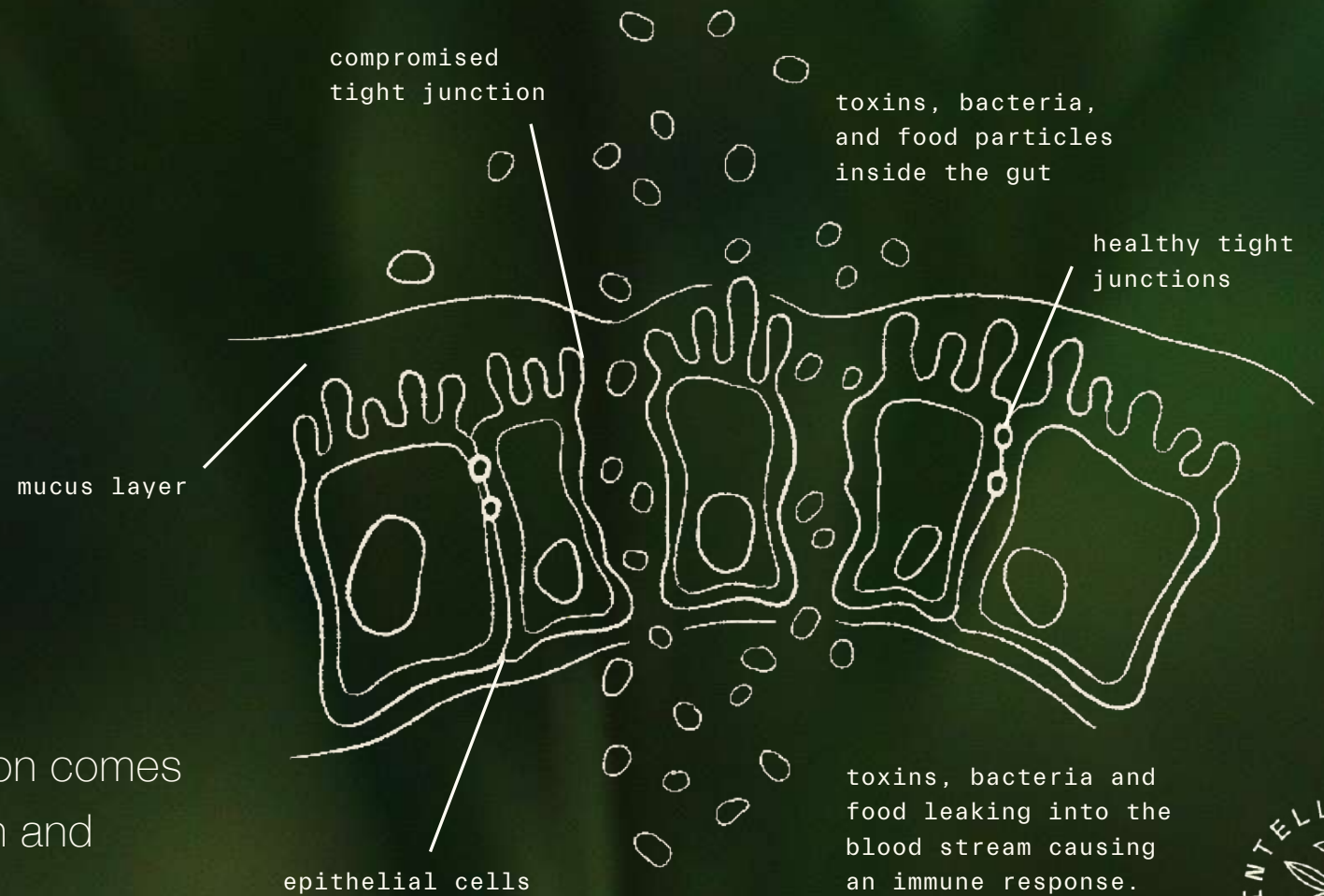


This is your gut membrane on glyphosate.

