(CONVENTION Company.) Form 8

COMMONWEALTH OF AUSTRALIA

Patents Act 1952-1969

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

(1) Here insert (in full) Name of Company.

In support of the Convention Application made by(1) BIOGAL GYOGYSZERGYAR

(hereinafter referred to as the applicant) for a Patent

(2) Here insert title of Invention.

for an invention entitled:(2) NEW MEDICATED OINTMENT, PROCESS FOR ITS PREPARATION, DRESSINGS PRODUCED WITH THE USE OF THIS MEDICATED OINTMENT AND THEIR PRODUCTION.

(3) Here insert full Name and Address, of Company official authorized to make declaration.

WE, ~~I~~,(3) ISTVAN CSERNUS, and LIVIA BECKER, C/-

of BIOGAL GYOGYSZERGYAR, 4042 Debrecen, Pallagati UT 13, Ungarn, HUNGARY

do solemnly and sincerely declare as follows:

1. I am authorised by the applicant for the patent to make this declaration on its behalf.

2. The basic application as defined by Section 141 of the Act was made in(4) HUNGARY on the 1st day of April, 1987, by BIOGAL GYOGYSZERGYAR on the ..... day of ..... 19....., by .....

(4) Here insert basic Country or Countries followed by date or dates and basic Applicant or Applicants.

(5) Here insert (in full) Name and Address of Actual Inventor or Inventors.

3.(5) See rear of sheet

~~is~~are the actual inventor of the invention and the facts upon which the applicant is entitled to make the application are as follow:

The applicant is the assignee of the said actual inventors.

4. The basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention the subject of the application.

DECLARED at Nyiregyhaza, Hungary

this 27 day of December 1988

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(57) Claim

1. A medicated ointment for the local treatment of skin injuries, in particular, burns characterized in that it contains 12- 25% by weight of wax,

68 - 87% by weight of pharmacologically acceptable oil,

1 - 15% by weight of a cooling essential (etheral) substance and

optionally up to 5% by weight of active ingredients which are compatible with the other components.

3. A process for the preparation of a medicated ointment for the local treatment of skin injuries, in particular burns, characterized in that

12 - 25% by weight of wax,

68 - 87 by weight of pharmacologically acceptable

.../2

oil,

1 - 15% by weight of a cooling essential (etheral) substance and optionally

up to 5% by weight of active ingredients which are compatible with the other components are mixed together, heated to above the melting point, homogenized and cooled down.

4. Local dressings for the treatment of skin injuries, especially burns, characterized in that they contain the medicated ointment according to claim 1 or 2 applied onto a carrier consisting of textiles such as mull, gauze or linen, or of foil.

AU-AI-13691/88

PCT

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Mit internationalem Recherchenbericht.

(54) Title: NEW MEDICATED OINTMENT, PROCESS FOR ITS PRODUCTION, MEANS OF APPLICATION USING SAID OINTMENT AND PRODUCTION OF SAID OINTMENT

(54) Bezeichnung: NEUE HEILSALBE, VERFAHREN ZU IHRER HERSTELLUNG, UNTER VERWENDUNG DIESER HEILSALBE HERGESTELLTE APPLIKATIONSFORMEN SOWIE DEREN HERSTELLUNG

(57) Abstract

Medicated ointment, particularly for treating serious burns, characterized by the fact that in contains between 12 and 25 % by weight of wax, between 60 and 88 % by weight of pharmacologically compatible oil, between one and 15 % by weight of a coolant substance, and possibly a maximum of five % by weight of active ingredients compatible with the other components. Camphor and menthol in particular are present as coolants, an antiseptic substance, particularly polyvinyl pyrrolidone-iodine complex, or an antibiotic, is present as an active ingredient. The means of application are produced by spreading the medical ointment onto textile carriers, such as mull bandages, gauze, linen or foil before possible packing in sterile packaging.

(57) Zusammenfassung

Die Erfindung betrifft eine Heilsalbe, insbesondere zur Behandlung schwerer Verbrennungen. Die Heilsalbe ist dadurch gekennzeichnet, daß sie 12-25 Masse% Wachs, 60-88 Masse% pharmakologisch verträgliches Öl, 1-15 Masse% einer kühlenden ätherischen Substanz und gegebenenfalls, max. 5 % mit den übrigen Komponenten verträgliche Wirkstoffe enthält. Als kühlende Substanz ist vorzugsweise Campher oder Menthol, als Wirkstoff ein Antiseptikum, vorzugsweise Polyvinylpyrrolidin-Jod-Komplex, oder ein Antibiotikum enthalten. Die erfindungsgemäßen Applikationsformen werden hergestellt, indem textile Träger, zum Beispiel Mullbinden, Gaze, Leinen, oder Folien mit der Heilsalbe bestrichen und dann gegebenenfalls steril verpackt werden.

