



The micro-nutrition range: lipid derivatives in homeostasis

BALANCE

new



Palmidol® PEA

A different approach to the endocannabinoid system

Key ingredient: Micronized PEA 100mg per capsule.

Uses:

Provides **relief and helps your pet to live more comfortably** when experiencing unpleasant physical sensations. Promotes correct functioning of the nerve fibers within your pet's body (in the skin, joints, or colon, for example) thanks to PEA. Contains dried algae (a source of astaxanthin, known for its action against free radicals).

Instructions for use:

- Dogs: 1 capsule per 10kg, once a day.
- Cats: 1 capsule, once a day.

To be swallowed directly with food or opened on top of food. The quantity can be increased when starting usage, if needed.

Presentation:

- Box of 30 capsules (GTIN: 3664499000308).
- Dispenser of 20 blisters of 15 capsules (GTIN: 3664499000315).



Palmidol® PEA Guardian of their comfort in life

INTEGRITY

Agepi® ω3

Targeting an AGE ω3 intake

Key ingredients: fish oil (EPA, DHA), vitamin E.

Use: essential fatty acids are essential components of the phospholipids in all cellular membranes. They ensure their integrity and fluidity, and thus have an effect on cellular metabolisms.

They are also precursors to certain mediators such as eicosanoids (prostaglandins, leukotrienes...), which play a role in numerous functions. **They contribute to good skin health, as well as to the proper functioning of numerous organs:** kidneys, brain, heart, joints...

Instructions for use:

One capsule for 20kg per day, this dose can be increased according to diet and intended effect (one for 4kg for the heart). To be swallowed directly or opened and mixed in with food. For small animals, it is possible to adapt dosage by spacing out the doses. To be given for a two-month period or continuously.

Presentation:

- Box of 60 capsules (GTIN : 3401144846443)
- Box 180 capsules (GTIN : 3401151738861),
- Dispenser of 20 blisters of 15 capsules (GTIN : 3664499000261).



MICRO-NUTRITION

new

Palmidol® PEA, prioritises a different approach to that of the **endocannabinoid system,** based on a molecule naturally present in animals.



Relieve and improve the animal's comfort levels with **PEA** (Palmitoylethanolamide)



Facilitate the use by the owner with a simple dosage



Rely on the body's physiological strengths **to balance the endocannabinoid system**



Contribute to keeping cell response (skin, joints, digestive, etc.) **within their homeostatic boundaries** (1)

1. Della Rocca G., Gamba D. Chronic pain in dogs and cats: is there place for dietary intervention with micro palmitoylethanolamide? *Animals*. 2021;11:952.
 2. Gugliandolo E., et al. Palmitoylethanolamide and related ALIAmides: prohomeostatic lipid compounds for animal health and wellbeing. *Vet Sci*. 2020;7(2):78.
 3. Cerrato S., et al. Effects of palmitoylethanolamide on immunologically induced histamine, PGD2 and TNFalpha release from canine skin mast cells. *Vet Immunol Immunopathol*. 2010 Jan 15;133(1):9-15.
 4. Britti D., et al. A novel composite formulation of palmitoylethanolamide and quercetin decreases inflammation and relieves pain in inflammatory and osteoarthritic pain models. *BMC Vet Res*. 2017;Aug 2;13(1):229.
 5. Borrelli F., et al. Palmitoylethanolamide, a naturally occurring lipid, is an orally effective intestinal anti-inflammatory agent. *Br J Pharmacol*. 2015;172(1):142-58.
 6. Merriam F.V., et al. Inhibition of fatty acid amide hydrolase suppresses referred hyperalgesia induced by bladder inflammation. *BJU Int*. 2011;108:1145-1149.

photos Crédits © MP_Labo / Lueurexterne.com / FR_BRO_PALM_01/04_22

45, bd Marcel Pagnol
06130 Grasse - France
+33 4 93 09 85 79
www.mplabo.com

In partnership with CAPdouleur
CHANGE ANIMAL PAIN



www.mplabo.com

MP
LABO
Innovative by Nature

The endocannabinoid system



DID YOU KNOW?

