

Una iniciativa de:



ACADEMIA ESPAÑOLA
DE DERMATOLOGÍA
Y VENEREOLOGÍA



ACADEMIA ESPAÑOLA
DE DERMATOLOGÍA
Y VENEREOLOGÍA

Con el patrocinio de:



AEDV 35^a
edición

HIGHLIGHTS

Viena

30sep - 3oct
2026

AEDV 35ª edición

HIGHLIGHTS

Viena
30sep - 3oct
2026

“Fotobiología: transversal, actual y en expansión”

Una iniciativa de:



Con el patrocinio de:



AEDV 35ª edición

HIGHLIGHTS

Viena
30sep - 3oct
2026

Fotodermatosis y fotobiología

Luis Alfonso Pérez González

Hospital Vital Álvarez-Buylla (Asturias)

Una iniciativa de:



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AEDV 35ª edición

HIGHLIGHTS

Viena
30sep - 3oct
2026

INDIQUE SI TIENE ALGÚN CONFLICTO DE INTERÉS

**NO TENGO CONFLICTOS
DE INTERÉS**

Una iniciativa de:



Con el patrocinio de:



European Society for Photodermatology (ESPD): European photodermatology update



ESPD
EUROPEAN SOCIETY FOR
PHOTODERMATOLOGY

Excimer light in alopecia areata

- ✓ 86 pacientes con AA tratados con láser excimer (308 nm).
- ✓ 45 completaron el tratamiento.
- ✓ 100-300 mJ/cm²
- ✓ 2 veces a la semana
- ✓ Hasta mejoría completa o máxima mejoría
- ✓ 30% pacientes con AU o AT
- ✓ SALT basal 72,7

Limitaciones:

No monoterapia: Minoxidil (40% aprox), Corticoides tópicos (17%).

Mantenimiento con UVB-be en 15 pacientes

33% mejoría mayor del 50%
Relación numero sesiones – respuesta
Recaída a los 2 años > 70%

Meta-Analysis > Photodermatol Photoimmunol Photomed. 2020 Nov;36(6):460-469.
doi: 10.1111/phpp.12596. Epub 2020 Aug 24.

Excimer laser/light treatment of alopecia areata: A systematic review and meta-analyses

Ji Hae Lee ¹, Sung Hye Eun ¹, Soo Hyung Kim ¹, Hyun Jeong Ju ¹, Gyong Moon Kim ¹,
Jung Min Bae ¹

Review > J Cosmet Laser Ther. 2017 Apr;19(2):93-99. doi: 10.1080/14764172.2016.1248440.
Epub 2017 Jan 25.

A review on laser and light-based therapies for alopecia areata

Stephanie Mlacker ¹, Adam Souhail Aldahan ¹, Brian James Simmons ¹, Vidhi Shah ¹,
Colin Andrew McNamara ², Sahal Samarkandy ¹, Keyvan Nouri ¹

Review > J Dermatolog Treat. 2021 Aug;32(5):526-529. doi: 10.1080/09546634.2019.1687819.
Epub 2019 Nov 12.

Meta-analysis of 308-nm excimer laser therapy for alopecia areata

A K Gupta ¹, J L Carviel ¹

Randomized Controlled Trial > Lasers Surg Med. 2022 Apr;54(4):502-510. doi: 10.1002/lsm.23501.
Epub 2021 Dec 2.

Comparison of the efficacy and safety of 308-nm excimer laser with intralesional corticosteroids for the treatment of alopecia areata: A randomized controlled study

Nika Kianfar ¹, Shayan Dasdar ¹, Hamidreza Mahmoudi ¹, Robabe Abedini ¹, Shabnam Fahim ¹,
Seyed Amirhossein Hosseini ¹, Maryam Daneshpazhooh ¹

Lee JH, Eun SH, Kim SH, Ju HJ, Kim GM, Bae JM. Excimer laser/light treatment of alopecia areata: A systematic review and meta-analyses. Photodermatol Photoimmunol Photomed. 2020
Gupta AK, Carviel JL. Meta-analysis of 308-nm excimer laser therapy for alopecia areata. J Dermatolog Treat. 2021
Mlacker S, Aldahan AS, Simmons BJ, Shah V, McNamara CA, Samarkandy S, Nouri K. A review on laser and light-based therapies for alopecia areata. J Cosmet Laser Ther. 2017