New medicated ointment, process for its preparation, dressings produced with the use of this medicated ointment and their production

The present invention relates to a new, substantially anhydrous medicated ointment, to a process for its preparation, to dressings produced with the use of this medicated ointment and to their production. The ointment according to the invention and the dressings produced with the use thereof (plasters, impregnated mull bandages, gauze etc.) are used for treating or healing injuries in which the epidermis or the entire skin has been destroyed. Such wounds are for example second and third degree burns, skin lesions caused by abrasions, ulcers and the like, deep burns and other injuries to the skin which may require skin grafts.

Burns, especially when they cover large areas of the body, or when they are of second or third degree, cannot be considered simply as a pathological process localized to the skin; rather, they are an illness affecting the entire system which in serious cases can be life-threatening. Due to the high temperature, and also due to the effect of strong radiation or of chemical agents, endogenous vasoactive substances (histamine, quinine) seep from the tissues of the skinless areas, and the permeability of the capillary vessels is increased, plasm flows out of the vascular system, the amount of blood circulating in the system decreases. If the vascular system is not replenished within a short time, irreversible changes will occur, above all in heart and kidneys, which may result in the patient's death (Arch. Osp. Mare 20, 432-444, 1968).

The second stage of burn injuries is a septic-toxic phase caused by bacteria and fungi propagating on the dead parts of the skin and by the toxic substances resorbed by the injury site.

The first task in treating burns is to overcome shock, then to prevent or at least to shorten the septic-toxic stage and finally to replace the burnt tissues, and to correct the cosmetically or functionally troublesome scars.

After shock has been overcome, wound treatment can be commenced, by removing the dead tissues. The aim of the local treatment consists (since the physiological and protective functions of the skin have been lost) in protecting the wound from physical damage, from drying out and from loss of liquid

and electrolyte, as well as from infections, and in stimulating the healing process.

At present, epithelizing ointments (Peru balsam, Mikulitz ointment, Panthenolol) and bactericides which can be applied with a brush are used for treating wounds. The ointments are used either by coating the destroyed skin surface with the ointment and continuing with an open or closed treatment, or the ointment is applied onto textiles and used as a plaster. However, such plasters have the disadvantage that, even when the dressing is changed frequently, the wound is in contact for too long with the fluid discharged from it, as a result of which a superficial burn may turn into a deep burn which also affects the deeper skin layers.

Numerous attempts have been made at producing antiseptic chemotherapeutic ointments. According to U.S. patent 4,401,651, an antimicrobial ointment is applied thickly onto a tampon, and the tampon is placed with the treated side on the wound. The tampon completely covers the injured surface.

U.S. patent 4,301,145 describes an antiseptic cream containing PVP-I_2 complex (polyvinylpyrrolidone-iodine complex), sodium citrate, glycerin, stearin or cetyl alcohol, preservative, emulsifier and up to 85% of paraffin derivative as the cream base. According to the description, the cream has bactericidal, fungicidal and viricidal effects.

British patent No. 673,587 discloses a "dry" ointment which can also be used together with therapeutically active agents which are sensitive to water. The ointment contains antibiotics as active ingredient, for example bacitracin or the potassium salt of penicillin-G. The ointment base contains inter alia carboxymethyl cellulose, sodium dodecyl sulfate as a wetting agent, bentonite as a natural swelling mineral, and furthermore a sugar such as β-lactose and also anhydrous citric acid.

A specific combination of therapy and wound dressing for the treatment of burns and transplant zones is proposed in U.S. patent 4,303,066. According to this disclosure, a transparent, non-sticking dressing which seals the wound completely and which has a high mechanical strength is desirable. The formation in situ of stable polymer films from an organic carrier material and a hydrophilic polymer often takes up to an hour.

This is very unpleasant for the patient, because he has to remain immobile for all of this time, and the solvent used may cause pain.

The pH value of the wound and its immediate vicinity is generally lower (more acidic) than normal skin, and this fact makes many agents unsuitable for use.

Another factor restricting usability is the presence of water. The ointments and creams commonly used for treating wounds, which contain a considerable proportion of water, such as o/w and w/o emulsions, extract water from the wound and thus dry it out, causing an undesirable formation of scars; the wound takes longer to heal.

Many active ingredients can be used only to a limited extent or not at all with hydrated preparations and emulsions.

The use of iodine, especially complex bound iodine to create antiseptic conditions has been known for a long time. The iodine is very slowly released from the complexes and has a bactericidal and fungicidal effect on the treatment site. The iodine content in such preparations is generally no more than 2% (J. Trauma 25, 3, 247-249, 1985).

Empirical evaluation has demonstrated that iodine provides the best bactericidal, fungicidal and viricidal effect. The excellent antimicrobial effect is also borne out by the fact that a low but constant concentration of iodine used as a complex in the vicinity of the wound ensures completely antiseptic conditions.

