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The safety of calcitriol 3 mug/g ointment. Evaluation of cutaneous contact sensitization, cumulative irritancy, photoallergic contact sensitization and phototoxicity

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RESUME / SUMMARY

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Mots clés

Vitamin D analogues are widely used for the treatment of psoriasis. A new topical formulation of calcitriol (3 mug/g ointment*) has been shown to be effective in the treatment of stable plaque-type psoriasis. This paper reports the results of four separate studies designed to evaluate specific local-safety parameters: cumulative irritancy, cutaneous contact sensitization, potential photoallergic contact sensitization and phototoxicity. **Calcitriol 3 mug/g ointment was classified as non-irritant when compared to calcipotriol, tacalcitol and white petrolatum.** Petrolatum and tacalcitol were slightly irritant and calcipotriol moderately irritant. No sensitization was observed with calcitriol 3 mug/g ointment. With regard to phototoxic potential, sites treated with calcitriol 3 mug/g ointment or vehicle ointment were less irritated than those treated with white petrolatum or those that were untreated. Using standard photoallergenicity testing methodology, there were no skin reactions of a photoallergic nature to the study material. These studies showed that calcitriol 3 mug/g ointment is a well-tolerated treatment for stable plaque-type psoriasis.

* Silkis Ointment, Galderma laboratories.

Key-words **calcitriol 3 mug/g ointment, irritancy, photoallergic, phototoxicity, sensitization.**

ARTICLE

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It is well established that the skin plays an important role in vitamin D metabolism, and that 1alpha, 25-dihydroxyvitamin D₃, (1,25-(OH)₂D₃ or calcitriol) the endogenously produced, hormonally active form of vitamin D₃, is essential for the maintenance of calcium homeostasis. In addition, studies have shown that epidermal keratinocytes and dermal fibroblasts, in addition to other body tissues and various tumor cells, have a specific receptor for calcitriol [1-4]. Clinical studies of psoriasis have shown that several vitamin D derivatives exhibit an antiproliferative effect. However, certain commercially available vitamin D derivatives have been associated with unwanted side effects. The use of calcipotriol has been associated with lesional or perilesional irritation in significant numbers of patients [5, 6] as well as sensitization [7]. Local skin irritation has been reported in clinical trials of tacalcitol [8, 9].

Solar irradiation [10] and irradiation with UV light have been shown to be useful in the treatment of psoriasis. Their use is often combined with topical or systemic therapies [11]. Thus, it is important to establish the potential for phototoxicity of any agent considered for the treatment of psoriasis.

A new topical therapy for the treatment of plaque psoriasis, 1alpha, 25-dihydroxyvitamin D₃ (calcitriol) ointment, has been shown to be effective in several clinical studies in psoriasis [12-20]. It showed good local and systemic safety at a dosage of 3 mug/g applied twice daily. Two studies of the local safety, cumulative irritancy and cutaneous contact sensitization are reported here, along with studies into phototoxicity and the potential for photosensitization of this new therapeutic agent.

Cumulative irritancy study

Materials and methods

This single center, randomized, vehicle-controlled, evaluator-blinded, intra-individual comparison study was conducted in order to evaluate local skin safety after repeated application, under occlusion, of calcitriol 3 mug/g ointment, tacalcitol 4 mug/g ointment, calcipotriol 50 mug/g ointment and white petrolatum for 21 days.

Each subject received five applications of each of the four formulations (50 µl or 0.05 g each application) applied to the test zone under occlusive patches (Finn[®] chambers) per week, weekend excepted, during 3 weeks. Occlusive-patch application is a validated and accepted method of maximizing exposure to a potential irritant, thereby providing an accurate indication of the potential for irritation. Safety was evaluated by scoring reactions for each site 24 hrs after application (or 72 hrs if application was on a Friday). The Mean Cumulative Irritancy Indices for each product and the control were calculated by scoring any erythema observed on any site following removal of the patch. The following scale was employed: no reaction: 0, erythema barely visible: 0.5, mild erythema: 1.0, moderate erythema: 2.0 and severe erythema: 3.0. These assessments were made at each examination point and the results recorded. A Cumulative Irritancy Index (CII) was calculated for each treatment and each subject.