European Society for Photodermatology (ESPD): European photodermatology update



ESPD
EUROPEAN SOCIETY FOR
PHOTODERMATOLOGY

Ruxolitinib + UVB-be

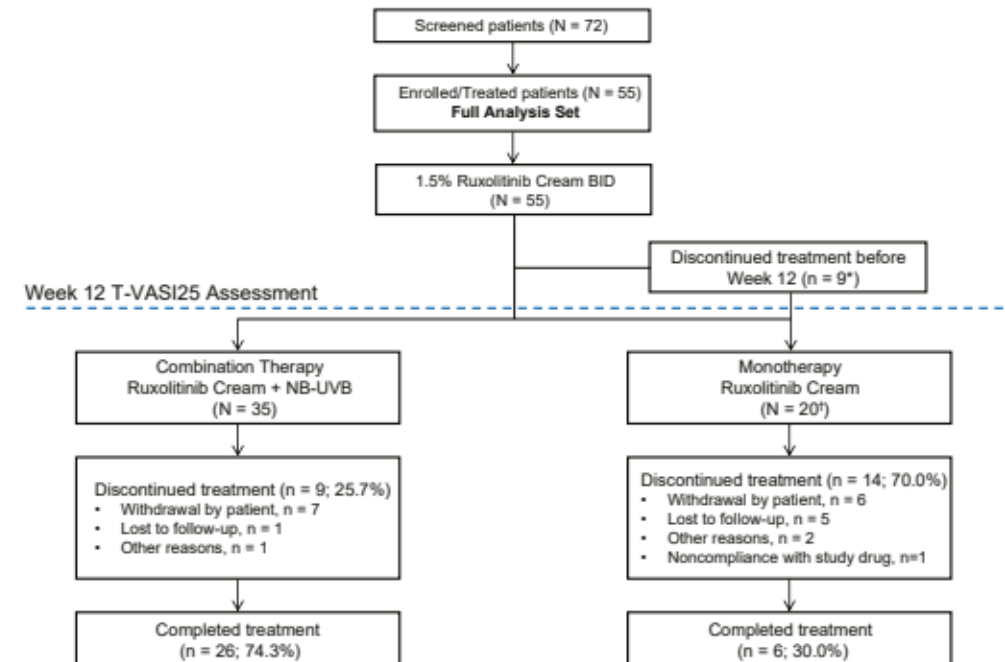
Efficacy and safety of ruxolitinib cream combined with narrow-band UVB phototherapy for treatment of vitiligo

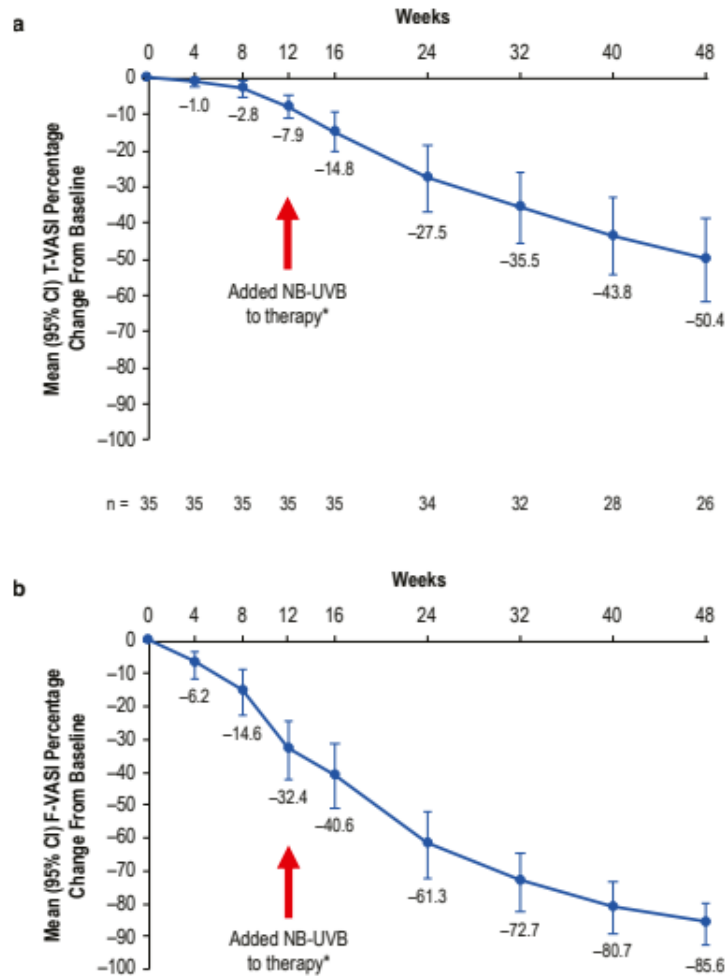
Amit G. Pandya¹, Charles W. Lynde², Maryam Shayesteh Alam³, Ira H. Thorla⁴, Katherine Reed⁵, Lawrence J. Green⁶, Babak Soltanalizadeh⁷, Diana Stefani-Hunyady⁷, Deanna Kornacki⁷ and Mark S. Amster⁸

