

A scenic landscape featuring misty, jagged mountains in the background, a dense green forest in the middle ground, and a river in the foreground with a small boat. The overall atmosphere is serene and natural.

**layn** *Natural  
Ingredients*

**Driving Innovation for Pet Brands With  
Botanical Solutions**





# Planned Growth To Scale Global Operations



1995

## 1ST GENERATION

(1995 – 2002)

Production begins as Layn takes advantage of local plant resources, **Ginkgo Biloba, Monk Fruit, Sweet Blackberry Leaf**



2002

## 2ND GENERATION

(2002-2010)

Layn builds state-of-the-art facility, product portfolio broadens to **80+ NEW botanical extracts**



2010

## 3RD GENERATION

(2010-2017)

New facility with substantial updates to **drive R&D efforts** focused on **Natural Sweeteners**



2017

## 4TH GENERATION

(2017-Present)

Layn invests in **cutting edge facility** that **more than quadruples capacity** and supports industry-leading innovation

# State-of-The-Art Production Facilities To Provide Quality & Value



- ❑ Global capacity & scale (4x previous)
- ❑ 3 Lines: Stevia, Monk Fruit, Botanical extracts
- ❑ Automatic control production lines
- ❑ Advanced product quality systems
- ❑ Production cost efficiency
- ❑ Environmentally friendly



# Global Growth Most Recently Adding CBD & Other Cannabinoids





# Five Strategic Divisions Focused on Functional Botanical Extracts

Plant-Based  
Sweeteners

TerraSweet

CBD  
&  
other  
Cannabinoids

HEMPRISE

Nutraceuticals  
&  
Personal care

Nutrae™

Functional  
botanical  
extracts

Plantae™

Animal  
& Pet  
Nutrition

TruGro™

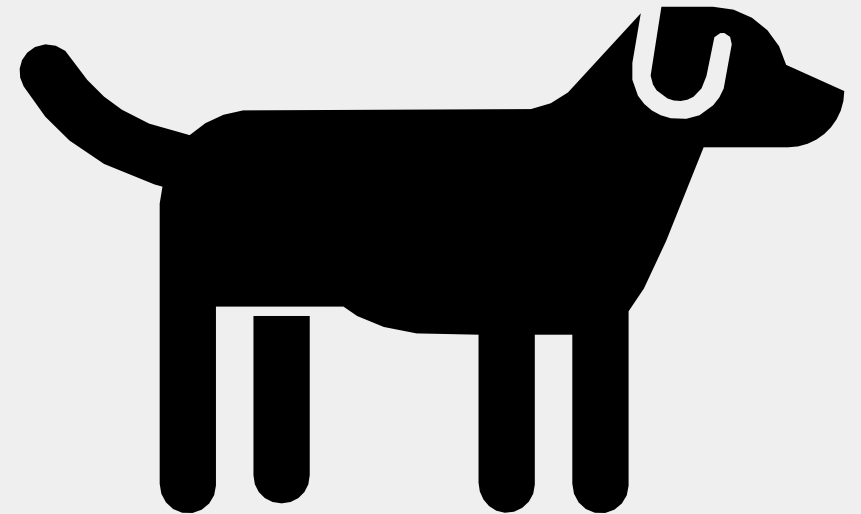
# Layn's Value Proposition

- 25 plus years of manufacturing excellence in botanical extraction
- Vertically integrated supply chain
- Specific functional solutions and single ingredients to achieve ultimate performance
- Flexibility and customization
- Consistency and standardized quality
- Innovation and incubation program



Pet Food Market

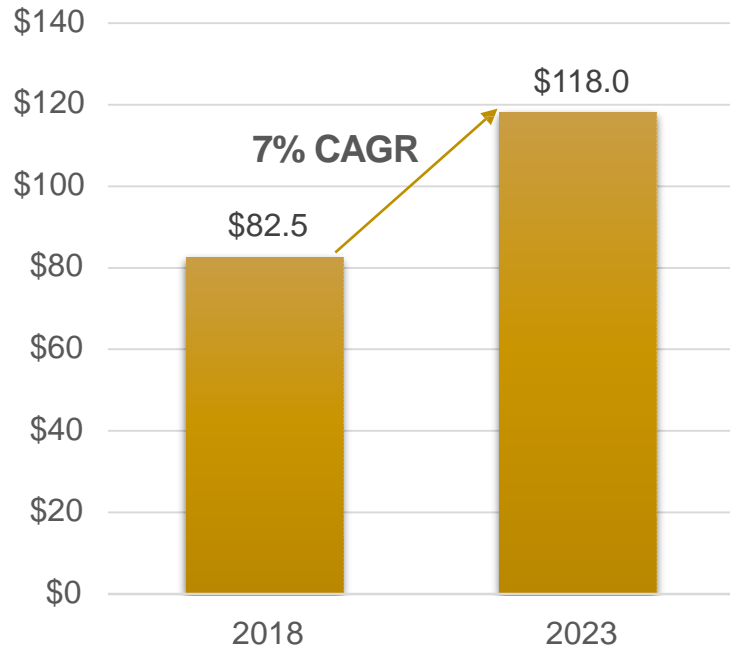
# GLOBAL PET FOOD MARKET



# Global Pet Care Category: Large & Growing

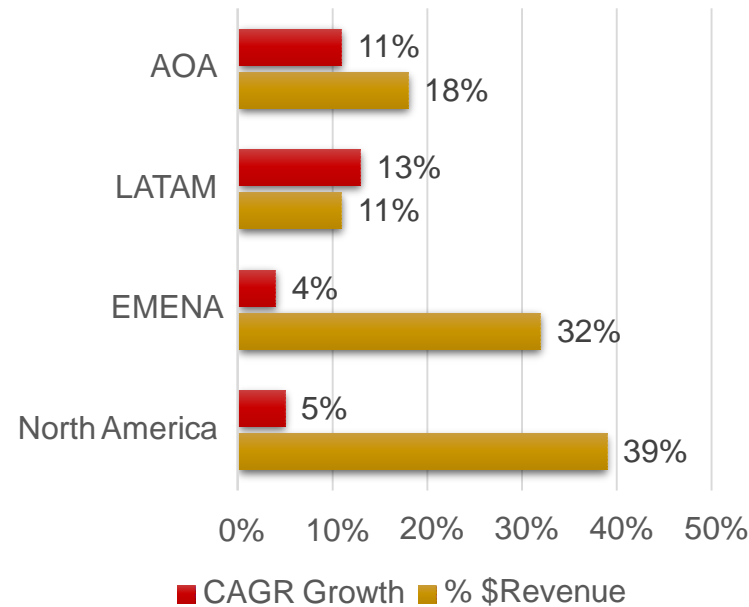
## Category Outlook

US\$ Revenue (Billion)