There is a growing body of well-developed science that demonstrates that the tight junction barrier in the gut can be degraded with exposure to glyphosate.



Communication Breakdown



With a breakdown in tight junction function comes a breakdown in microbial communication and ultimately a breakdown in health.





The
60-million-year-old

answer

ION* is the Intelligence of Nature

- Humic extract derived from ancient soil.
- Fulvate (bacterial metabolites + trace minerals) is the unique family of molecules in this humic extract.
- These fulvates are the molecular communication network of the microbiome (microbe to microbe and microbe to cell).



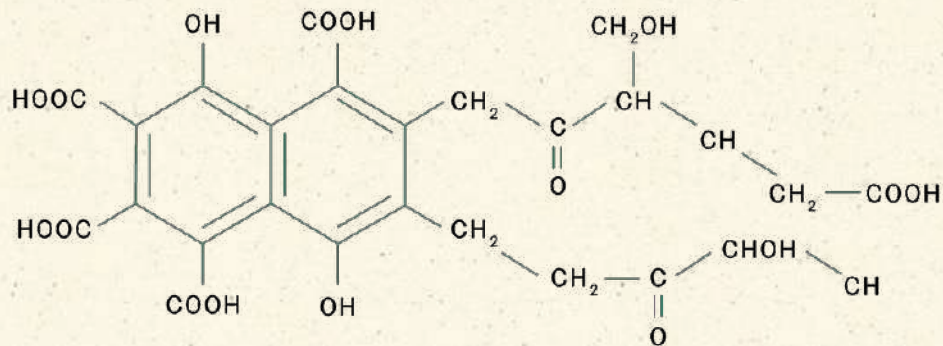
Fulvate vs. Fulvic

Fulvate = bacterial metabolites + trace minerals in soil

- Not bacteria, but made by bacteria
- The active fraction of humic extract that facilitates human health
- Unique from fulvic acid, fulvate binds to metal ions instead of hydrogen, allowing for better electron transfer, aka redox signaling (cellular communication)

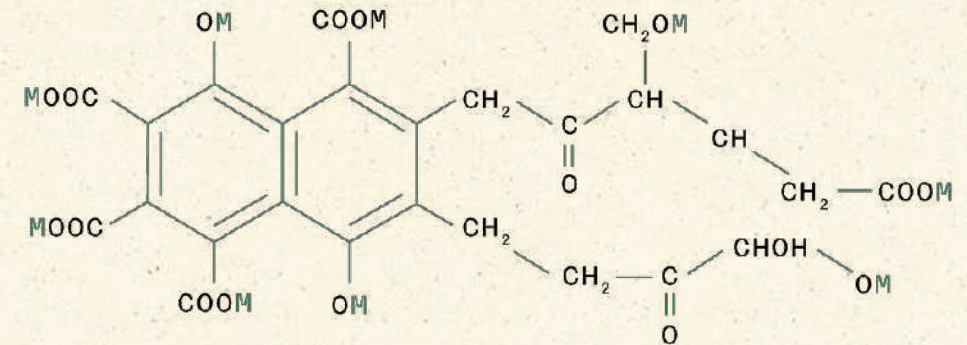


Fulvic Acid



Already bonded to hydrogen, One-way communication, Only takes

Fulvate



Bonds to multiple ions, two-way communication, Gives + Takes

The Power of Fulvates

- Antioxidant

acts as an antioxidant by donating electrons to free radicals and by upregulating natural glutathione production in the body.

- Carrier

binds to essential nutrients and transports them into the cells that need them.

- Chelator

chelates to waste found within cells and removes them, providing a gentle cellular detox.

- Communicator

transmits messages via redox signaling, cell to cell, and cell to bacteria.

ION* Product Suite

Our innovative blend is present
in our entire product suite.



