

IONTOPHORETIC PATCH

for relieving muscle and joint pain



PRODUCT DESCRIPTION

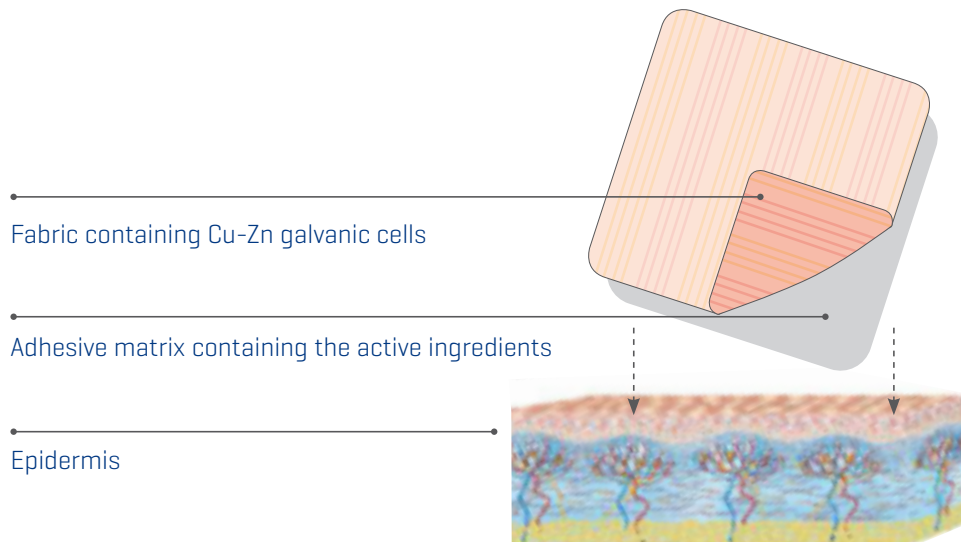
Iontophoretic Patch for Pain Relief is an electrodynamic patch with alternating voltaic cells that uses the principle of iontophoresis to enhance significantly the absorption of active molecules allowing to achieve a greater effect in the relief of chronic muscle and joint pain.

Iontophoretic Patch for Pain Relief represents the evolution of conventional patches, and is much more effective due to its double action:

1. The electromagnetic field created by the patch generates an ion channel which allows a more efficient absorption of the active ingredients migrating through the skin.
2. The electro-ionic action creates a "cell massage" that enhances oxygen exchange between the cells, revitalising the connective tissue. Therefore, **Iontophoretic Patch for Pain Relief** offers stimuli that increase collagen production, thus enhancing skin elasticity and health. Furthermore, it helps safely and comfortably reduce chronic and acute pain, to recover tissue functionality and to speed up wound healing.

As shown in the drawing below, the patch comprises two layers:

- An external tissue layer with galvanic cells of copper and zinc.
- An adhesive matrix containing the active ingredients and the polarising substances.



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INDICATIONS

Iontophoretic Patch for Pain Relief is particularly indicated for:

- Acute and/or chronic muscle pain derived from lesions, sprains, postural...
- Chronic joint and/or rheumatic pain.

ACTIVE INGREDIENTS

As a result of its own intrinsic characteristics, by itself and without needing to add any active substance, **Iontophoretic Patch for Pain Relief** will stimulate collagen formation, thus enhancing skin functionality recovery reducing pain. However, to complement and increase the advantages and indications of the product, several active ingredients have been added, particularly selected to provide the product with further properties.

HARPAGOPHYTUM: Has antiinflammatory and analgesic properties. Also encourages lymphatic circulation, thus helping to eliminate toxins and oxidation material produced in lesions.

ARNICA: With antiinflammatory and analgesic properties, helps regenerate tissue damaged due to contusions or lesions by improving circulation in the area.

MECHANISM OF ACTION

Iontophoretic Patch for Pain Relief is based on **IONTOPHORESIS** to take the active ingredients more effectively to the site of action while obtaining an improvement in the quality of connective tissue and skin.

IONTOPHORESIS consists of introducing active substance ions through the skin induced by the low-intensity current generated by contact of the patch with sweat.