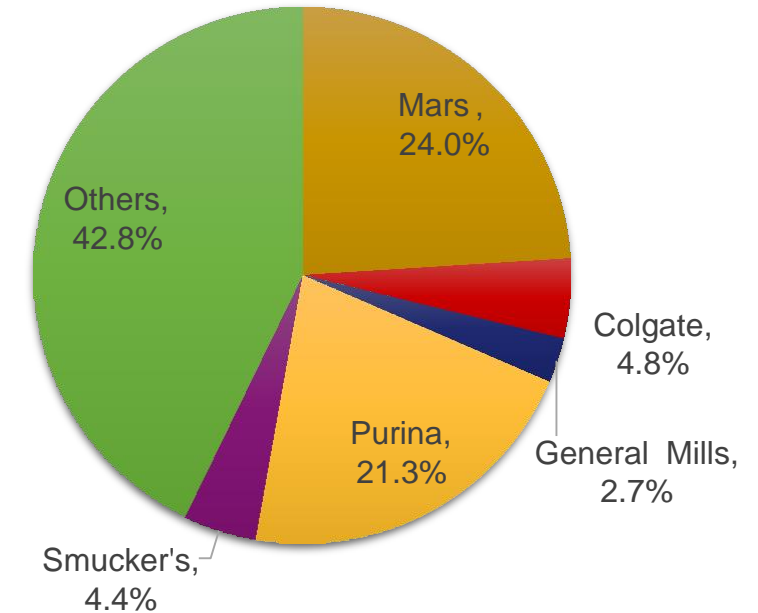
## Regional Growth

Category 2018: US\$ Revenue 82.5 B  
CAGR 2016-2018: +6%



## Competitive Landscape

Market Share



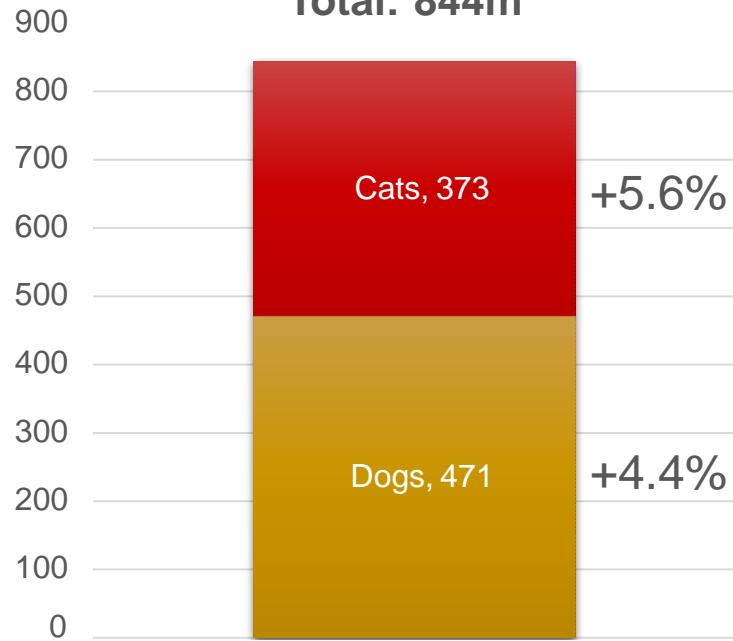




## Pet Population\*

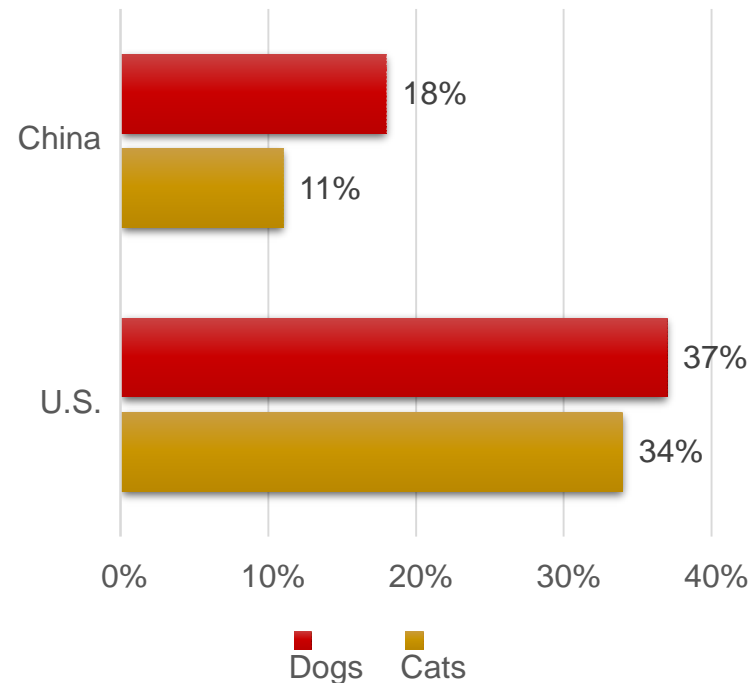
# of Pets (millions)