The known ointments which find widespread clinical use in the treatment of common skin injuries are often applied onto gauze carriers. The gauze carriers are usually sterilized by hot air and then used to dress the wound. Gauze is commonly used for treating open wounds as well as for treating closed wounds. The impregnation of gauze carriers and other textile carriers often poses technical problems which are difficult to solve. For example, when Mikulitz ointment is used, zinc oxide may be released, and other substances may be separated out during the hot air treatment. The ointments often also contain heat-sensitive active ingredients which may be impaired by the hot air sterilization and possibly even form decomposition products which prolong healing of the wound.

Finally, allergies have been recorded in a large number of cases treated with the known preparations, especially Peru balsam.

At the moment, considerable quantities of lanolin are used, for example in the preparation "Grassolind" (Paul Hartmann AG, FRG), which contains 76% of white vaseline, 22% of lanolin and 2% of liquid paraffin. The textiles impregnated with this preparation serve to protect the wounds and to absorb wound discharge. Contact allergies often occur due to the fairly high concentration of lanolin (Hungarian patent No. 187,413).

The aim of the present invention was to provide an ointment which does not cause any allergy or skin irritation as a result of its composition, which is well suited to the impregnation of therapeutically usable textiles and which does not decompose when sterilized. When the ointment is used, the potential regenerative capacities of the wound are optimally utilized. The ointment provides the best conditions for the auto-regeneration of the tissue, both in closed and open wound treatment.

Accordingly, the object of the present invention is a medicated ointment, in particular for treating burns. The medicated ointment according to the invention is characterized in that it contains

12 - 25% by weight of wax,

68-87
~~60 — 88~~% by weight of pharmacologically acceptable oil,

1 - 15% by weight of a cooling essential (ethereal) substance

and optionally

up to 5% by weight of active ingredients which are compatible with the other components.

The proportion of wax is preferably within the range of 15-20% by weight; beeswax and/or lanolin are particularly suitable, white beeswax is especially preferred. The pharmacologically acceptable oil is expediently present in a proportion of 68-78% by weight; it is preferably paraffin oil, Mygliol, sunflower oil, castor oil or mixtures thereof. The cooling essential (ethereal) substance is preferably present in a proportion of 2-9% by weight and is preferably camphor and/or menthol. Finally, antiseptic and chemotherapeutic agents in particular are used as active ingredients. Suitable antiseptic agents are iodine or iodine complexes such as, for example, the polyvinylpyrrolidone-

iodine complex, while antibiotics such as neomycin, tobramycin, erythromycin and oxytetracyclin are suitable chemotherapeutic agents. The active ingredients preferably constitute 0.5-2% by weight of the ointment.

The invention furthermore relates to a process for the preparation of the medicated ointment for localized application. The process according to the invention is characterized in that a molten mass is produced by heating and homogenization of 12-25% by weight of wax, 60-88% by weight of pharmacologically acceptable oil, 1-15% by weight of a cooling essential substance and optionally up to 5% by weight of active ingredient, which molten mass is cooled down.

The invention also relates to local dressings for treating skin injuries, especially burns. These local dressings are characterized in that they contain the above-described medicated ointment applied onto textile carriers such as mull bandages, gauze, linen or foil.

Finally, the invention relates to a method of producing the local dressings. This method is characterized in that the aforesaid medicated ointment is applied onto textile carriers such as mull, gauze or linen or onto foil, with 0.2-10 times and preferably 1-3 times the quantity of ointment being used relative to the mass of the carrier material, and the coated carrier material may if desired be sterilized.

Numerous tests were carried out to find an optimal composition of the ointment. First, white beeswax and paraffin oil were used in a ratio of 1:1-2. However, the ointment thus obtained was too hard at room temperature, and the impregnated textiles also became too hard. It could not be ensured that only the fibres were impregnated while the interspaces of the loosely woven fabric remained open. Therefore, a ratio of wax to oil of 1:3-6 was selected (1:4 specifically). The solidification point is also considerably lowered by the addition of the cooling essential substance.

The addition of hydrophilic substances such as polyoxyethylene derivatives to the white beeswax admittedly makes it possible to obtain a homogeneous molten mass at approximately 60°C, however, the wax is separated out again upon cooling.

It is also possible to use oil of vegetable or animal origin as the pharmacologically acceptable oil. The cooling essential substances used (camphor, menthol) dissolve well in the tested oils, and the other active ingredients, such as iodine or iodine complexes, also disperse well in the ointment base.

The wax used is preferably white beeswax (Cera alba). Substitution with lanolin can only be contemplated if a desired active ingredient cannot be incorporated in any other way.