Journal of Investigative Dermatology (2026) **146**, 1867–1875; doi:10.1016/j.jid.2025.11.016



Open





Ruxolitinib Cream With Narrow-Band UVB Phototherapy (NB-UVB) for Treatment of Nonsegmental Vitiligo

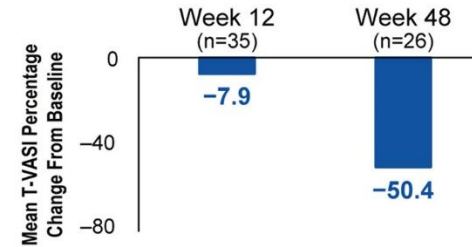
1.5% ruxolitinib cream
monotherapy for 12 weeks



Week 12 assessment of T-VASI25
(≥25% improvement from baseline in total Vitiligo Area Scoring Index)

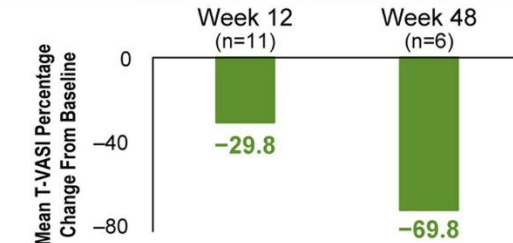
1.5% Ruxolitinib Cream Plus NB-UVB

Patients with <T-VASI25 at Week 12
had meaningful and potentially accelerated
improvement in disease control after addition
of NB-UVB to ruxolitinib cream



1.5% Ruxolitinib Cream Only

Continued ruxolitinib cream monotherapy improved
repigmentation outcomes through Week 48 among
patients with T-VASI25 at Week 12 or patients with
<T-VASI25 at Week 12 who were unable to initiate
combination NB-UVB therapy



No aleatorizado

N=55 con pérdida del 41%

Combinación como estrategia de rescate/aceleración de respuesta
Necesarios más datos para demostrar superioridad de la combinación

Table 3. TEAEs through Week 48

Characteristic, n (%)	Combination NB-UVB Therapy (n = 35)	Ruxolitinib Cream Monotherapy ¹ (n = 20)	Total (N = 55)
Patients with TEAE	21 (60.0)	9 (45.0)	30 (54.5)
Most common TEAEs ²			
Application site acne	4 (11.4)	2 (10.0)	6 (10.9)
Procedural site reaction	4 (11.4)	0	4 (7.3)
Upper respiratory tract infection	3 (8.6)	1 (5.0)	4 (7.3)
Oral herpes	3 (8.6)	0	3 (5.5)
Oropharyngeal pain	1 (2.9)	2 (10.0)	3 (5.5)
Bronchitis	0	2 (10.0)	2 (3.6)
Pyrexia	0	2 (10.0)	2 (3.6)
Skin hyperpigmentation	2 (5.7)	0	2 (3.6)
Patients with application site reactions	5 (14.3)	2 (10.0)	7 (12.7)
Patients with serious TEAE ³	0	2 (10.0)	2 (3.6)
Patients with grade ≥ 3 TEAE ³	1 (2.9)	2 (10.0)	3 (5.5)
Fatal TEAE	0	0	0
Patients with TEAE leading to discontinuation	0	0	0
Patients with TEAE leading to dose interruption	4 (11.4)	2 (10.0)	6 (10.9)
Patients with treatment-related TEAE	13 (37.1)	2 (10.0)	15 (27.3)
Most common treatment-related TEAEs ²			
Application site acne	4 (11.4)	1 (5.0)	5 (9.1)
Procedural site reaction	4 (11.4)	0	4 (7.3)
Oral herpes	2 (5.7)	0	2 (3.6)

60% con combinación vs 45% con monoterapia:

-Fundamentalmente leves/moderados.