**Total: 844m**



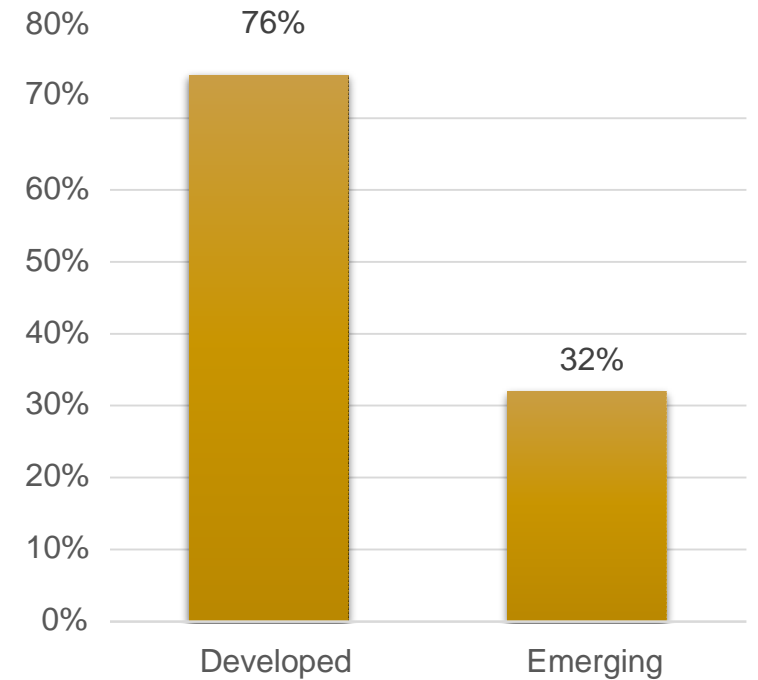
## Pet Ownership

% Household Penetration



## Emerging Markets

Commercial Coverage %\*\*

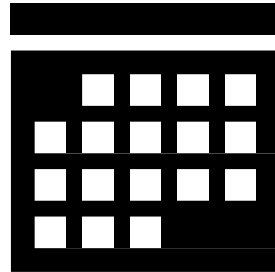


\*Pet population vs 2017; Source: Euromonitor 2019 edition, 2018

\*\* Commercial coverage refers to % of overall pet nutrition derived from commercially prepared pet food

# Younger Generations: More Valuable Than Ever

Acquiring Pets Younger –  
8 years Earlier\*



Already Spend More on Pet Food/Treats\*\*\*

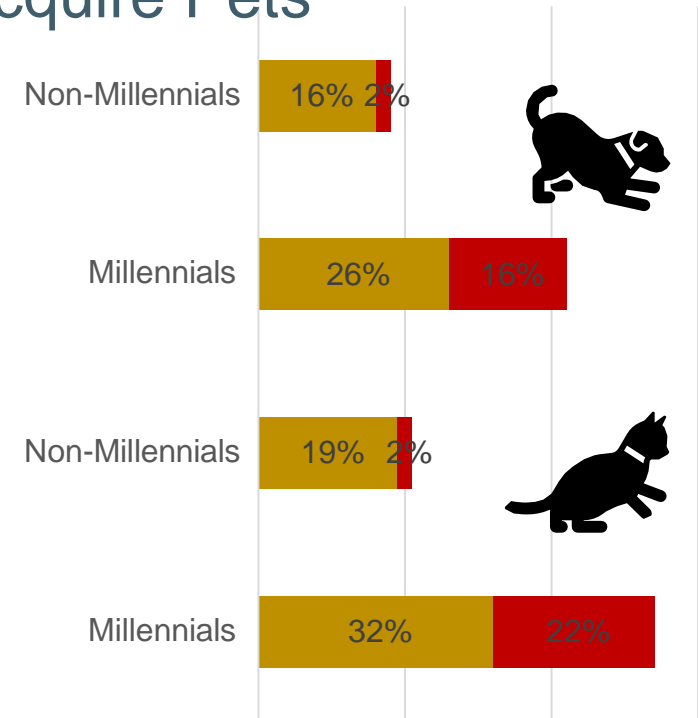


More Likely to  
want to take pet  
everywhere\*\*\*\*



Stronger Future Intent to  
Acquire Pets\*\*

- Intend to acquire another pet in NEXT 12 MONTHS
- Intend to EVER acquire another pet



\*Source: Wakefield Research (2014)

\*\* Pet Attitude Study (2017)

\*\*\* Directions Millennial Pet Category Behavior Tracker (September, 2018)

\*\*\*\* Clear Millennial Study (2018)

# PET CARE IS HIGHLY ATTRACTIVE





Pet Food Market

# INDUSTRY SUMMARY & TRENDS

GLOBAL PET FOOD MARKET TO  
SHOW AN IMPRESSIVE CAGR  
OF 6% FROM 2019 TO 2029  
WITH VALUATION EXPECTED TO  
REACH US\$ 168.3BN



GENERATION Z AND MILLENNIAL CUSTOMERS ARE INCREASINGLY ADOPTING PETS AND FOLLOWING ALL THE RELATED FASHIONS AND TRENDS ABOUT PETS; DEMAND PLANT-BASED PET FOOD PRODUCTS TO BE FAVORABLE







PET OWNERSHIP AND PET 'HUMANIZATION' ARE THE TWO MOST IMPORTANT TRENDS SHAPING DEVELOPMENT OF THE GLOBAL MARKET.

*Increasing demand for premium quality products is driving leading manufacturers in the global pet food market to use higher quality materials and ingredients.*

# Pets' Portfolio

**TruGro<sup>®</sup> by layn.**

[www.layncorp.com](http://www.layncorp.com) | [info@layn-latam.com](mailto:info@layn-latam.com)