ION* Gut Support

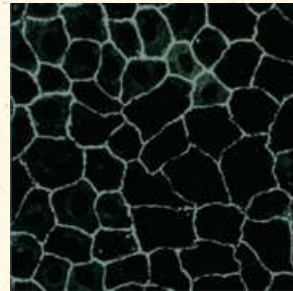
ION* Gut Support benefits:

- *Digestive Support*
- *Immune Function*
- *Nutrient Absorption*
- *Gluten Defense*
- *Gut-Brain Health*

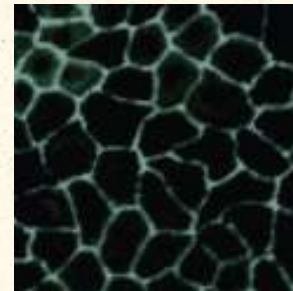


Powered by nature, proven by science.

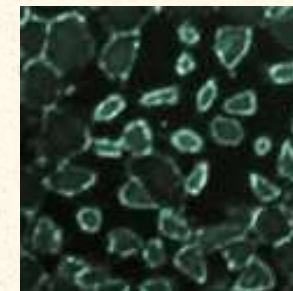
In peer-reviewed studies, ION* is shown to protect tight junction structure even in the presence of glyphosate and gluten:



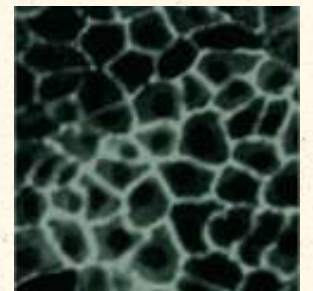
Control



*with ION**



with Glyphosate



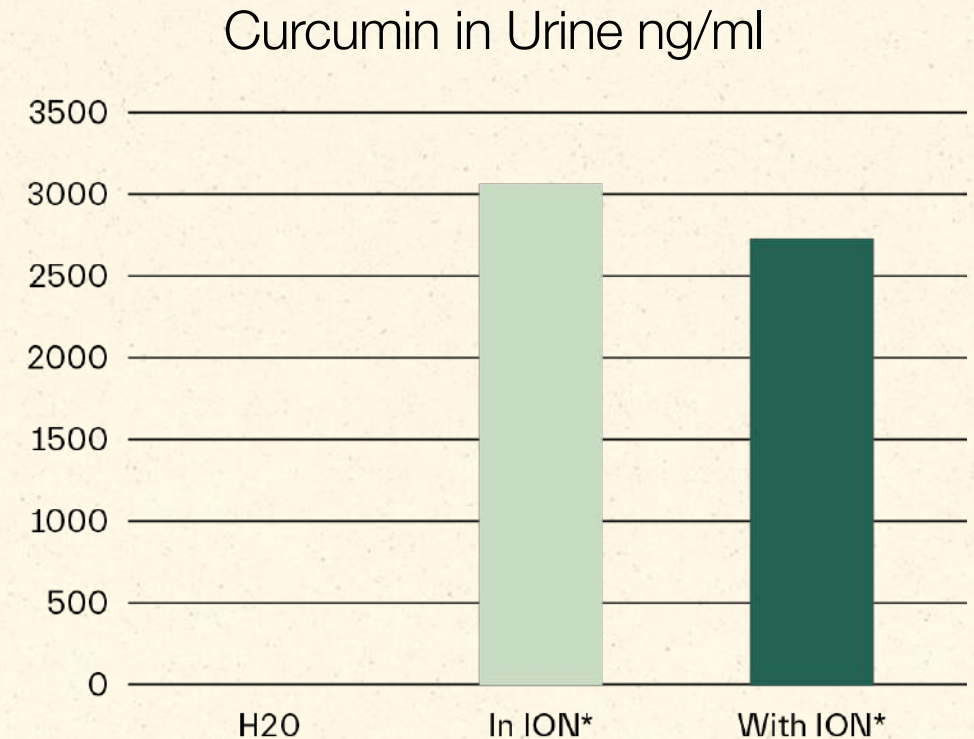
with ION + Glyphosate*

Over two-week human trials, ION* was shown to:

- Lower Zonulin levels by 12% (the protein that is triggered by gluten and glyphosate and weakens our tight junctions)
- Lower Glyphosate levels by 23%
- Decrease inflammation and lower IL-6 (an inflammatory marker) by 17%
- Increase Lysine production by 114%
- Boost Glutathione levels by 53%

Our nutrient absorption data

- Preliminary data (average of multiple experiments) highlighting the ability of ION* to help absorb curcumin, measured in urine four hours after ingestion.
- First bar shows curcumin taken with water
- Second bar shows curcumin fully dissolved in ION*
- Third bar shows curcumin taken with ION* but not dissolved



ION* Gut Support for Pets

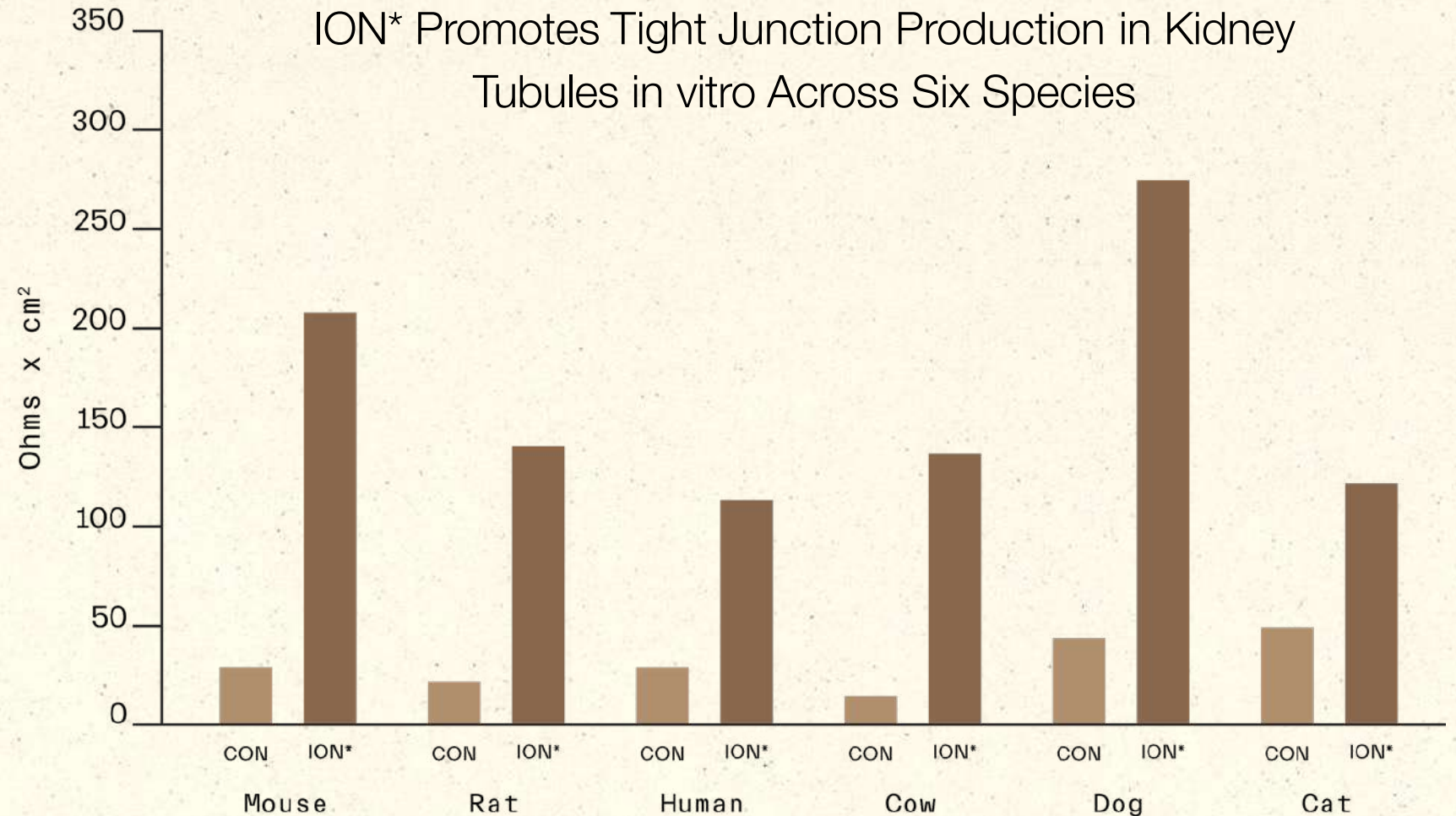
Silicon: known to support collagen production as well as skin, coat, and bone health.