Los más característicos fueron:

Acné : 11,4%;

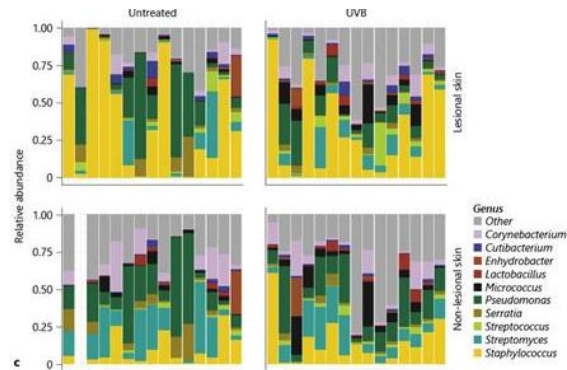
Eritema/quemadura: 11,4%

No eventos graves, ni malignidad, MACE, tromboembolismo o toxicidad hematológica

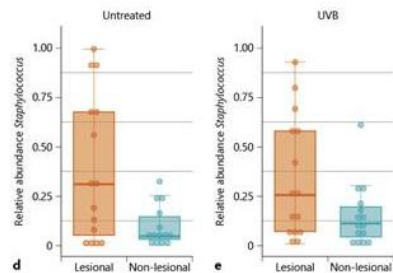
European Society for Photodermatology (ESPD): European photodermatology update



Fototerapia y microbioma cutáneo



La reducción de la abundancia de *S. aureus* mediante fototerapia UVB se relaciona con mejoría de la severidad de la DA



UVB-be



Disminución *S. aureus*
Aumento diversidad microbiota
Disminuye inflamación

> iScience. 2019 May 31;15:211-222. doi: 10.1016/j.isci.2019.04.026. Epub 2019 Apr 26.

Skin Microbiome Modulates the Effect of Ultraviolet Radiation on Cellular Response and Immune Function

VijayKumar Patra¹, Karin Wagner², Velmurugesan Arulampalam³, Peter Wolf⁴

> Exp Dermatol. 2019 Feb;28(2):136-141. doi: 10.1111/exd.13854. Epub 2019 Jan 14.

Ultraviolet radiation, both UVA and UVB, influences the composition of the skin microbiome

Erin M Burns¹, Hana Ahmed², Prescilia N Isedeh³, Indermeet Kohli³, William Van Der Pol⁴, Abdullah Shaheen¹, Anum F Muzaffar¹, Camli Al-Sadek¹, Thompson M Foy¹, Mohammad S Abdelgawwad¹, Sumeira Huda¹, Henry W Lim³, Iltefat Hamzavi³, Sejong Bae⁵, Casey D Morrow⁶, Craig A Elmets¹, Nabiha Yusuf¹