Results

A total of 25 healthy volunteers were recruited; the frequency of more-marked erythema

experienced by the subjects is shown in [Table I](#). Considering the calcitriol zone, no severe erythema occurred during the study, only one moderate erythema was reported at the beginning of the study (Week 1, Day 1).

On the zone applied with calcipotriol, moderate erythema was observed immediately after one application (Week 1, Day 1) in four subjects. After 14 days, 13 subjects (52%) presented moderate erythema. Severe erythema appeared after five applications in one subject (Week 2, Day 7) and after eleven applications in two subjects (Week 3, Day 14). On the zone treated with tacalcitol, one moderate and one severe erythema were reported at Day 1 and from Day 7 onwards, respectively. With petrolatum, no severe erythema was noted, however three cases of moderate erythema were reported after Day 7.

After 21 days (*i.e.* 15 applications), no subject presented moderate to severe erythema on the zone applied with the investigational product calcitriol 3 µg/g ointment compared with 29% of the subjects on the zone applied with the comparator product calcipotriol 50 µg/g ointment and 8% with the comparator tacalcitol 4 µg/g ointment. Only one subject (4%) presented such a reaction on the site receiving the control white petrolatum.

The Mean Cumulative Irritancy Indices for each product and the control (Mean CII) are shown in [Figure 1](#).

Calcitriol was well tolerated and classified as being non-irritant. White petrolatum and tacalcitol were classified as slightly irritant. Calcipotriol was classified as moderately irritant. In the context of the study, the irritancy of calcitriol was not considered to be clinically different from that of white petrolatum or tacalcitol.

Eight adverse events occurred in seven subjects, only three of which were dermatological adverse events and considered related to the tested products. Irritant dermatitis appeared twice on zones applied with calcipotriol and once on a zone applied with tacalcitol. No dermatological adverse events occurred on any sites applied with calcitriol. One serious adverse event occurred but was not related to the tested drug.

Sensitization study

Materials and methods

The sensitization potential of calcitriol 3 µg/g ointment and its vehicle were evaluated in a single centre, vehicle-controlled, randomized, evaluator-blinded, intra-individual comparison study. Subjects received calcitriol 3 µg/g ointment, calcitriol vehicle ointment and white petrolatum at a dose of 50 µl under occlusive patches (Finn[®] chambers). These patches remained in place for either 48 or 72 hrs (during the weekend) over a 3-week period. The patch sites for all subjects were graded prior to the next patch application. Following a 2-week rest period without product application a challenge phase took place when the products were applied only once, on naive sites for 48 hrs. Erythema was graded on a 5-point scale as follows: no reaction: 0, erythema barely visible: 0.5, mild erythema: 1.0, moderate erythema: 2.0 and severe erythema: 3.0. Scores were recorded prior to product application and 15-30 min after removal of patches and then 48 and 72 hrs after removal of the patches.

Results

A total of 210 subjects successfully completed the study, each receiving the occlusive patches and completing both the induction and the challenge phase. The mean and range erythema

scores for each test material at each evaluation point during the induction phase are shown in [Table II](#).

At the sites applied with white petrolatum, two subjects were recorded as eliciting moderate erythema (grade 2) at day 8. A positive sensitization reaction to white petrolatum was observed in one subject. This subject elicited up to a mild erythema (grade 1) during the induction phase. At challenge, grades of 0.5 (barely visible erythema) or 1 (mild erythema) were recorded at each grading session.

Two other subjects exhibited equivocal sensitization reactions (according to the dermatologist) during the challenge phase. One of these subjects showed barely visible erythema (grade 0.5) at the 72-hr challenge grading session to calcitriol 3 µg/g ointment. No reactions to any of the three test articles were seen, in this subject, during the induction phase. No reactions for the other subject were seen during induction to any of the three test articles but at 48 hrs after challenge patch removal session, mild erythema (grade 1) was recorded for white petrolatum. This reaction had diminished to barely visible erythema (grade 0.5) within 72 hrs after challenge patch removal. On re-challenge, approximately one month later, a positive sensitization to white petrolatum was elicited in this subject.