POLYPHENOL-RICH BOTANICAL EXTRACTS  
SOLUTIONS FOR PETS NUTRITION

## **TruGro<sup>®</sup> AOX**

Technological antioxidants

## **TruGro<sup>®</sup> CARE**

Supplements

## **TruGro<sup>®</sup> INTEGRITY**

Intestinal health

## **TruGro<sup>®</sup> RELIEF**

Hemp full spectrum oil & CBD





# Polyphenols

Phenolic acids

Flavonoids

Other  
Polyphenols

H-cinamic

H-benzoic

Anthocyanins

Flavanols

Flavanones

Flavonols

Isoflavonoids

Terpenes

Caffeic

Rosmarinic

Punicalagin

Ellagic acid

Cyanidin  
Malvidin  
Peonidin

Catechins EC  
ECG EGCG  
Procyanidins

Naringein  
Hesperetin

Quercetin  
Kaempferol,  
Myricetin

Daizidin  
Genistein

Carnosic,  
carnosol



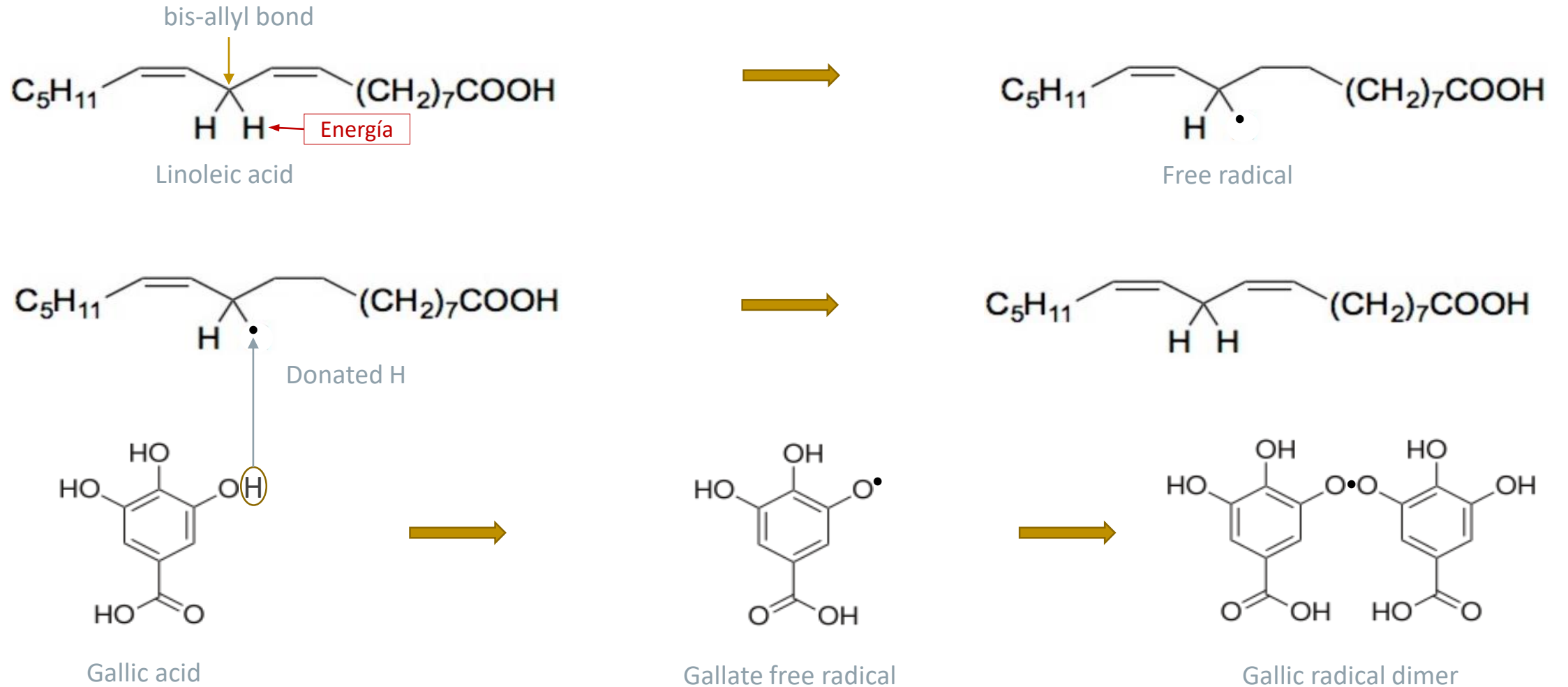
## TruGro™ AOX



## TruGro™ AOX

Natural platform that includes solutions based in polyphenol-rich botanical extracts to extending the shelf life of lipids and the pet foods.

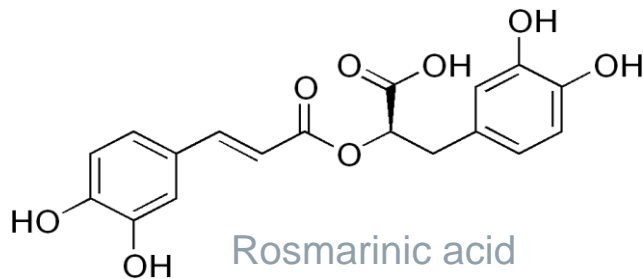
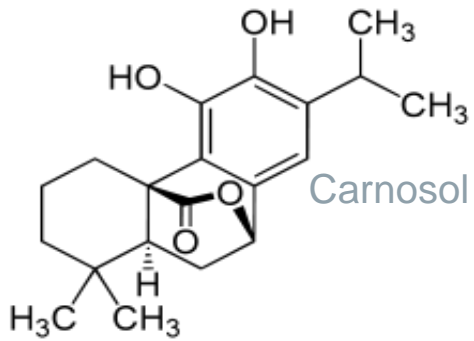
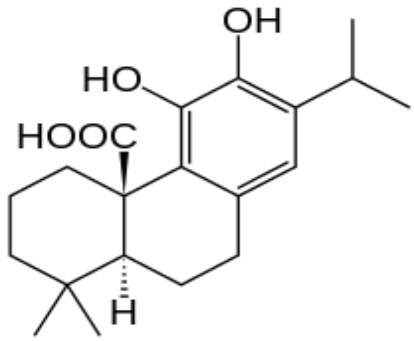
# Radicalary Reactions And Antioxidant Mechanism



