ANAPLASIS

Skin repair ointment for cats and dogs based on natural healing herbs

ANAPLASIS (A-NÁ-PLA-SIS)

The name is inspired by the Greek word « $\dot{\alpha}\nu\alpha\pi\lambda\dot{\alpha}\sigma\sigma\omega$ », which means « to form anew, remodel »

Liddell HG, Scott R. An Intermediate Greek-English Lexicon. Oxford: Clarendon Press; 1889.

An ethnobotanically inspired herbal combination, popular since Greek antiquity, containing beeswax, olive oil, St. John's wort and calendula oils, infused with lavender essential oil. All ingredients were carefully selected to have a long-standing use in wound management and accelerate wound healing. Reformulated from a herbal ointment designed for preventing radiation-induced skin reactions in humans¹.

Olive oil

Olive oil has been popular since Greek antiquity for its skin-protecting effects. Olive oil functions as an antioxidant due to phenols (e.g., hydroxytyrosol and oleuropein), which have been shown to have higher antioxidative properties than vitamin E.

In a study on mice, the healing of pressure ulcers improved after the daily oral application of cold-pressed olive oil for 14 days. This was achieved through antiinflammatory effects, the reduction of oxidative damage, and the promotion of dermal reconstruction^{2,3}.

Calendula extract

There is continuous interest in the use of ointments containing calendula extract during wound healing. Calendula may prevent wound complications since the flower contains secondary metabolites, such as polyphenols, flavonoids and triterpenoids, which could support wound healing action.

In vivo studies in animals^{4,5} have provided evidence for improved recovery from the inflammation phase and increased production of granulation tissue in calendula extract treatment groups. This finding may be explained by the anti-inflammatory and enhanced fibroblasts activation and migration properties of calendula, as observed in the *in vitro* studies. A combination of these effects could potentially explain the wound healing expressed effect.

St John's wort extract

St. John's wort is traditionally used as hypericum oil for the treatment of wounds and burns. The lipophilic phloroglucin derivative hyperforin displays antibacterial, anti-

inflammatory and keratinocyte differentiation-promoting properties⁶.

Three O/W creams containing 15% (w/v) of SJW oil extract as an active ingredient demonstrated significant antiinflammatory effects in an *in vivo* double-blind randomized study, using a sodium lauryl sulphate test⁷.

Beeswax

Beeswax has lubricating, softening activities and reduces transepidermal water loss from skin. These properties are attributed to sterols, which are also components of intercellular space. Squalene and certain flavonoids provide antimicrobial properties to beeswax. Beeswax constitutes a protective barrier against many external factors by forming a film on the skin surface⁸.

Lavender essential oil

Various essential oils but especially lavender have proven promising in the healing of surgical wounds, in particular those arising from episiotomies⁹. In a study on rats¹⁰, topical application of lavender oil promoted collagen synthesis and differentiation of fibroblasts, accompanied by up-regulation of TGF- β . These data suggest that lavender oil has the potential to promote wound healing in the early phase by acceleration of formation of granulation tissue, tissue remodeling by collagen replacement and wound contraction through up-regulation of TGF- β .

TESTIMONIALS¹¹

Intuizoon Anaplasis ointment has been evaluated in vivo for its potential healing properties on cutaneous wound of 3 dogs and 1 cat, through 4 case studies as follows:

- *i)* Feline extended trauma skin detachment (daily application for 60 days) (veterinarian in Athens, Greece);
- *ii)* Dog extended trauma skin detachment after surgical removal of necrotic tissues (veterinarian in Peloponnesus, Greece);
- *iii)* Dog after deep burn, extended skin detachment with bone exposure, after surgical tissue debridement together, after 15 days of broad-spectrum antibiotic therapy (veterinarian in Crete, Greece);
- <u>iv)</u> Dog with face injury caused from bite all over the nozzle (veterinarian in Crete, Greece)

In all four cases, very positive healing results were observed, while especially in case iv, skin was fully healed followed by coat restoring while no discoloration was noticed.

CLINICAL STUDY¹

The preventive role of 3 herbal formulation products on reducing the incidence of radiation-induced dermatitis in patients undergoing radiotherapy for either breast or head and neck cancer was examined. The studied herbal products, consisting of

combination of beeswax, olive oil, *Calendula* and *Hypericum* oils as well as *Aloe* gel, were daily and regularly being used by the patients during radiotherapy until 2 weeks after the end of their treatment. The tested combinations proved to be statistically significantly effective in reducing the intensity of radiation dermatitis, positively affecting the quality of life of the patients.

References

- Koukourakis G, Pissakas G, Ganos CG, Sivolapenko G, Kardamakis D. Effectiveness and Tolerability of Natural Herbal Formulations in the Prevention of Radiation-Induced Skin Toxicity in Patients Undergoing Radiotherapy. *Int J Low Extrem Wounds.* 2022 Mar;21(1):75-86.
- 2. Poljšak N, Kreft S, Kočevar Glavač N. Vegetable butters and oils in skin wound healing: Scientific evidence for new opportunities in dermatology. *Phytother Res.* 2020 Feb;34(2):254-269.
- 3. Donato-Trancoso A, Monte-Alto-Costa A, Romana-Souza B. Olive oil-induced reduction of oxidative damage and inflammation promotes wound healing of pressure ulcers in mice. *J Dermatol Sci.* 2016 Jul;83(1):60-9.
- 4. Givol O, Kornhaber R, Visentin D, Cleary M, Haik J, Harats M. A systematic review of *Calendula officinalis* extract for wound healing. *Wound Repair Regen.* 2019 Sep;27(5):548-561.
- Parente LM, Lino Júnior Rde S, Tresvenzol LM, Vinaud MC, de Paula JR, Paulo NM. Wound Healing and Anti-Inflammatory Effect in Animal Models of *Calendula officinalis* L. Growing in Brazil. *Evid Based Complement Alternat Med.* 2012;2012:375671.
- 6. Hoffmann J, Gendrisch F, Schempp CM, Wölfle U. New Herbal Biomedicines for the Topical Treatment of Dermatological Disorders. *Biomedicines.* 2020 Feb 8;8(2):27.
- Arsić I, Zugić A, Tadić V, Tasić-Kostov M, Mišić D, Primorac M, Runjaić-Antić D. Estimation of dermatological application of creams with St. John's Wort oil extracts. *Molecules*. 2011 Dec 28;17(1):275-94.
- 8. Kurek-Górecka A, Górecki M, Rzepecka-Stojko A, Balwierz R, Stojko J. Bee Products in Dermatology and Skin Care. *Molecules.* 2020 Jan 28;25(3):556.
- Nascimento ASD, Tamiasso RSS, Morais SFM, Rizzo Gnatta J, Turrini RNT, Calache ALSC, de Brito Poveda V. Essential oils for healing and/or preventing infection of surgical wounds: a systematic review. *Rev Esc Enferm USP*. 2022 Jul 13;56(spe):e20210442. English, Portuguese.
- 10. Mori HM, Kawanami H, Kawahata H, Aoki M. Wound healing potential of lavender oil by acceleration of granulation and wound contraction through induction of TGF-β in a rat model. *BMC Complement Altern Med.* 2016 May 26;16:144.
- 11. In HOUSE (Aenorasis) unpublished data