One of the 225 enrolled subjects presented a mild erythematous reaction to calcitriol 3 µg/g ointment at the challenge phase, but this reaction was not confirmed after a second challenge phase (re-challenge).

Phototoxicity study

Materials and methods

This investigation, to assess the phototoxic potential of calcitriol 3 µg/g ointment, was designed as a single centre, randomized, vehicle-controlled, investigator-blinded, intra-individual comparison study.

Prior to product application, the MED (Minimal Erythematous Dose expressed in Joules/cm²) of UVA/UVB was determined for each subject. All subjects received 50 µl of calcitriol 3 µg/g ointment, 50 µl of calcitriol ointment vehicle and 50 µl of white petrolatum under occlusive patches (Finn[®] chambers). These patches remained in place for 24 hrs. After removal of the patches, one set of 4 patch sites was irradiated with 20 J/cm² of UVA. Following irradiation with UVA, the irradiated sites were further exposed to 0.8 MED of UVA/UVB light. The other set of 4 patch sites were covered and served as non-irradiated control. All patch sites were evaluated prior to product application, 15-30 min after the irradiation procedure, 24 and 48 hrs after the irradiation procedure. Erythema was graded on a 5-point scale as follows: no reaction: 0, erythema barely visible: 0.5, mild erythema: 1.0, moderate erythema: 2.0 and severe erythema: 3.0.

Results

The review of the erythema data recorded for the 27 healthy volunteers exposed to the three test materials (plus one untreated control site), with and without irradiation, shows that for the irradiated sites no reaction greater than moderate erythema was observed. In all four groups the extent of erythema observed was greater for the irradiated sites than for the non-irradiated sites.

At the irradiated sites ([Table III](#)) for the calcitriol 3 µg/g ointment and calcitriol vehicle ointment there was no greater than mild erythema (grade I) observed. The erythema peaked at 24 hrs after irradiation giving means of 0.65 and 0.59 for calcitriol 3 µg/g ointment and calcitriol

vehicle ointment respectively. For the white petrolatum and untreated sites, up to moderate erythema (grade 2) was observed at the irradiated sites after 24 hrs (means 0.72 and 0.74 respectively). In general, sites treated with calcitriol 3 mug/g ointment and calcitriol vehicle ointment were less irritated than those treated with white petrolatum and the untreated sites.

For the non-irradiated sites ([Table IV](#)) there was no more than mild erythema observed for calcitriol 3 mug/g ointment and white petrolatum, for calcitriol vehicle ointment only barely visible erythema (grade, 0.5) was observed. At 48 hrs no erythema was visible at any of the three test material sites.

There were no other local reactions observed other than hyperpigmentation at some of the irradiated sites but this had resolved at the 48-hr assessment.

Photoallergic contact sensitization

Materials and methods

Consenting healthy volunteers, with skin type II and III, were selected to participate in this study. All received calcitriol 3 mug/g ointment, calcitriol ointment vehicle and white petrolatum.

Prior to first product application, the MED (Minimum Erythema Dose expressed in Joules/cm²) was determined for each subject. During a three-week induction phase, 50 µl of the test articles were applied twice a week on a 1.1 cm² area of the lumbar area, (left side), for 24 hrs under occlusion (Finn[®] chambers). An untreated occluded site served as a control. Each time the patches were removed, the three test sites and the untreated site were irradiated with a dose of ultraviolet light (UVA + UVB) equivalent to twice the Minimal Erythema Dose for the first week and three times the MED for the second and third weeks.

A challenge period started after a 2-week rest period. During this phase, each test article was re-applied under occlusion for 24 hrs on two test sites, each located on either side of the back. Two untreated, but occluded, sites were also selected. Upon removal of the patches, the four sites of one side of the back were exposed to 0.5 x MED (UVB + UVA) augmented with 10 Joules/cm² of UVA. The four non-irradiated sites on the opposite side of the back served as control for a single sensitization. Skin reactions (erythema score and any other skin reactions) were assessed 15 to 30 min after removal of patches and before irradiation and then 48 and 72 hrs after the end of irradiation. Erythema was graded on a 5-point scale as follows: no reaction: 0, erythema barely visible: 0.5, mild erythema: 1.0, moderate erythema: 2.0 and severe erythema: 3.0.