# Diterpenes From Rosemary, Catechin And Gallic Acid Derivatives

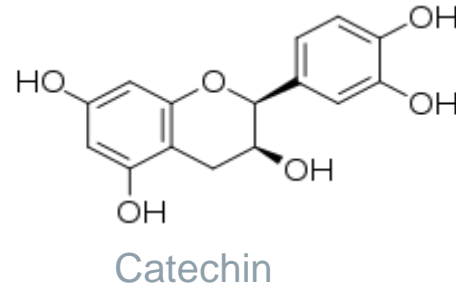
## Rosemary diterpenes

Ácido carnósico

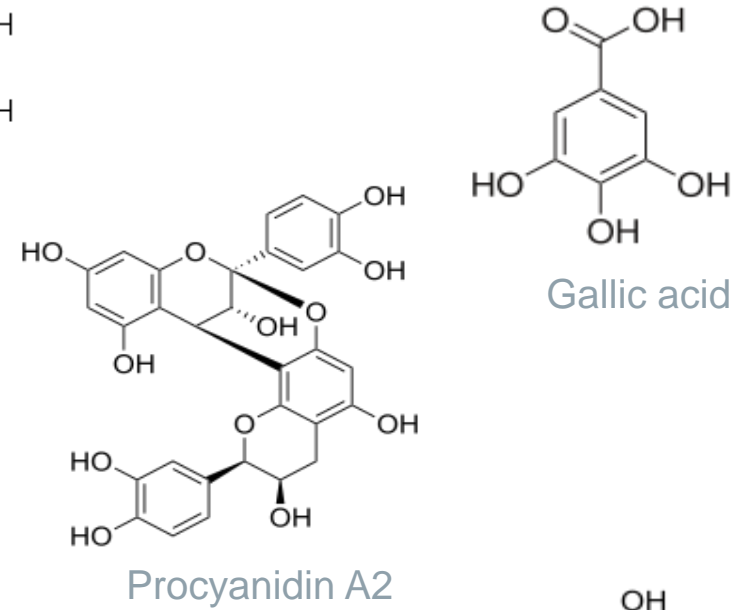


Rosmarinic acid

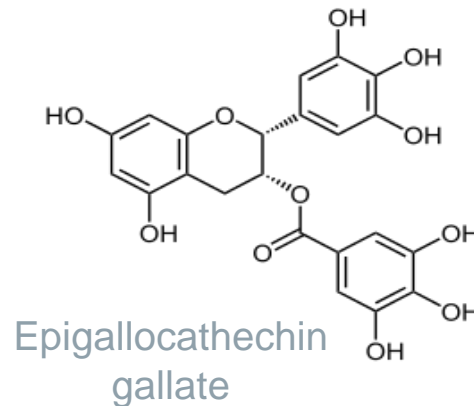
## Catechins and gallic acid



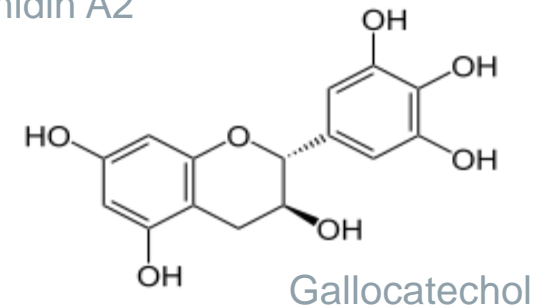
Catechin



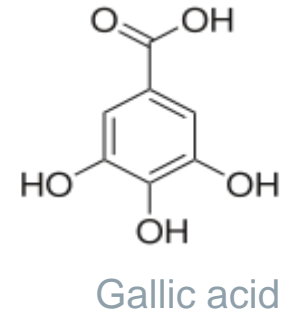
Procyanidin A2



Epigallocatechin gallate



Gallocatechol



Gallic acid



# TruGro™ AOX ASSESSMENT

## Analytical Approach in Fats & Oils: TruGro™ AOX

- Methodology: Rancimat oxidative Stability Index, expressed as OSI hours, international standards AOCS Cd 12b-92 and ISO 6886
- Equipment: Metrohm Rancimat 743
- Substrate: Fats and Oils
- Reference: synthetic antioxidants
  - BHA 150 ppm
  - BHT 150 ppm



# Comparison With Synthetic Antioxidants In Various Lipids

**TruGro against synthetic antioxidants in high unsaturated oils by Rancimat**

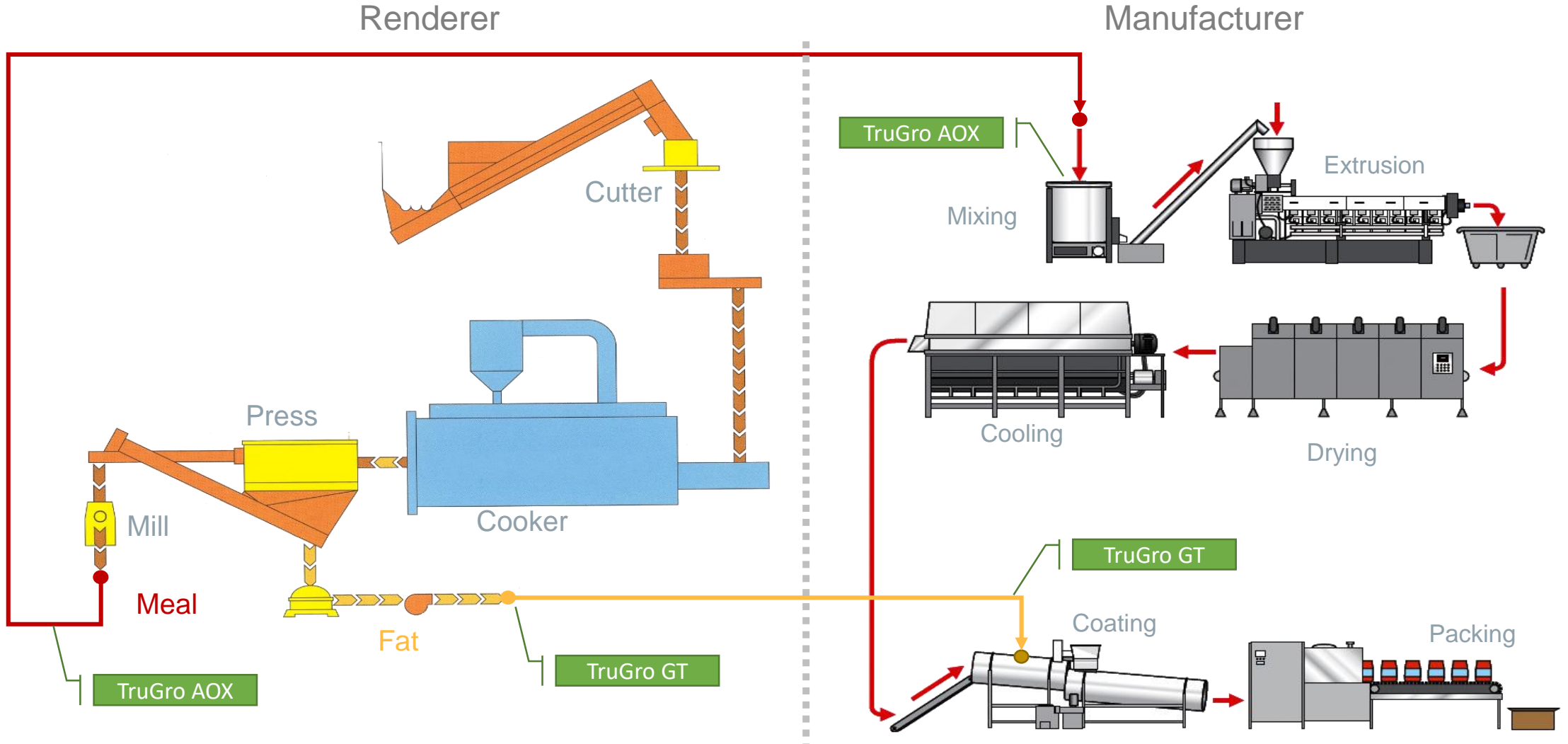
	Run 1	Run 2	AVG	% stability increase
<b>Soy oil</b>				
Blank	5.65	5.60	5.63	
BHA 150 ppm	5.74	5.62	5.68	1
BHT 150 ppm	6.24	6.05	6.15	9
AOX 1112 150 ppm	6.68	6.94	6.81	21
AOX 1113 150 ppm	6.32	6.53	6.43	14
<b>Sunflower oil</b>				
Blank	15.04	14.56	14.80	
BHA 150 ppm	16.62	16.55	16.58	12
BHT 150 ppm	17.32	17.27	17.29	16
AOX 1112 150 ppm	20.96	21.18	21.07	42
AOX 1113 150 ppm	19.09	19.19	19.14	29