In order to prepare the ointment according to the invention, the wax is melted together with a portion of the pharmacologically acceptable oil. If alcoholic solutions are used to prepare the ointment (for example alcoholic iodine solution), the cooling substance is dissolved in this solution, the solution is mixed with the remaining portion of the oil and then admixed with the molten wax mass heated to approximately 70°C, preferably in a water bath. If no alcoholic solutions are used, the cooling substance can be mixed with a portion of the oil and be admixed with the molten wax mass in this form. The mixture is stirred at the above-mentioned temperature until it is fully homogeneous. Stirring is continued until the mixture is completely cooled down.

The dressings which are also the object of the invention are produced by impregnating or coating suitable textile carriers or foils with the ointment according to the invention. It may be advantageous to slightly heat the ointment for this purpose. Loosely woven mull is a particularly advantageous carrier material; the impregnated fibres form an "antiseptic lattice" which, on the one hand, does not allow the colonization and propagation of bacteria and fungi, but on the other hand allows free access of air to the wound surface, thereby accelerating healing. Another advantage of the antiseptic lattice is that wound discharges (burns usually weep) can be removed simply by dabbing them away. The ointment can also be used to impregnate the mull pad of adhesive plasters (Leukoplast). After the plaster has been applied, the pad keeps the wound sterile, reduces itching due to the cooling substance and promotes healing.

The dressings according to the invention, especially impregnated textiles, are atraumatic, do not contain water and therefore do not adhere to the wound. Changing them does not damage the newly developing tissues and is completely painless.

Antiseptic agents can be used locally before the new plaster (bandage) is applied.

The effect of the ointment according to the invention and the dressings impregnated with it was tested on a wound healing model in animal tests (Linsky,C.B., Rovee, D.T.: The influence of local environment on the course of wound healing in the guinea pig; Int. Symp. Wound Healing, Rotterdam, pp. 211-213, Foundation International Cooperation in the Medical Sciences, Montreaux 1974). The test animals used were guinea pigs with a weight of 270-500 grams (half of them being males, the other half females). On a 5 x 5 cm area on the back of the animals the hair was removed with scissors and then with an electric razor and finally the area was sterilized with alcohol. From this area, a skin section comprising the entire thickness of epidermis and subcutis was removed with a circular knife of 2.3 cm in diameter. The wounds were treated in the following manner. Pieces of gauze being 10 x 10 cm in size were impregnated with the ointment prepared as in Example 3, with 1-1.8 g of ointment being used for each piece of gauze. This quantity is sufficient to impregnate the fibres of the gauze while the interspaces remain open. These impregnated gauze pieces are applied onto the wound, then bandaged with sterile gauze and finally the bandage is fastened with Leukoplast. The dressing was changed daily for a period of 8 days. At the end of the test, the degree of healing was established by the measurable contraction of the wound. The values obtained as well as those for the control and reference preparations are collated in Table 1.

In the case of the preparation according to Example 3, the wound contraction was significantly better than in the case of the control and reference preparations. The extremely rapid development of the granulation tissue was particularly remarkable, the wound healed considerably faster.

The comparison with the preparation Braunovidon ® is particularly interesting; this reference substance contains polyvinylpyrrolidone-iodine complex, and its content of free iodine corresponds with the iodine content of the ointment according to the invention. The Braunovidon ® ointment was applied onto gauze like the ointment according to the invention, and the test conditions were identical. The table shows a significant difference in effect.

Tests as to sensitizing effect were carried out on 12 DHP guinea pigs weighing 250-300 g, using the open epicutaneous test (Organization for Economic Cooperation and Development Guidelines (1981)). The animals' hair was removed on one side with an electric razor and then they were rubbed in once a day for a period of 10 days with the ointment of Example 3 until the skin turned red. The control animals were rubbed dry. At the end of the test it could be observed that no erythema developed either in the primary irritation phase or in the subsequent sensitizing phase.

Skin irritation tests were also performed on 6 New Zealand rabbits weighing 2-3 kg (test standard: Code of Federal Regulations, Title 16, Section 1500.41). 24 hours before the start of the test, the hair was removed from the animals' backs with scissors and subsequently with a 20% strength solution of sodium sulfide. After washing with tap water, the residual sodium sulfide was neutralized with a 1% strength acetic acid solution. The ointment of Example 3 was applied onto a piece of gauze and placed on the skin. The gauze was covered with cellophane and fixed with a plaster. After 24 hours the dressing was removed, the skin was freed of ointment residues. The primary irritation index was calculated from the mean value of evaluations made after 24 and after 72 hours. The ointment according to Example 3 does not have an irritating effect, its primary irritation index is equal to zero.