Results

During the induction phase, scores of erythema were recorded on the four test sites for each of the 25 subjects. The reactions on the different test sites were found to be quite similar whatever the treatment.

Only barely visible erythema was observed during the study. The scores recorded during the challenge phase of the study are shown in [Table V](#).

During the challenge phase, the post-irradiation examinations of the test sites at 48 and 72 hrs after irradiation did not demonstrate any skin reactions of a photoallergic nature in any of the 24 challenged subjects. Only one subject showed a very mild erythema (barely visible) on the non-irradiated side for all tested products. This reaction disappeared at the 72-hr evaluation point.

Under the conditions of this study, calcitriol 3 mug/g ointment did not show any potential for

photosensitization.

CONCLUSION

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Discussion and conclusions

The four studies reported here were designed to evaluate the local safety of calcitriol 3 µg/g ointment in terms of cumulative irritancy, potential for sensitization, phototoxicity and photosensitization.

In the conditions of the cumulative irritancy study, calcitriol 3 µg/g ointment did not appear to give rise to any cumulative irritancy. It was well tolerated in comparison with white petrolatum and tacalcitol, which were classified as slightly irritant. The local tolerance of calcitriol 3 µg/g ointment was noted to be better than that observed for calcipotriol 50 µg/g ointment. Some incidences of irritation were noted with both calcipotriol and tacalcitol. None was observed with calcitriol.

The low irritancy potential of calcitriol 3 µg/g ointment was confirmed by the results of the first phase of the sensitization study. The irritancy scores for calcitriol 3 µg/g ointment and white petrolatum were slightly higher during the induction phase of the sensitization potential study, than those recorded for calcitriol ointment vehicle but the levels of irritation recorded for all products tested was extremely low. It was concluded that both calcitriol 3 µg/g ointment and calcitriol vehicle are non-sensitizing.

When the potential phototoxicity of calcitriol 3 µg/g ointment was investigated, regarding the irradiated sites, in general, sites treated with calcitriol 3 µg/g ointment and calcitriol vehicle ointment were less irritated than those treated with white petrolatum and the untreated sites. For the non-irradiated sites there were no more than mild erythema reactions observed for calcitriol 3 µg/g ointment; no evidence for any phototoxicity of calcitriol 3 µg/g ointment was revealed.

In the study to determine the photoallergic contact sensitization potential of calcitriol 3 µg/g ointment, the post-irradiation examinations of the test sites during the challenge phase did not demonstrate any skin reactions of a photoallergic nature in any of the subjects. Under the conditions of this study, calcitriol 3 µg/g ointment did not show any potential for photosensitization.

These observations are in good agreement with those made in clinical studies of calcitriol in psoriasis patients. The use of calcitriol 3 µg/g ointment has not been associated with the occurrence of major adverse events in clinical trials [12-19]. In a study of long-term treatment with calcitriol 3 µg/g ointment, for up to 78 weeks, only 7 out of 257 patients withdrew due to local intolerance [16]. The most commonly observed reaction to calcitriol 3 µg/g ointment therapy consists of a mild and transient erythema similar to those observed in the studies presented here. Taken together, these results suggest that topical therapy with calcitriol 3 µg/g ointment is an appropriate maintenance therapy for plaque psoriasis.

In contrast, it has often been asserted that calcipotriol use can be associated with the development of local intolerance symptoms. Under the conditions of the cumulative irritancy study it was shown that calcipotriol had a higher irritant potential compared to calcitriol. A published study of scalp psoriasis provides supporting evidence for this observation; tacalcitol (4 µg/g) and high-dose calcitriol (15 µg/g) ointments had markedly lower incidences of local intolerance than calcipotriol (50 µg/g) [20]. However, in a single study of chronic plaque psoriasis, including a limited number of patients, calcitriol and calcipotriol appear to possess

similar irritation potentials [21]. Further randomized comparative trials are needed to accurately compare the efficacy of, and tolerances to, these vitamin D₃ analogues.