## Recommended Products

- **TruGro™ AOX 1112**
  - A selected combination of standardized botanical extracts being the choice antioxidant product for lipids with high unsaturation index: soy oil, canola oil, peanut oil, sunflower oil or palmoleins.
  - Add to dry feed at a rate of 30 ppm/1% fat, for 18 months shelf life
- **TruGro™ AOX 1113**
  - A selected combination of standardized botanical extracts being the choice antioxidant product for lipids with low unsaturation index: lard or tallow
  - Add to dry feed at a rate of 30 ppm/1% fat, for 18 months shelf life
- **TruGro™ GT OS**
  - A selected combination of standardized botanical extracts being the choice antioxidant product for lipids with high unsaturation index for external kibble coating: soy oil, canola oil, peanut oil, sunflower oil, or chicken oil.
  - Add to coating lipids at a rate of 10 ppm/1% fat, for extended shelf life.

# TruGro™ AOX Application In The Industry



# TruGro™ CARE



## TruGro™ CARE

Natural platform that includes polyphenol-rich botanical extracts as nutritional supplements for pets, helping to maintain the pet's adequate nutritional and metabolic balance.

## Portfolio

- Citrus flavonoids
- Epimedium
- Ginkgo Biloba extract
- Grape seed extract
- Green tea extract
- Green coffee bean extract
- Mango leaf extract
- Monk fruit extract
- NHDC
- Pomegranate extract
- Rhodiola extract
- Rosemary extract
- Seaweed extract
- Stevia extract
- Sweet blackberry extract



## Polyphenols-rich Extracts Functionalities

- Anti-inflammatory, joint health, arthritic conditions
- Anxiety/mental function
- Gut health support
- Intestinal microbiome wellness
- Powerful natural antioxidant capabilities
- Skin and coat health
- Immune health
- Eye health

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Contact our team for more information