The adhesive matrix contains the active ingredients and polarising substances, so within a few minutes of application, thanks to the occluding effect of the patch, evaporation of sweating fluids occurs and wet the adhesive and the tissue, thus creating micro-currents of about 300 microamperes and a micro-magnetic field of about 4-10 nanoTeslas. All ionic substances present in **Iontophoretic Patch for Pain Relief** have electrical charge and will tend to displace to the opposite sign pole, where they will be absorbed more easily through the skin. Therefore, **IONTOPHORESIS** improves the absorption of substances vs. the conventional topical use of treatments for reducing muscle and joint disorders.

The action of these micro-currents and of the micro-magnetic fields enhance ion exchange, oxygen use and re-establishing membrane potential (determining an increase in the excitability threshold of cells) thus obtaining a high analgesic effect. Because of mechanical, physical or chemical aggressions, membranes are depolarised, thus enhancing dermis aging, pain and collagen loss, so **Iontophoretic Patch for Pain Relief** allows to fight these signs of wearing.

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INSTRUCTIONS

Apply an iontophoretic patch on the painful area, allow to act for 8-12 h, remove and replace by a new one.

Iontophoretic Patch for Pain Relief can be cut if necessary for adapting it fully to the area to be treated.

In high-mobility areas [knees, elbows...], it is recommended to fix with a bandage to ensure adhesion throughout the application period.

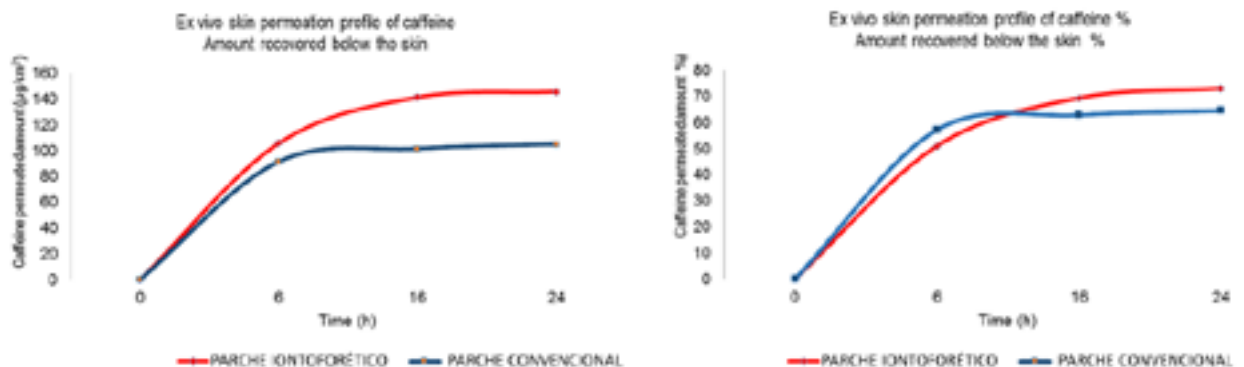
CLINICAL RESULTS

The measurement of micro-currents and magnetic field generated in vitro is evidenced by the study conducted by **Abich Clinical Study**, certified company, which reveals the following results:

	RESISTENCE [kΩ]	POTENTIAL [mV]	INTENSITY [μA]
Negative control	100,40 ± 12,05	13,52 ± 3,24	0,01 ± 0,03
Zn/Cu + sweat pH 4.5	86,54 ± 7,48	462,53 ± 17,18	4,58 ± 0,16
Zn/Cu + sweat pH 4.5	104,75 ± 9,27	449,65 ± 22,11	4,43 ± 0,09
Zn/Cu + sweat pH 5.5	105,72 ± 12,71	443,62 ± 20,12	4,37 ± 0,13

* Values represent the mean ± standard deviation

In relation with the absorption of active ingredients, was conducted by **Abich Clinical Study** an in vitro evaluation of percutaneous absorption of caffeine contained in a iontophoretic patch and conventional dermal patch on reconstituted epidermis. The results, show in the graphics below, reveal iontophoretic patch has a greater capacity of permeation in comparison with a conventional patch.



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Furthermore, recent studies have shown the effectiveness of iontophoretic delivery of a molecule of diclofenac sodium, demonstrating a drug absorption capacity in the injured area that is up to 100 times greater than delivery by oral absorption.

CATEGORY

Medical Device class I.

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