In conclusion, the results of the studies presented here demonstrate that calcitriol 3 mug/g ointment was extremely well tolerated. When tested in healthy human subjects it did not give rise to any cumulative irritancy or sensitizing. Calcitriol ointment 3 mug/g, compared to its vehicle and white petrolatum, was neither phototoxic nor did it show any potential for photosensitization. These findings are entirely consistent with the findings of the clinical trial programme where no major adverse events have been observed, even after therapy duration of up to 78 weeks.

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REFERENCES

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1. Clemens TL, Horiuchi N, Nguyen M, *et al.* Binding of 1,25-dihydroxy-[³H] vitamin D₃ in nuclear and cytosol fractions of whole mouse skin *in vivo* and *in vitro*. *FEBS Lett* 1981; 134: 203.
2. Colston K, Hirt M, Feldman D. Organ distribution of the cytoplasmic 1,25-dihydroxycholecalciferol receptor in various mouse tissues. *Endocrinology* 1980; 105: 1916.
3. Stumpf WE, Sar M, Reid FA, *et al.* Target cell for 1,25-dihydroxyvitamin D in intestinal tract, stomach, kidney, skin, pituitary and parathyroid. *Science* 1979; 206: 1188-90.
4. Tanaka H, Abe E, Miyaura C, *et al.* 1alpha, 25-dihydroxycholecalciferol and a human myeloid leukemia cell line (UL-60). The presence of a cytosol receptor and induction of differentiation. *J Biochem* 1982; 240: 713-9.
5. Lea AP, Goa KL. Calcipotriol: a review of its pharmacological properties and therapeutic efficacy in the management of psoriasis. *Clin Immunother* 1996; 5: 230-48.
6. Fullerton A, Benfeldt E, Roed Petersen J, *et al.* The calcipotriol dose-irritation relationship: 48 hr occlusive testing in healthy volunteers using Finn Chambers. *Br J Dermatol* 1998; 138: 259-65.
7. Frosch PJ, Rustemeyer T. Contact allergy to calcipotriol does exist. *Contact Dermatitis* 1999; 40: 66-71.
8. Peters DC, Balfour JA. Tacalcitol. *Drugs* 1997; 54: 265-71.
9. Van de Kerkhof PCM, Werfel T, Haustein UF, *et al.* Tacalcitol ointment in the treatment of psoriasis vulgaris: a multicentre, placebo-controlled, double-blind study on efficacy and safety. *Br J Dermatol* 1996; 135: 758-65.
10. Even-Paz Z, Efron D, Kudish A. Optimised heliotherapy for psoriasis. *Br J Dermatol* 1999; 141: 957-68.
11. De Rie MA, Di Nuzzo S, Hansen AB, *et al.* Calcipotriol cream or ointment applied immediately before irradiation inhibits UVB erythema. *Br J Dermatol* 1999; 141: 957-68.
12. Mol M, Elzerman JR, Verjans HL, Kerstens R. 1alpha, 25-dihydroxyvitamin D₃ white petrolatum ointment in psoriasis. A randomized, double-blind, left-right, vehicle-controlled study

of twice daily application of 3 mug/g 1,25-(OH)₂ D₃ in white petrolatum ointment in chronic plaque psoriasis. Solvay Duphar study number H. 141.5006/A, Report, 1991.

13. Reichrath J, Perez A, Muller SM, *et al.* Topical calcitriol (1,25-dihydroxyvitamin D₃) treatment of psoriasis: an immunohistological evaluation. *Acta Derm Venereol (Stockh)* 1997; 77: 268-72.

14. Langner A, Verjans H, Stapor V, *et al.* Topical calcitriol in the treatment of chronic plaque psoriasis: a double-blind study. *Br J Dermatol* 1993; 128: 566-71.

15. Langner A, Fraczykowska M, Stapor V. 1alpha25-dihydroxyvitamin D₃ (calcitriol) ointment in psoriasis. *J Dermatol Treat* 1992; 3: 177-80.

16. Langner A, Ashton P, Van de Kerkhof PCM, *et al.* A long-term multicentre assessment of the safety and tolerability of calcitriol ointment in the treatment of chronic plaque psoriasis. *Br J Dermatol* 1996: 135: 385-9.