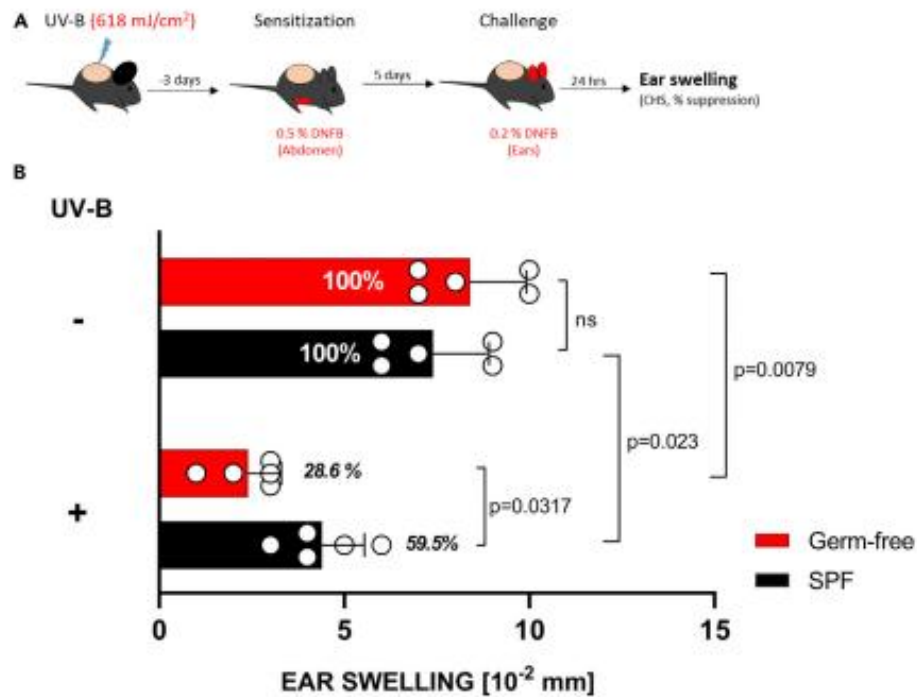
Burns EM, Ahmed H, Isedeh PN, Kohli I, Van Der Pol W, Shaheen A, Muzaffar AF, Al-Sadek C, Foy TM, Abdelgawwad MS, Huda S, Lim HW, Hamzavi I, Bae S, Morrow CD, Elmets CA, Yusuf N. Ultraviolet radiation, both UVA and UVB, influences the composition of the skin microbiome. *Exp Dermatol*. 2019 Feb

Patra V, Wagner K, Arulampalam V, Wolf P. Skin Microbiome Modulates the Effect of Ultraviolet Radiation on Cellular Response and Immune Function. *iScience*. 2019

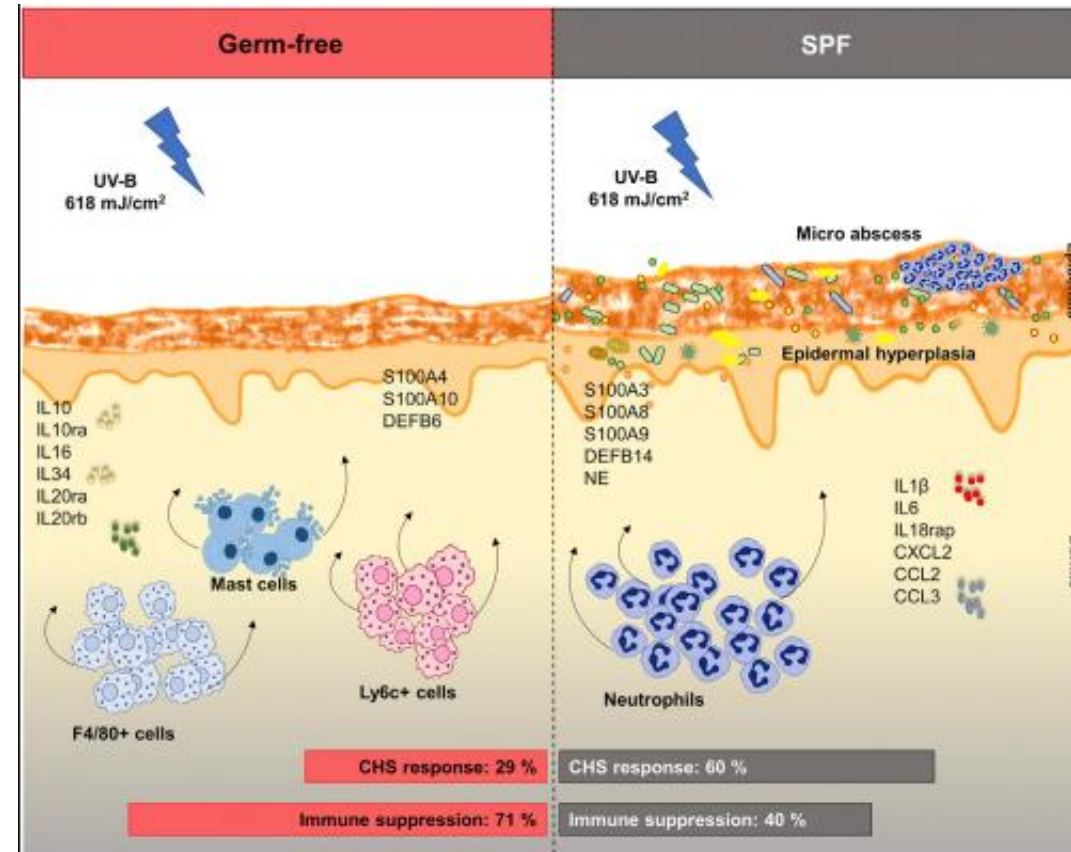
> iScience. 2019 May 31;15:211-222. doi: 10.1016/j.isci.2019.04.026. Epub 2019 Apr 26.