ION* Gut Support For Pets benefits:

- *Digestion*
- *Kidney Function*
- *Immune Function*
- *Vitality*



ION* Gut Support for Pets



ION* Skin Support

Silicon: known to support collagen production as well as skin, hair, and bone health.

Zinc Gluconate: anti-inflammatory and known to regulate immune response on the skin.

Magnesium Citrate: acts as a calming agent and fortifies the skin's natural moisture barrier.

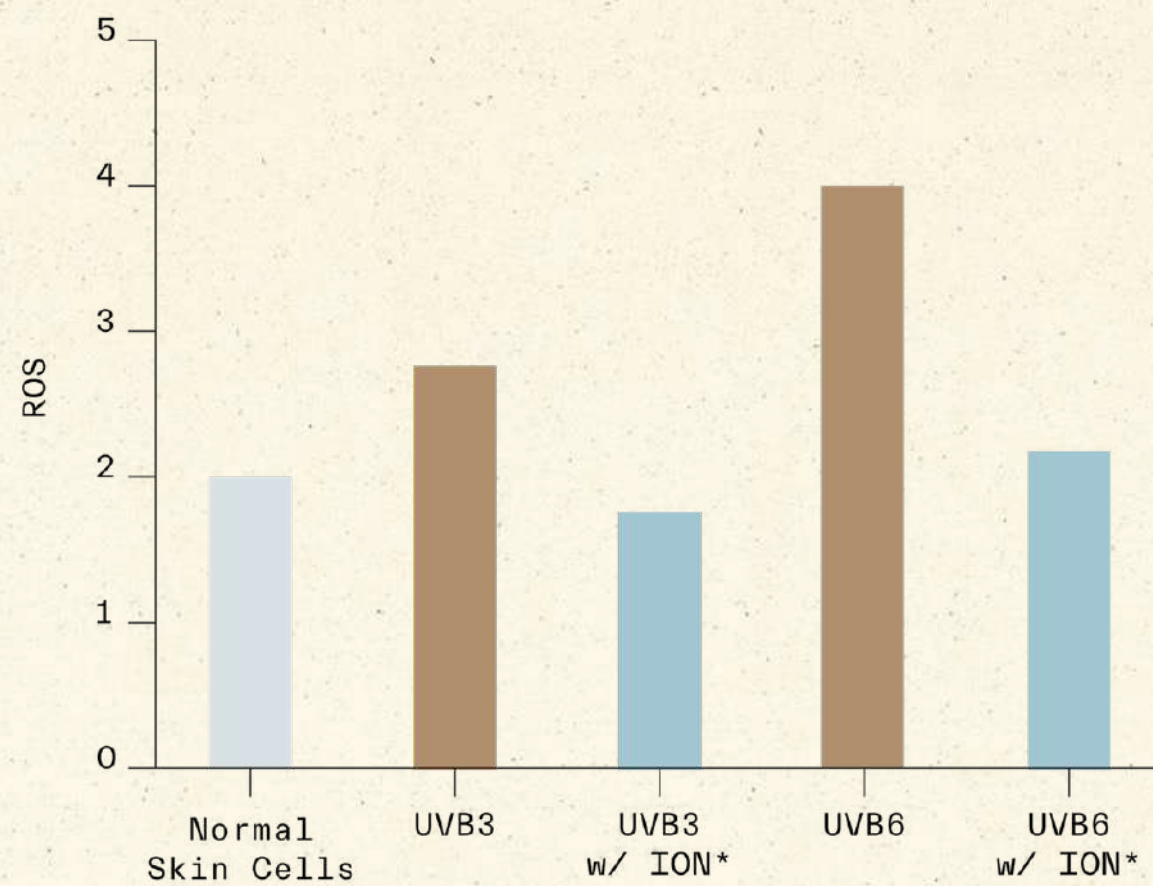
Copper Gluconate: proven to improve skin's firmness by promoting collagen + elastin production.