17. Hutchinson PE, Marks R, White J. The efficacy, safety and tolerance of calcitriol 3 mug/g ointment in the treatment of chronic plaque psoriasis: a comparison with dithranol. *Dermatology* 2000: 201: 139-45.

18. Ring J, Kowalick I, Christophers E, *et al.* Comparison of combined calcitriol 3 mug/g ointment and UVB photography with vehicle ointment and UVB phototherapy in the treatment of plaque psoriasis. Paper submitted for publication and posters.

19. Perez A, Chen TC, Turner A, *et al.* Pilot study of topical calcitriol (1,25-dihydroxyvitamin D₃) for treating psoriasis in children. *Arch Dermatol* 1995; 131: 961-2.

20. Langner A, Stapor V, Ambroziak M. Vitamin D₃ metabolites and analogues in the treatment of scalp psoriasis *J Dermatol Treat* 9 (suppl. 3): 41-5.

21. Bourke JF, Iqbal SJ, Hutchinson PE. A randomized double-blind comparison of the effects on systemic calcium homeostasis of topical calcitriol (3 micrograms/g) and calcipotriol (50 micrograms/g) in the treatment of chronic plaque psoriasis vulgaris. *Acta Derm Venereol* 1997; 77: 228-30.

The safety of calcitriol 3 µg/g ointment. Evaluation of cutaneous contact sensitization, cumulative irritancy, photoallergic contact sensitization and phototoxicity

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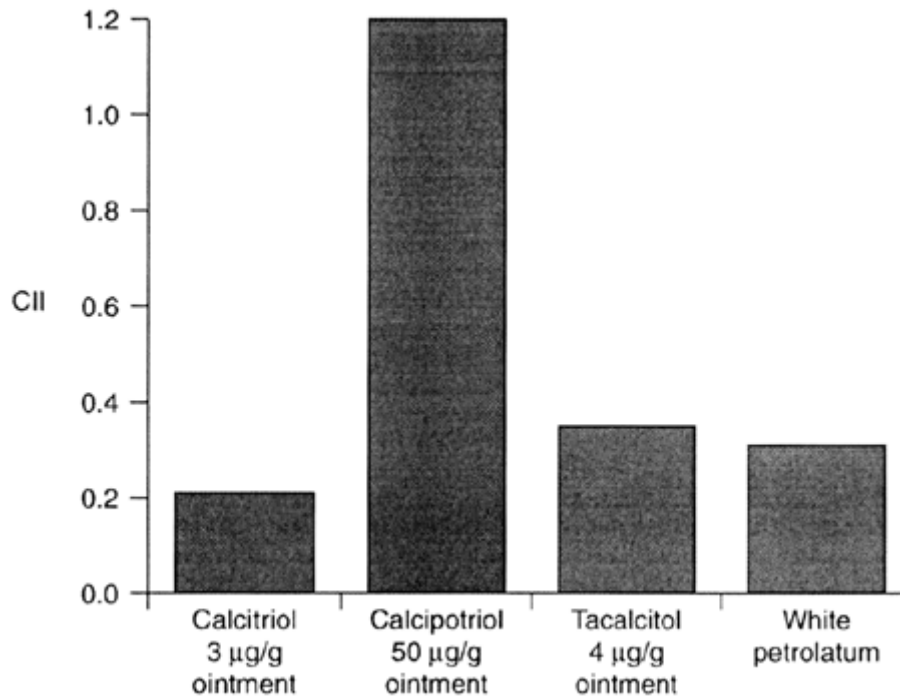


Figure 1. Mean cumulative irritancy index.