Skin Microbiome Modulates the Effect of Ultraviolet Radiation on Cellular Response and Immune Function

VijayKumar Patra¹, Karin Wagner², Velmurugesan Arulampalam³, Peter Wolf⁴



Sensibilización (2,4-dinitrofluorobenceno)



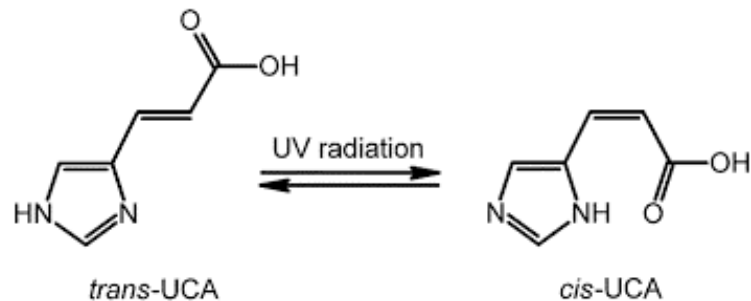
La presencia de microbiota cutánea reduce el efecto inmunosupresor producido por la UV-B

> J Invest Dermatol. 2025 Nov;145(11):2839-2853.e6. doi: 10.1016/j.jid.2025.03.035.
Epub 2025 May 13.

Urocanase-Positive Skin-Resident Bacteria Metabolize cis-Urocanic Acid and in Turn Reduce the Immunosuppressive Properties of UVR

VijayKumar Patra¹, Slave Trajanoski², Aaroh Joshi³, Vanina Lenief⁴, Chloe Goyet⁴, Altan Cornu⁴,
Nicole Golob-Schwarzl³, Meghana Somlapura⁵, Amandine Mosnier⁴, Maximilian Zarfl³,
Thomas Eichmann⁶, Harald Köfeler⁶, Mary Norval⁷, Jean-Francois Nicolas⁸, Peter Wolf⁹,
Marc Vocanson¹⁰

Filagrina → histidina → ácido trans-urocánico (trans-UCA)



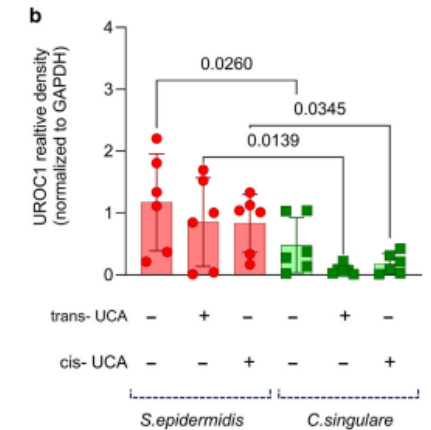
Inmunosupresor

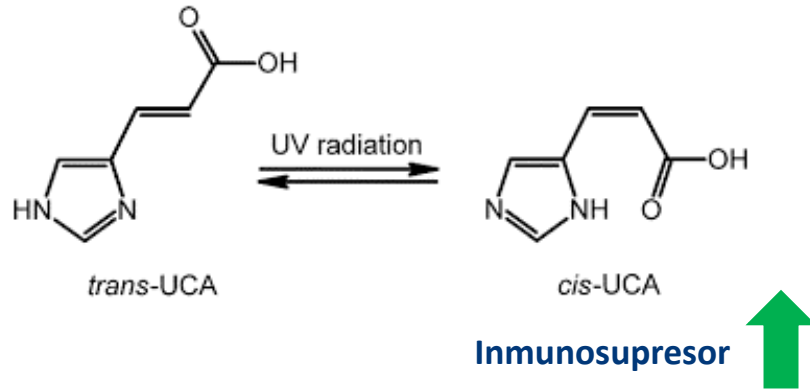
Receptores serotoninérgicos, especialmente 5-HT
H1/H2 histamínicos
↓ TNF-α y PGE
Sustancia P/CGRP;
↑ PD-L1 en células de Langerhans
↓ presentación antigénica
↑ IL-10
Generación de tolerancia local y sistémica.