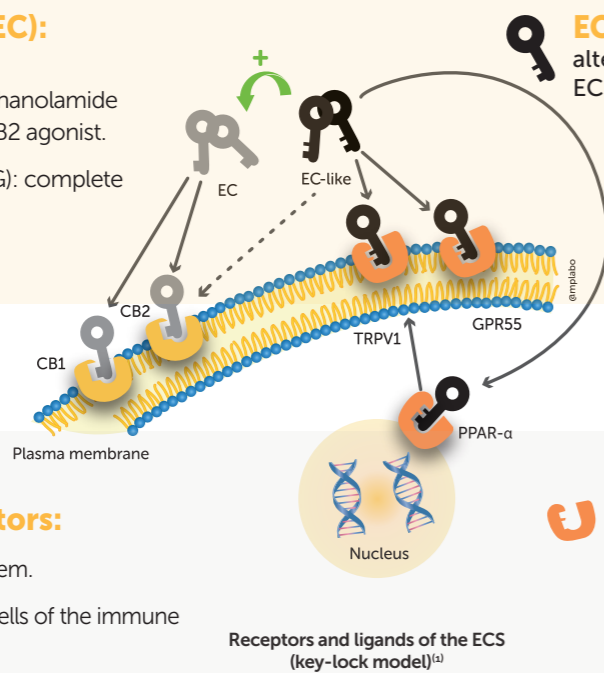
First discovered 30 years ago, the endocannabinoid system (ECS) plays a crucial role in maintaining the body's balance.

FUNCTIONING

The ECS is made up of a group of **receptors located** throughout the body and **natural ligands** that are produced by the body when needed.

Endocannabinoids (EC):

- Anandamide (arachidonylethanolamide = AEA): full CB1 and partial CB2 agonist.
- 2-arachidonoylglycerol (2-AG): complete agonist of CB1 and CB2.



EC-like (fatty acid ethanolamides): alternative receptor agonists and EC facilitators.

- Oleic acid amide (oleoylethanolamide, OEA).
- Palmitic acid amide (palmitoylethanolamide PEA).

Canonical EC receptors:

- **CB1:** in the central nervous system.
- **CB2:** at the peripheral level, in cells of the immune system and lymphoid organs.

Putative EC-like receptors:

- **Membranous:** TRPV-1 (Transient Receptor Potential Vanilloide), GPCR55, GPCR119.
- **Nuclear:** PPAR-α (Peroxisome Proliferator-Activated Receptor alpha).

Receptors and ligands of the ECS (key-lock model)⁽¹⁾

Receptor activation by ECs modulates cell responsiveness to stimuli⁽²⁾.

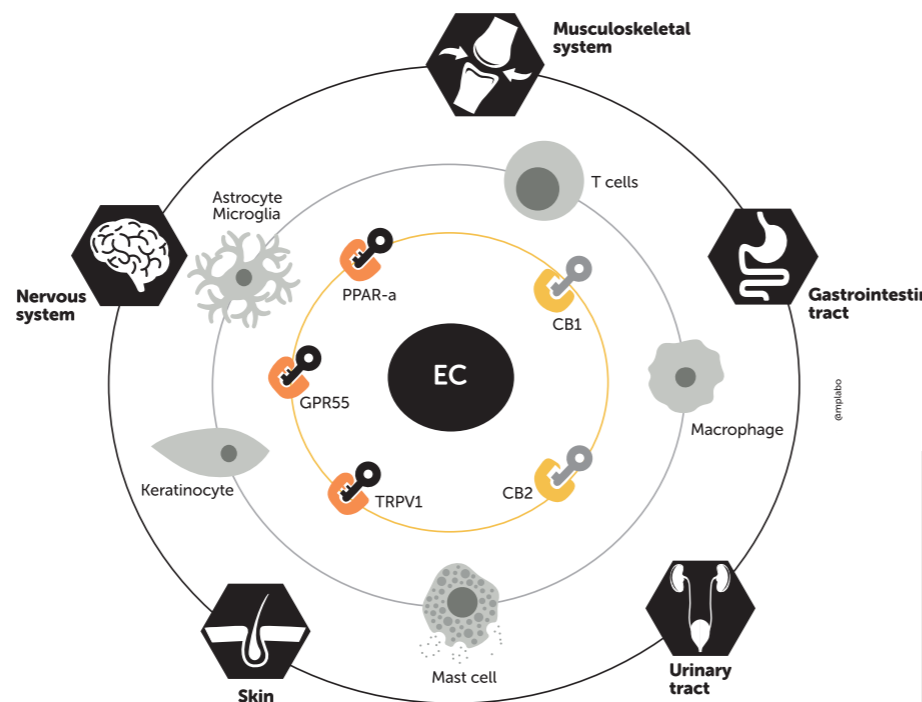
MULTI-TARGET ACTION

ECs are **synthesized and act locally**.