Tests to irritate the eye were performed on 11 New Zealand rabbits weighing 1.5-1.7 kg (test standard: see above, but Section 1500.42). 0.1 ml of the ointment of Example 3 was applied to the centre of the cornea of the animals' right eye by means of a micropipette. The left eye was studied as a control. One hour after the ointment had been applied, an increased formation of tears and an increased blood flow in the conjunctiva could be observed, but these symptoms receded within 24 hours. The Draize index measured (in accordance with the cited literature) was 0.7 for the ointment of Example 3, which means that the ointment has a slightly irritating effect on the eyes.

Tests as to skin toxicity were carried out on 20 Wistar rats weighing 200-270 g (10 of which were males, and 10 females). The tests were performed in accordance with the Organization

for Economic Cooperation and Development Guidelines (1981). 40-50% of the skin surface of the test animals was freed of hair 24 hours before the start of the test with scissors and subsequently with a 20% strength sodium sulfide solution, then washed with water and finally neutralized with a 1% strength acetic acid solution. The ointment of Example 3 was applied onto the hairless surface in a dose of 5 g/kg with filtering paper, covered with cellophane and fixed with a plaster. After 24 hours the dressings were removed, the ointment residues were washed off. For the entire duration of the test, the treated animals showed no difference in the condition of their skin, in their behaviour and in weight gain from untreated control animals. The LD_{50} value of the ointment according to Example 3 is greater than 5000 mg/kg of body weight.

The invention will be explained in greater detail with the aid of the following examples.

Example 1

White beeswax	17.8 g
Paraffin oil	71.2 g
Camphor	9.0 g
Alcoholic iodine solution (5% strength)	2.0 g
	100.0 g

The camphor is dissolved in the alcoholic iodine solution and a portion of the paraffin is added to the solution. The white beeswax is melted together with the remaining paraffin oil in a water bath at 68°C and subsequently homogenized with the mixture containing the camphor. The molten mass is stirred until it is cooled down. The ointment obtained has a yellow colour and a typical camphor smell. Solidification point: 41-43°C.

Example 2

White beeswax	18.0 g
Paraffin oil	72.0 g
Camphor	9.0 g
PVP-I_2, micronized	1.0 g
	100.0 g

The camphor is mixed with the micronized (finely divided) polyvinylpyrrolidone-iodine complex and then a portion of the paraffin oil is added to the mixture. The white beeswax is

heated together with the remaining paraffin oil to form a molten mass. The rest of the procedure is the same as in Example 1. The ointment obtained has a yellowish-brown colour and a typical camphor smell. Solidification point: 42-43°C.

Example 3

White beeswax	16.0 g
Paraffin oil	80.0 g
Camphor	3.0 g
PVP-I_2, micronized	1.0 g
	100.0 g

The ointment is prepared in the manner described in Example 2. Solidification point: 43-44°C.

Example 4

White beeswax	16.0 g
Paraffin oil	81.0 g
Menthol	2.0 g
PVP-I_2, micronized	1.0 g
	100.0 g

The ointment is prepared in the manner described in Example 2. Solidification point: 42°C.

Example 5

White beeswax	18.0 g
Paraffin oil	73.0 g
Camphor	9.0 g
	100.0 g

The camphor is dissolved in a portion of the paraffin oil and the solution is added to the molten mass prepared from the white beeswax and the remaining paraffin oil. The molten mass is stirred until it is cooled down. The ointment obtained is white and smells typically of camphor. Solidification point: 43-44°C.

Example 6

White beeswax	16.0 g
Paraffin oil	82.0 g
Menthol	2.0 g
	100.0 g

The ointment is prepared in the manner described in Example 5. It is white and smells typically of menthol.

Example 7

White beeswax	18.0 g
Castor oil	77.0 g
Menthol	3.0 g
Alcoholic iodine solution	2.0 g

The ointment is prepared in the manner of Example 1.
Solidification point: 57°C.

Example 8

White beeswax	18.0 g
Inwitor 742 (oil mixture, Dynamit Nobel)	78.0 g
Camphor	3.0 g
PVP-I_2, micronized	1.0 g

The ointment is prepared in the manner of Example 2.
Solidification point: 53°C.

Example 9

White beeswax	18.0 g
Inwitor 742	78.0 g
Menthol	3.0 g
PVP-I_2, micronized	1.0 g
	100.0 g

The ointment is prepared in the manner described in Example 2.
Solidification point: 51°C.

Example 10

White beeswax	16.0 g
Paraffin oil	76.0 g
Lanolin	4.5 g
Camphor	3.0 g
Erythromycin (base)	0.5 g
	100.0 g

The erythromycin, which has a particle size of less than 160 µm, is mixed into the lanolin. A portion of the paraffin oil together with the white beeswax is processed into a molten mass. The camphor is dissolved in the remaining paraffin oil. Finally, all ingredients are formed into a homogeneous molten mass. The molten mass is stirred until it is cooled down. Solidification point: 40-41°C.