ION* Skin Support benefits:

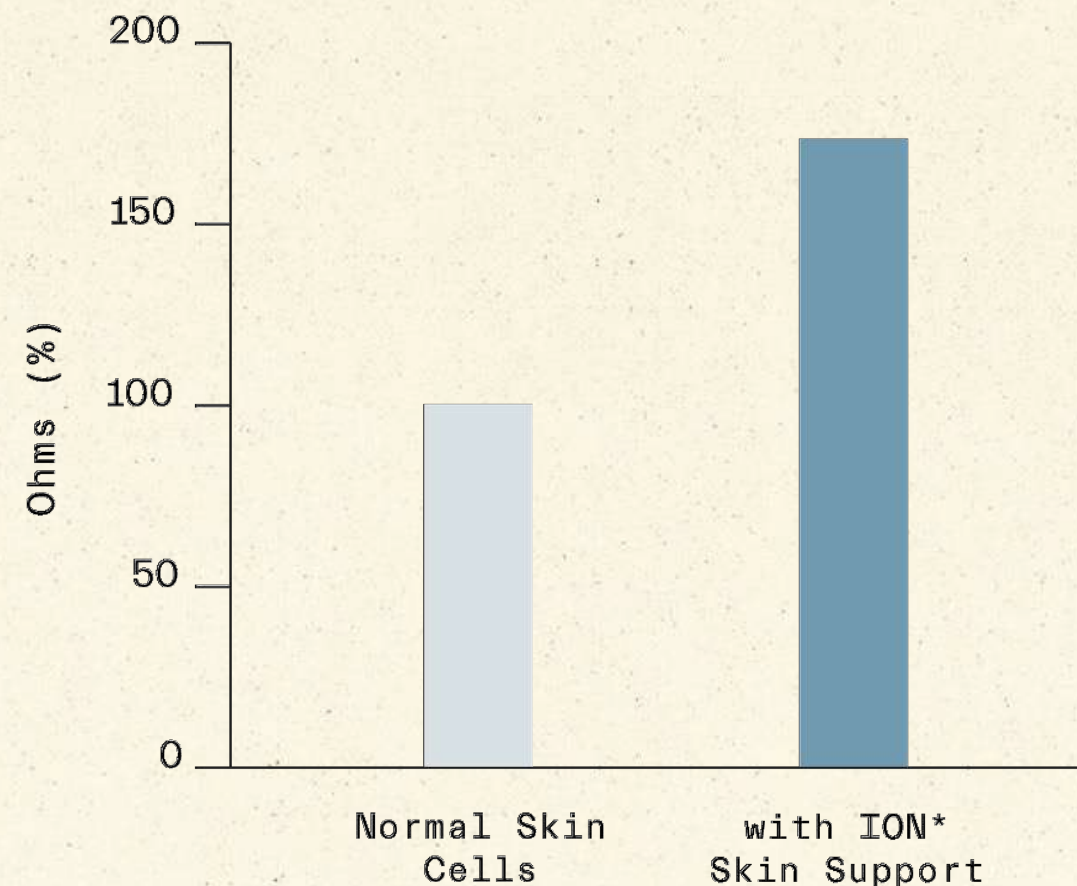
- *Protects Against Toxins*
- *Reduces Signs of Skin Damage*
- *Balances Complexion*



Stabilized ROS production with addition of ION* Skin Support



Tight junction increase in skin cells with addition of ION* Skin Support



Beyond balance, antioxidants are key.