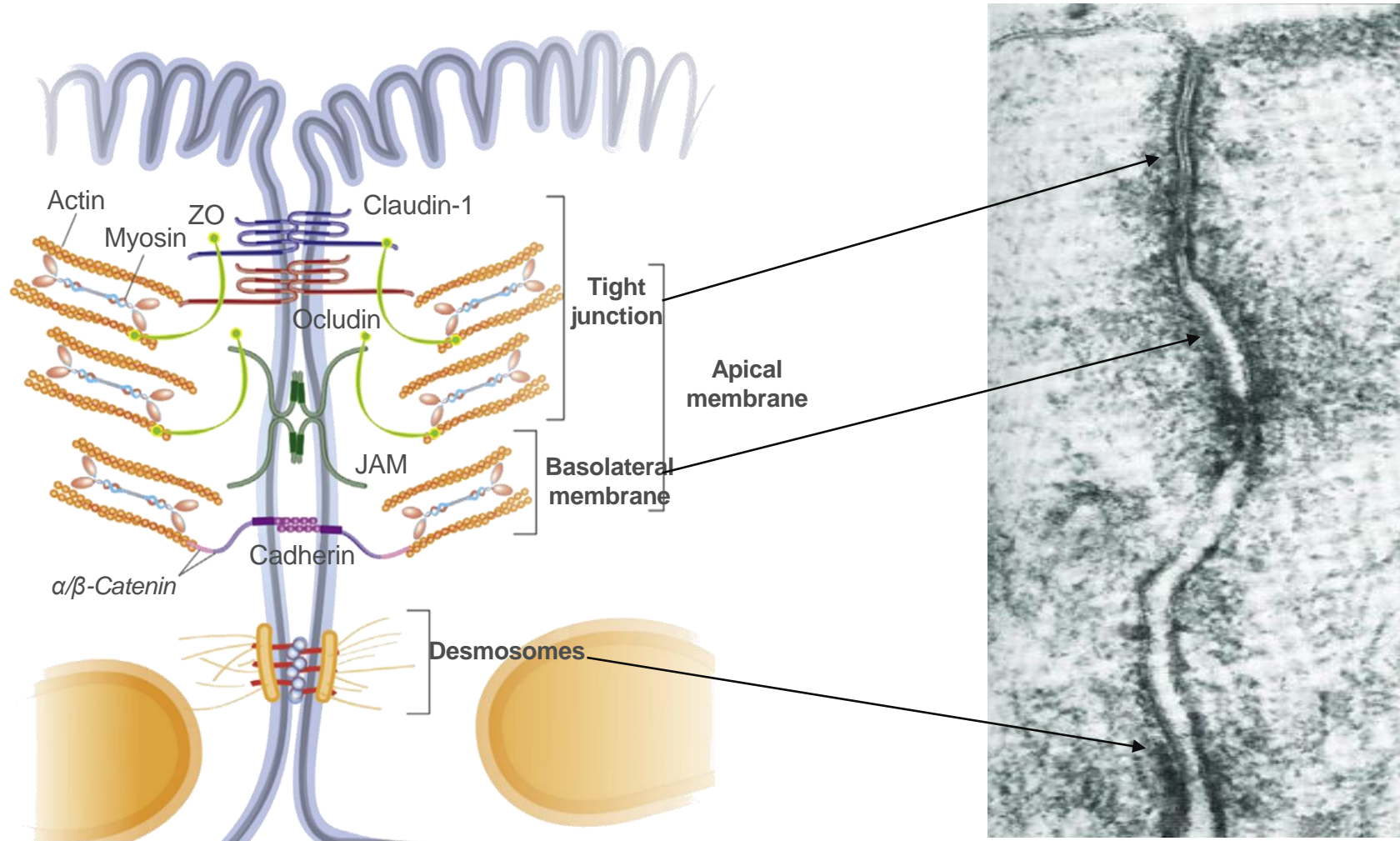
## TruGro™ INTEGRITY



## TruGro™ INTEGRITY

Natural platform that includes solutions based in polyphenol-rich botanical extracts, maintaining intestinal barrier function and health for improved animal welfare.

# TruGro™ INTEGRITY





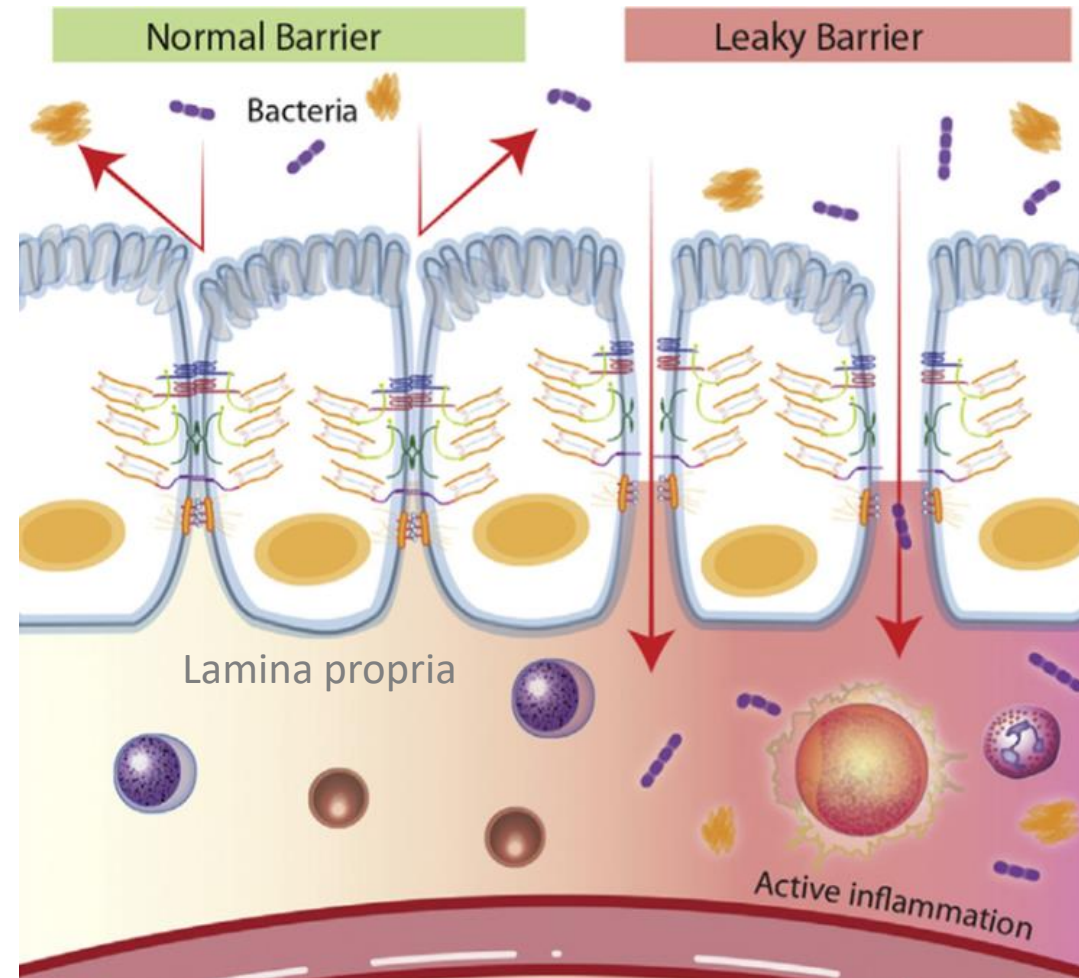
# Alterations In Intestinal Permeability

## Normal Barrier

- Intracellular structures are preserved and play as gate keepers for microorganisms and potential reactive substances. There is no inflammation nor signs of its existence; merely transfer of water, anions and other low molecular weight substances.