Example 11

White beeswax	16.0 g
Sunflower oil	76.0 g
Lanolin	4.5 g
Camphor	3.0 g
Tobramycin (base)	0.5 g
	100.0 g

The ointment is prepared in the manner described in Example 10.
Solidification point: 41-43°C.

Example 12

White beeswax	16.0 g
Paraffin oil	76.0 g
Lanolin	4.5 g
Camphor	3.0 g
Neomycin sulfate	0.5 g

The ointment is prepared in the manner described in Example 10.
Solidification point: 41-43°C.

Example 13

White beeswax	16.0 g
Paraffin oil	76.0 g
Lanolin	4.5 g
Camphor	3.0 g
Erythromycin-lactobionate	0.5 g
	100.0 g

The ointment is prepared in the manner described in Example 10.
Solidification point: 42-43°C.

Example 14

White beeswax	16.0 g
Paraffin oil	76.0 g
Lanolin	4.5 g
Camphor	3.0 g
Oxytetracyclin (base)	0.5 g
	100.0 g

The ointment is prepared in the manner described in Example 10.
Solidification point: 42-43°C.

Example 15

The ointments prepared in accordance with Examples 1-14 are applied in a quantity of 1.0-2.0 g onto a gauze surface of in each case 100 cm^2. To this end the ointment is heated to 65-70°C.

Example 16

The ointments prepared in accordance with Examples 1-14 are used to impregnate textiles. To this end, the ointment is heated to just above the solidification point. Fine, loosely woven mull fabric is impregnated with the ointment by immersion. The mull fabric is folded in fours and then placed and pressed onto the adhesive side of the plaster. A protective foil is placed over the thus formed pad. The plaster is sterilized in a manner known per se.

Example 17

The ointments prepared in accordance with Examples 1-14 are used to impregnate textiles. To this end, the ointments are heated to a temperature above the solidification point. The mull pads already affixed on the adhesive side of the plaster are coated with the ointment in a suitable device and then covered with protective foil. The plasters are wrapped and sterilized in a known manner.

Description of clinical cases

a) Z.S., an eleven-year old boy, fell at home into the boiling water used to pluck chickens, which had been spilt on the floor, and suffered superficial second degree burns on his right arm - over 5% of his body surface -. The wound was dressed each day with gauze impregnated with the ointment of Example 13. On day 12 the boy was completely recovered.

b) F.D., a seventeen-year old, burnt the back of his hand and his lower arm (on the right) at home with a petrol flame, covering 3% of his body surface with second degree burns. The injury was treated with gauze impregnated with the ointment of Example 3. Healing took 7 days. Staphylococcus aureus bacteria could be cultivated from the collected wound discharge, but no systematic antibiotic treatment was necessary.

c) R.F., a ten-year old girl, suffered second degree burns over 15% of her body surface due to scalding at home. The treatment carried out with conventional epithelizing agents had no

result. After 10 days of treatment with gauze dressing material impregnated with the ointment of Example 4, healing was complete.

d) G.J., a 29-year old man, suffered second degree burns over 3% of his body surface due to scalding his left arm at home, 3 days before he was admitted to hospital. After being admitted to hospital, he was given a systematic antibiotic treatment and in parallel thereto a wound treatment with gauze impregnated with the ointment of Example 3. After 7 days he was completely healed.

e) L.K., a 29-year old woman, had poured boiling water over her left leg and suffered second to third degree burns over 1% of her body surface, 2 weeks before she was admitted to hospital. Since conventional epithelization methods were without success, an autotransplant was carried out. The transplant zone was covered with gauze impregnated with the ointment of Example 6. This eliminated the need for treatment with antibiotics. The patient was released as healed 7 days after the operation.

Table 1

Treatment	Number of animals	Wound surface (cm^2) Day 0	Wound surface (cm^2) Day 8	Difference (cm^2)	Contraction (%)
Control (phys. NaCl soln.)	6	4.34±0.32	2.32±0.29	2.08	46.67±6.56
References:					
Mikulitz ointment	18	4.99±0.71	2.79±0.33	2.2	43.67±5.86
		5.37±0.44	2.42±0.18	2.95	55.00±3.85
		5.14±0.16	2.36±0.20	2.78	54.08±3.52
Nebacetin ointment	6				
Braunovidon ointment	6	5.49±0.52	2.71±0.22	2.78	50.45±2.90
Example 3	18	4.93±0.33	1.76±0.11	3.17	64.33±3.93
		5.21±0.12	1.70±0.13	3.51	67.39±2.47
		5.46±0.34	1.62±0.12	3.84	70.33±1.03
Example 5	6				
Example 13	6	4.84±0.16	2.79±0.19	2.05	42.37±2.48
Example 14	6				
Example 15	6	5.04±0.20	3.22±0.14	2.82	36.06±2.04

Mikulitz ointment: silver nitrate

Nebacetin: BYK Gulden, Netherlands

Braunovidon: B. Braun, Melsungen, FRG

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A medicated ointment for the local treatment of skin injuries, in particular, burns characterized in that it contains 12- 25% by weight of wax,

68 - 87% by weight of pharmacologically acceptable oil,

1 - 15% by weight of a cooling essential (etheral) substance and

optionally up to 5% by weight of active ingredients which are compatible with the other components.