Table I. *Number of patients experiencing irritation (moderate or severe erythema) at examination point (n = 25)*

Examination point	Calcitriol 3 µg/g Ointment	Calcipotriol 50 µg/g Ointment	Tacacitol 4 µg/g Ointment	White Petrolatum
Day 1	1	4	1	1
Day 2	0	3	0	0
Day 3	0	2	0	0
Day 4	0	6	0	0
Day 7	0	10	1	0
Day 8	0	12	1	3
Day 9	0	8	1	3
Day 10	0	5	1	2
Day 11	0	14	2	2
Day 14	0	9	1	0
Day 15	0	12	1	0
Day 16	0	13	1	0
Day 17	0	10	1	0
Day 18	0	9	1	0
Day 21	0	7	2	1

Table II. *Mean and range erythema scores for test materials at each evaluation visit*

	Calcitriol 3 µg/g ointment		Calcipotriol Vehicle Ointment		White Petrolatum	
	Mean	Range	Mean	Range	Mean	Range
Induction phase						
Baseline*	-	-	-	-	-	-
Day 3	0.04	0-1	0.03	0-0.5	0.01	0-0.5
Day 5	0.04	0-0.5	0.02	0-0.5	0.02	0-0.5
Day 8	0.03	0-0.5	0.02	0-0.5	0.04	0-2
Day 10	0.04	0-0.5	0.01	0-0.5	0.04	0-1
Day 12	0.02	0-0.5	0.01	0-0.5	0.04	0-1
Day 15	0.02	0-0.5	0.02	0-0.5	0.03	0-0.5
Day 17	0.02	0-0.5	-	0-0.5	0.02	0-0.5
Day 19	0.03	0-2	-	0-1	0.02	0-1
Day 22	0.03	0-1	0.01	0-0.5	0.02	0-1
Make-up day	0.01	0-1	-	0-0.5	-	0-1
Mean Cumulative Irritation Index	0.03		0.01		0.03	
Challenge phase						
Day 3	0.069	0-0.5	0.019	0-0.5	0.019	0-0.5
Day 5	0.012	0-0.5	0.009	0-0.5	0.017	0-1
Day 6	0.005	0-0.5	-	-	0.007	0-1
Day 8	-	-	-	-	-	-

* Prior to product application.

Table III. *Mean erythema grades at evaluation time points – irradiated sites*

	Irradiated Sites							
	Cakitriol 3 mug/g Ointment		Cakitriol Ointment Vehicle		White Petrolatum		Untreated	
	Mean	Range	Mean	Range	Mean	Range	Mean	Range
Baseline (prior to product application)	0	-	0	-	0	-	0	-
0.25 hrs after irradiation	0.44	0-1	0.22	0-1	0.33	0-1	0.39	0-1
24 hrs after irradiation	0.65	0-1	0.59	0-1	0.72	0-2	0.74	0-2
48 hrs after irradiation	0.35	0-1	0.33	0-1	0.43	0-1	0.37	0-1

Table IV. *Mean erythema grades at evaluation time points, non-irradiated sites*

	Non-irradiated Sites							
	Cakitriol 3 mug/g Ointment		Cakitriol Ointment Vehicle		White Petrolatum		Untreated	
	Mean	Range	Mean	Range	Mean	Range	Mean	Range
Baseline (prior to product application)	0	-	0	-	0	-	0	-
0.25 hrs after irradiation	0.33	0-1	0.17	0-0.5	0.26	0-1	0.44	0-2
24 hrs after irradiation	0.22	0-0.5	0.20	0-0.5	0.22	0-1	0.26	0-1
48 hrs after irradiation	0	-	0	-	0	-	0	-

Table V. *Distribution of scores on irradiated and non-irradiated sites during the challenge phase*

	Scores	15-30 min after patch removal before irradiation		48 hrs post irradiation		72 hrs post irradiation	
		Day 2 Left side	Day 2 Right side	Day 4 Irradiated Left side	Day 4 Non-Irradiated Right side	Day 5 Irradiated Left side	Day 5 Non-irradiated Right side
Calcitriol 3 µg/g ointment	0	24/24	24/24	24/24	23/24	24/24	24/24
	0.5	-	-	-	1/24	-	-
Calcitriol vehicle ointment	0	24/24	24/24	24/24	23/24	24/24	24/24
	0.5	-	-	-	1	-	-
White petrolatum	0	24/24	24/24	24/24	23/24	24/24	24/24
	0.5	-	-	-	1	-	-
Untreated	0	24/24	24/24	24/24	23/24	24/24	24/24
	0.5	-	-	-	1	-	-



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