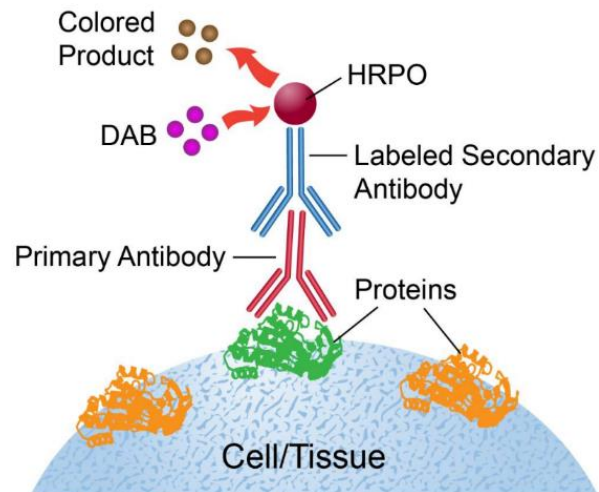
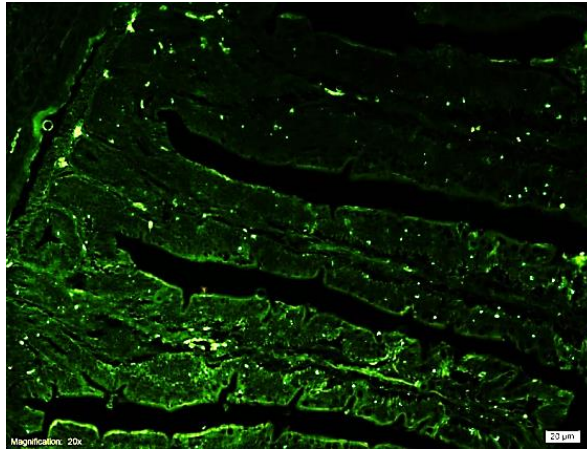
## Leaky Barrier

- Intracellular structure is altered. Microorganisms, high molecular weight substances, transit thru the intestine into the lamina propria. Inflammatory reactions are ineludible

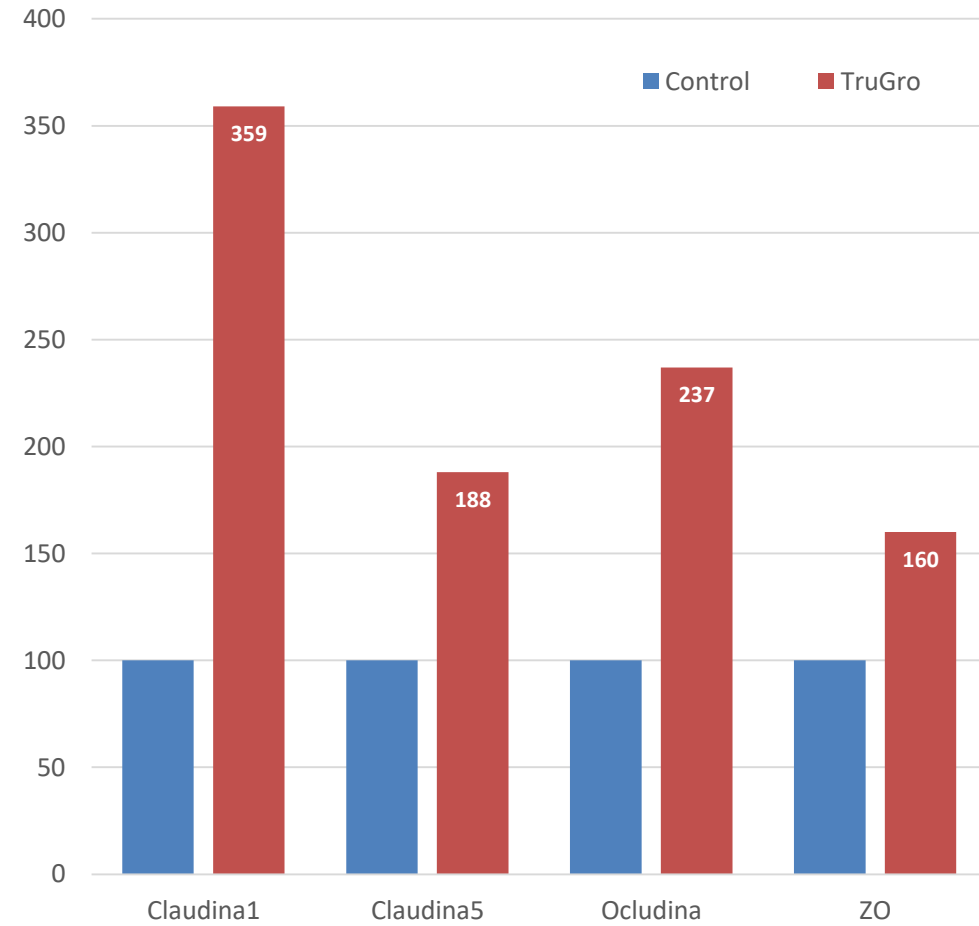




# TruGro™ INTEGRITY



Tight Joint proteins relative prevalence



## TruGro™ INTEGRITY

### INTESTINAL HEALTH

- Intestinal integrity and overall health is a must to prevent pet diseases

### BARRIER FUNCTION

- Intestinal barrier function is critical for epithelium performance and constituent proteins.

### POLYPHENOL PERFORMANCE

- Tight joint benefits from polyphenols by avoiding digestive alterations, nutrient absorption and inflammatory processes.



## **TruGro™ RELIEF**

Cannabinoids platform that includes full-spectrum, broad spectrum or isolated CBD from organically grown hemp, contributing to improve pet wellness for a long and balanced life.

## Why CBD & Other Cannabinoids



- Compelling Functional Botanical Extract Benefits to People, Animals & Pets - *it's what we do!*
- 25+ Years Experience
  - ✓ Vertically Integrated Supply Chains
  - ✓ Extraction Expertise (Quality, Consistency, Yields)
  - ✓ Agricultural Management
  - ✓ Food Safety, Testing, & Federal Compliance
  - ✓ Ability to Scale In Fast Growing Industry
- Expand Innovative Ingredient Portfolio & Value to Customers



# Robust HEMP/CBD Product Line

*Full Line of USDA Certified Organic, Organic Compliant, and Conventional Products:*

- HempFULL** Full Spectrum with Full Cannabinoid & Terpene Profile
- HempCLEAN** Full Spectrum Distillate with Full Cannabinoid Profile, Terpenes Removed
- HempBROAD** Broad Spectrum Distillate, Non-Detectable THC
- HempPURE** Purified High CBD Crystals, commonly called "Isolate"
- HempAQUA** Water Soluble CBD for Clear, Transparent Applications



➔ Federally-Compliant, 3<sup>rd</sup> Party Laboratory Tested, Complete Documentation, and Made In the USA.



***Innovate With  
Our Natural Ingredients***

**layn** USA

**Thank You**

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