2. A medicated ointment according to claim 1, characterized in that it contains

as the wax 15 - 20% by weight of beeswax and/or lanolin,

as the pharmacologically accepted oil, 68 - 78% by weight of paraffin oil, Mygliol, sunflower oil, castor oil or mixtures thereof,

as the cooling essential substance, 2 - 9% total by weight of camphor and/or menthol and

as the active ingredient, 0.5 - 2% by weight of antiseptic agent, preferably polyvinylpyrrolidone-iodine complex, or chemotherapeutic agent, preferably antibiotics such as neomycin, tobramycin, erythromycin or oxytetracyclin.

3. A process for the preparation of a medicated ointment for the local treatment of skin injuries, in particular burns, characterized in that

12 - 25% by weight of wax,

68 - 87 by weight of pharmacologically acceptable oil,

1 - 15% by weight of a cooling essential (etheral) substance and optionally

up to 5% by weight of active ingredients which are compatible with the other components are mixed together, heated to above the melting point, homogenized and cooled down.

4. Local dressings for the treatment of skin injuries, especially burns, characterized in that they contain the medicated ointment according to claim 1 or 2 applied onto a carrier consisting of textiles such as mull, gauze or linen, or of foil.

5. A method of producing local dressings, characterized in that textile carriers such as mull bandages, gauge or linen, or foil are coated or impregnated with the medicated ointment according to claim 1 or 2, with 0.2-10 times the amount of ointment being used relative to the mass of the carrier, and in that the coated or impregnated carrier is wrapped, if desired in sterile condition.

6. A method of producing local dressings as claimed in claim 5 wherein the medicated ointment according to claim 1 or 2 is present in a quantity of 1 - 3 times the mass of the carrier.

DATED THIS 11TH DAY OF JULY, 1990
BIOGAL GYOGYSZERGYAR

WATERMARK PATENT & TRADEMARK ATTORNEYS
THE ATRIUM
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AUSTRALIA

KJS:DM (1.15)

New medicated ointment, process for its preparation, dressings produced with the use of this medicated ointment and method of producing them

A b s t r a c t

The invention relates to a medicated ointment, especially for treating severe burns. The medicated ointment is characterized in that it contains

12-25% by weight of wax,
60-88% by weight of pharmacologically acceptable oil,
1-15% by weight of a cooling essential substance
and optionally
up to 5% of active ingredients which are compatible with the other components.

The cooling substance used is preferably camphor or menthol, the active ingredient used is an antiseptic agent, preferably polyvinylpyrrolidone-iodine complex, or an antibiotic.

The dressings according to the invention are produced by coating textile carriers, for example mull bandages, gauze or linen, or foils with the medicated ointment and these are then wrapped, if desired in sterile condition.

INTERNATIONAL SEARCH REPORT

International Application No PCT/HU 88/00009

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC[4] A 61 K 9/06,9/08,9/10,9/70,31/125,31/65,31/71,33/18,7/00, 7/40,7/48; A 61 L 15/03

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
Int.Cl[4]	A 61 K 9/06,9/08,9/10,9/70,31/125,31/65,31/71, 33/18,7/00,7/40,7/48; A 61 L 15/03

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category *	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
A	DE, A1, 2 514 873 (MERCK PATENT GMBH) 14 September 1976 (14.09.76), see claims; page 6,l.,2. paragraph, example	(1,3)
A	EP, A1, 0 060 553 (HUMAN OLTOANYAGTERMELÖ ES KUTATO INTEZET) 22 September 1982 (22.09.82), see abstract; page 15	(1,3)
A	US, A, 4 122 158 (E.E. SCHMITT) 24 October 1978 (24.10.78), see abstract; claims	(1,2,4,5)
A	EP, A1, 0 124 774 (INTERMEDICAT GMBH) 14 November 1984 (14.11.84), see claims 1,6	(2)
A	EP, B1, 0 001 871 (THE PROCTER & GAMBLE COMPANY) 29 July 1981 (29.07.81), see example 1; claims 9,10,12	(1,2)

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* Special categories of cited documents: [10]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
9 May 1988(09.05.88)	17 May 1988(17.05.88)
International Searching Authority	**Signature of Authorized Officer**
Austrian Patent Office	