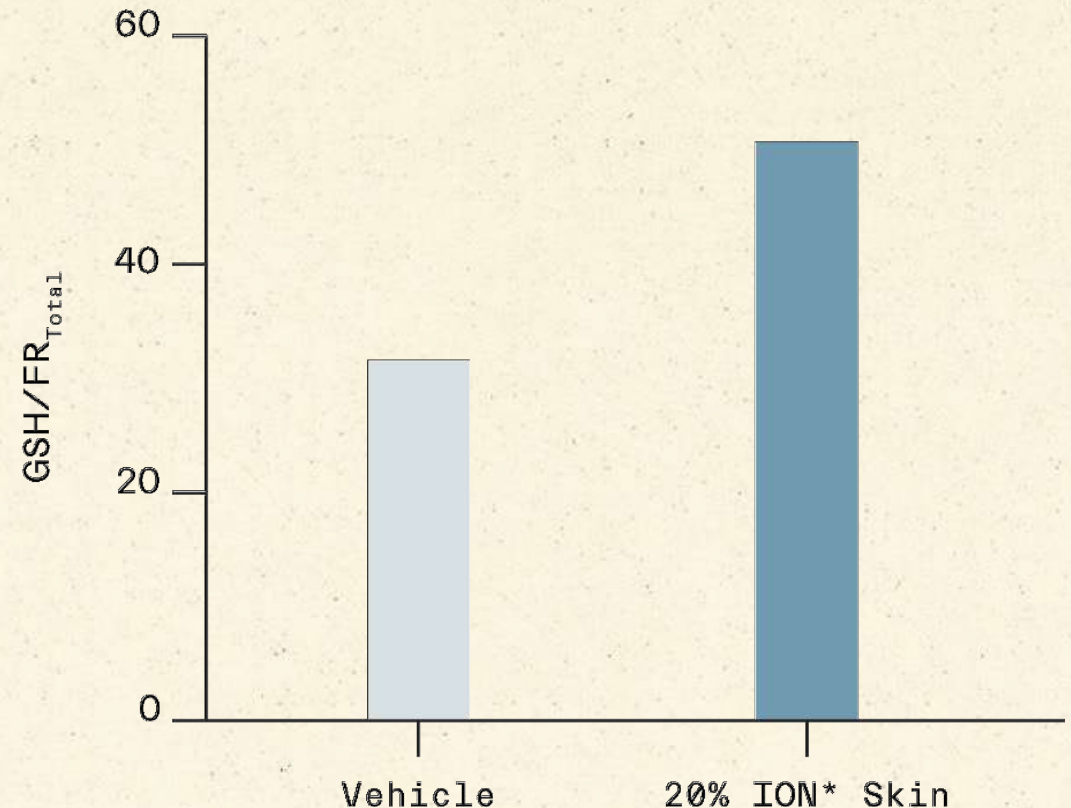
Glutathione is a powerful antioxidant made by your body and found in almost every cell.

It is critical to preventing damage and resultant disease caused by reactive oxygen species.

Glutathione helps to:

- Neutralize free radicals
- Boost immune function
- Detoxify the body

Stabilized free radical production
with addition of ION* Skin Support



We haven't stopped with the microbiome

Our mission is macro.

Just as our passion for root-cause solutions led us to ION*, it has continued to lead us in all aspects of health. We are forging a path to restoration across the planet, and it is critical that our pursuit of health begins with reconnecting to nature.

We are dedicated to supporting a better world for future generations by contributing to Farmer's Footprint.



It's time to get back to the way of nature

Farmer's Footprint, a 501(c)(3), is a coalition of farmers, educators, doctors, scientists, business leaders and a passionately engaged community aiming to expose the human and environmental impacts of chemical farming and offering a path forward through regenerative agricultural practices.

Learn more at www.farmersfootprint.us