Bacterias “Hut” (*histidine utilization*)

- ✓ Expresan **Urocanasa**
- ✓ Pueden metabolizar el cis-UCA
- ✓ Aumentan si aportamos cis-UCA exógeno

S. epidermidis → Hut +

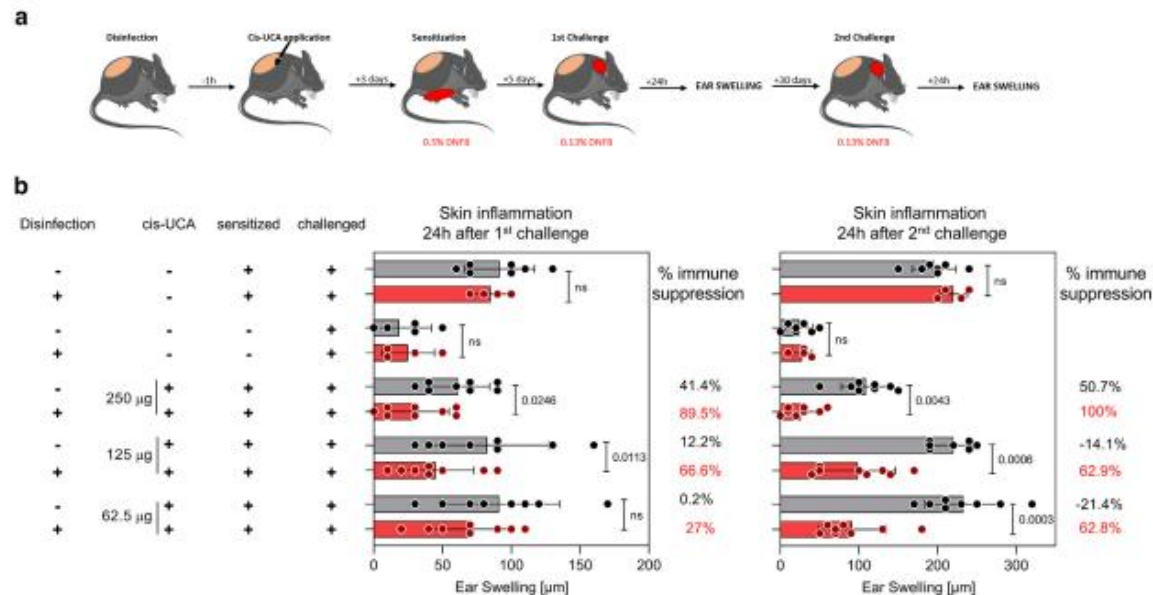




Bacterias Hut+



4-imidazolone-5-propionato $\rightarrow \dots \rightarrow$ glutamato



Al desinfectar la piel con clorhexidina:

- ✓ Aumenta inmunosupresión
- ✓ Se reduce sensibilización (DAC)