International Application No. PCT/HU 88/00009

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
A	DE, A1, 3 341 770 (U. WILKE) 30 May 1985 (30.05.85), see example 3	(1)
A	GB, A, 1 502 680 (WILKINSON SWORD LIMITED) 1 March 1978 (01.03.78), see page 2, lines 47-58; example 23	(1,3)
A	Handbuch der Kosmetika und Riechstoffe, volume III, 1973, Dr. Alfred Hüthig Verlag GmbH, Heidelberg, see pages 551,564,565,568,569,752,753	(1,2,3)
A	Acne Products (R.E. HOPPONEN), see pages 321,323	(1)

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen PCT/HU 88/00009

I. KLASSIFIKATION DES ANMELDUNGSGEGENSTANDS (bei mehreren Klassifikationssymbolen sind alle anzugeben)[3]

Nach der internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC

IPC[4]: A 61 K 9/06,9/08,9/10,9/70,31/125,31/65,31/71,33/18,7/00, 7/40,7/48; A 61 L 15/03

II. RECHERCHIERTE SACHGEBIETE

Recherchierter Mindestprüfstoff[5]

Klassifikationssystem	Klassifikationssymbole
Int.Cl.[4]	A 61 K 9/06,9/08,9/10,9/70,31/125,31/65,31/71, 33/18,7/00,7/40,7/48; A 61 L 15/03

Recherchierte nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Sachgebiete fallen[5]

III. EINSCHLÄGIGE VERÖFFENTLICHUNGEN[14]

Art*	Kennzeichnung der Veröffentlichung, soweit erforderlich unter Angabe der Maßgeblichen Teile[17]	Betr. Anspruch Nr.[18]
A	DE, A1, 2 514 873 (MERCK PATENT GMBH) 14 September 1976 (14.09.76), siehe Ansprüche; Seite 6, 1.,2. Abschnitt, Beispiele.	(1,3)
A	EP, A1, 0 060 553 (HUMAN OLTOANYAGTERMELÖ ES KUTATO INTEZET) 22 September 1982 (22.09.82), siehe Zusammenfassung; Seite 15.	(1,3)
A	US, A, 4 122 158 (E.E.SCHMITT) 24 Oktober 1978 (24.10.78), siehe Zusammenfassung; Ansprüche.	(1,2,4,5)
A	EP, A1, 0 124 774 (INTERMEDICAT GMBH) 14 November 1984 (14.11.84), siehe Ansprüche 1,6.	(2)
A	EP, B1, 0 001 871 (THE PROCTER & GAMBLE COMPANY) 29 Juli 1981 (29.07.81), siehe Beispiel 1; Ansprüche 9,10,12.	(1,2)
A	DE, A1, 3 341 770 (U.WILKE) 30 Mai 1985 (30.05.85), siehe Beispiel 3.	(1)

* Besondere Kategorien von angegebenen Veröffentlichungen[15]:

"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist

"E" älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist

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"X" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als neu oder auf erfinderischer Tätigkeit beruhend betrachtet werden

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"&" Veröffentlichung, die Mitglied derselben Patentfamilie ist

IV. BESCHEINIGUNG

Datum des Abschlusses der internationalen Recherche[1]	Absendedatum des internationalen Recherchenberichts[2]
09 Mai 1988 (09.05.88)	17 Mai 1988 (17.05.88)
Internationale Recherchenbehörde	**Unterschrift des bevollmächtigten Bediensteten**[20]
ÖSTERREICHISCHES PATENTAMT	Zippan

III. EINSCHLÄGIGE VERÖFFENTLICHUNGEN (FORTSETZUNG VON BLATT 2)

Art*	Kennzeichnung der Veröffentlichung, * soweit erforderlich unter Angabe der maßgeblichen Teile '	Betr. Anspruch Nr. *
A	GB, A, 1 502 680 (WILKINSON SWORD LIMITED) 01 März 1978 (01.03.78), siehe Seite 2, Zeilen 47-58; Beispiel 23.	(1,3)
A	Handbuch der Kosmetika und Riechstoffe, Band III, 1973, Dr. Alfred Hüthig Verlag GmbH, Heidelberg, siehe Seiten 551,564,565,568,569, 752,753.	(1,2,3)
A	Acne Products (R.E.HOPPONEN), siehe Seiten 321,323.	(1)

Anhang zum internationalen Recherchenbericht über die internationale Patentanmeldung Nr. PCT/HU 88/00009

Annex to the International Search Report on International Patent Application No.

Annexe au rapport de recherche internationale relatif à la demande de brevet international n°.

In diesem Anhang sind die Mitglieder der Patentfamilien der im obengenannten internationalen Recherchenbericht angeführten Patentdokumente angegeben. Diese Angaben dienen nur zur Unterrichtung und erfolgen ohne Gewähr.

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned International search report. The Austrian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

La présente annexe indique les membres de la famille de brevets relatifs aux documents de brevets cités dans le rapport de recherche internationale visé ci-dessus. Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office autrichien des brevets.

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