ECs are released directly from cell membranes, which distinguishes them from other messengers (neurotransmitters or hormones) that are synthesized at one site but act throughout the whole body.

Modeling the ECS⁽²⁾:

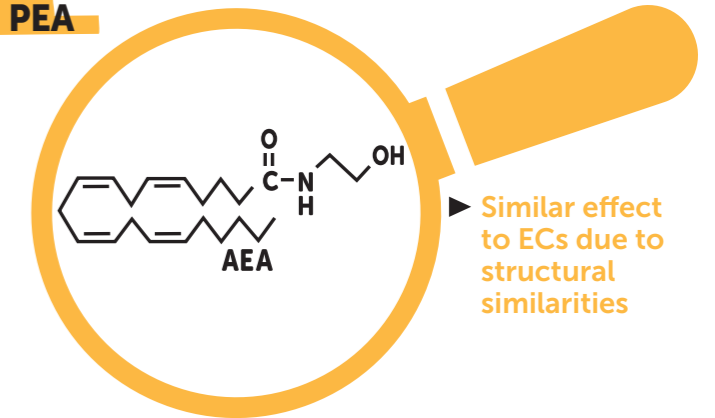
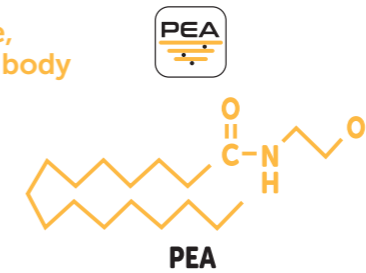
By acting directly or indirectly on the ECS receptors (yellow circle), ECs target different cell populations (grey circle) supporting health maintenance in a variety of body systems (black circle).



Palmidol® PEA: your ally in the quest for animal comfort and well-being

PALMIDOL® PEA, CONTAINS MICRONIZED PEA

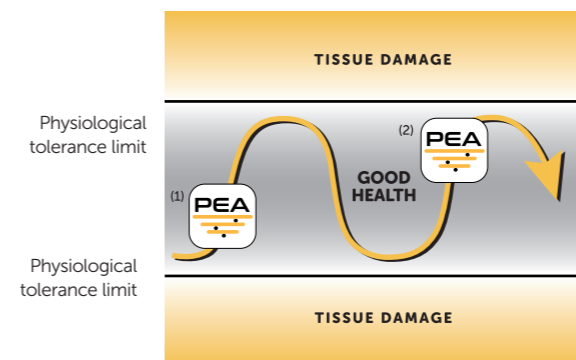
- ▶ **Natural molecule, produced by the body**
Synthesis from membrane lipids



The benefits of PEA

Balance of the endocannabinoid system^(1,2)

- **Direct action** on putative EC-like receptors.
- **Indirect action on canonical EC receptors** by «entourage effect» that increases local EC levels.
- **Well tolerated:** no addiction, system regulated with on demand synthesis.



The pro-homeostatic function of PEA⁽²⁾: tissue homeostasis requires persistent adjustments.

- (1) PEA is synthesized when the body needs it.
- (2) PEA is used to counterbalance tissue hyper-reactivity in response to intense stimuli.

Maintaining homeostasis

- **Cutaneous:** decrease in the release of pro-inflammatory mediators (histamine, prostaglandins, TNFα) y cutaneous mast cells (*in vitro studies*⁽³⁾).
- **Musculoskeletal:** protection of cartilage and normalization of the increase serum concentration in pro-inflammatory mediators (TNFα, IL-1, MMP 1, 3, 9 et NGF) (studies in mice⁽⁴⁾).
- **Digestive:** helps reduce inflammation and intestinal permeability (studies in mice⁽⁵⁾).
- **Urinary:** the increase in ECs could be beneficial in cases of bladder inflammation (studies in mice⁽⁶⁾).

A molecule with multiple targets

PEA overcomes the classic view of «one molecule, one target, one benefit», opening a whole new era in the maintenance of good health: a biomodulation of body responses according to different stimuli.⁽²⁾

PALMIDOL® PEA, CONTAINS DRIED ALGAE

Dried algae is a source of astaxanthin, known for its action against free radicals.

THE BENEFITS OF PALMIDOL® PEA



Provides comfort by balancing the endocannabinoid system



Facilitates usage through a simple dosage



Relies on the body's physiological strengths through a molecule naturally present in the body