Confirmación recolonizando con *S. epidermidis*

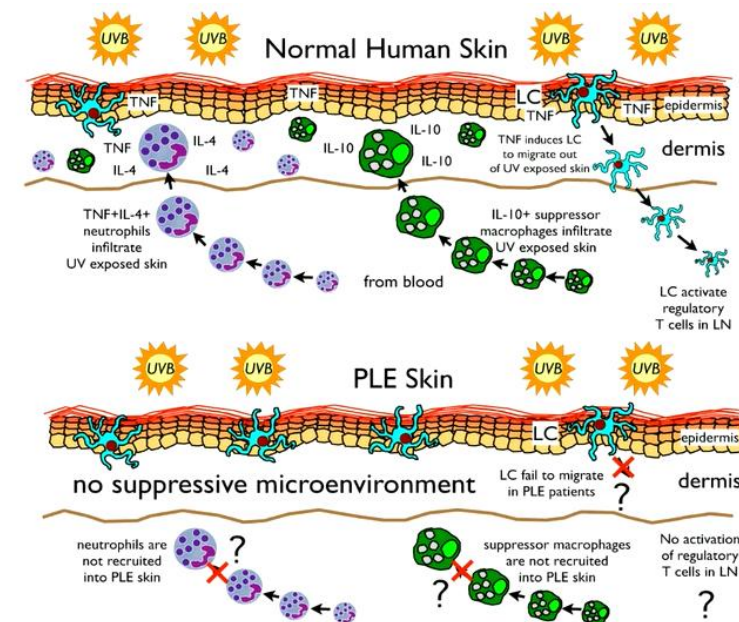
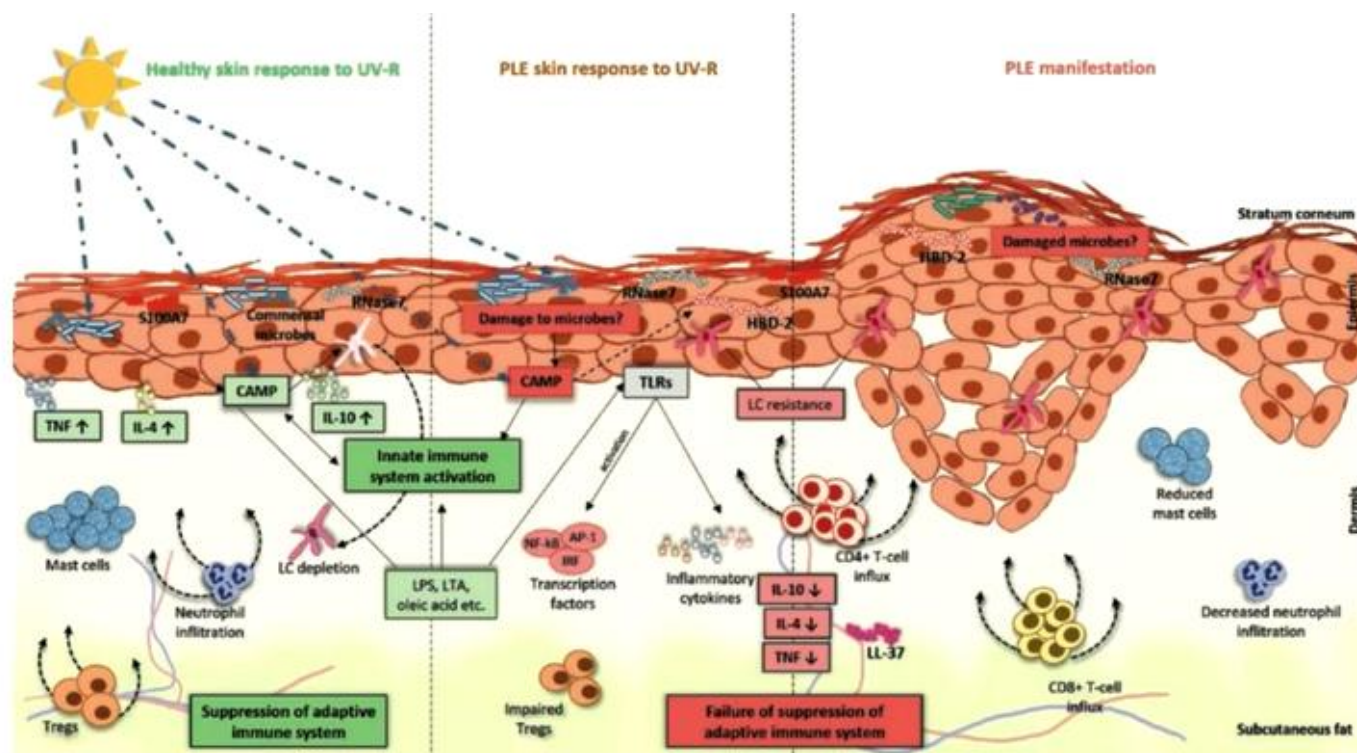
Confirmación inhibiendo Urocanasa

“Modulating the skin microbiome before exposing the skin to UV may enhance the therapeutic efficacy of phototherapy”

> Exp Dermatol. 2016 Dec;25(12):999-1001. doi: 10.1111/exd.13162.

Microbial elements as the initial triggers in the pathogenesis of polymorphic light eruption?

VijayKumar Patra^{1,2}, Peter Wolf²

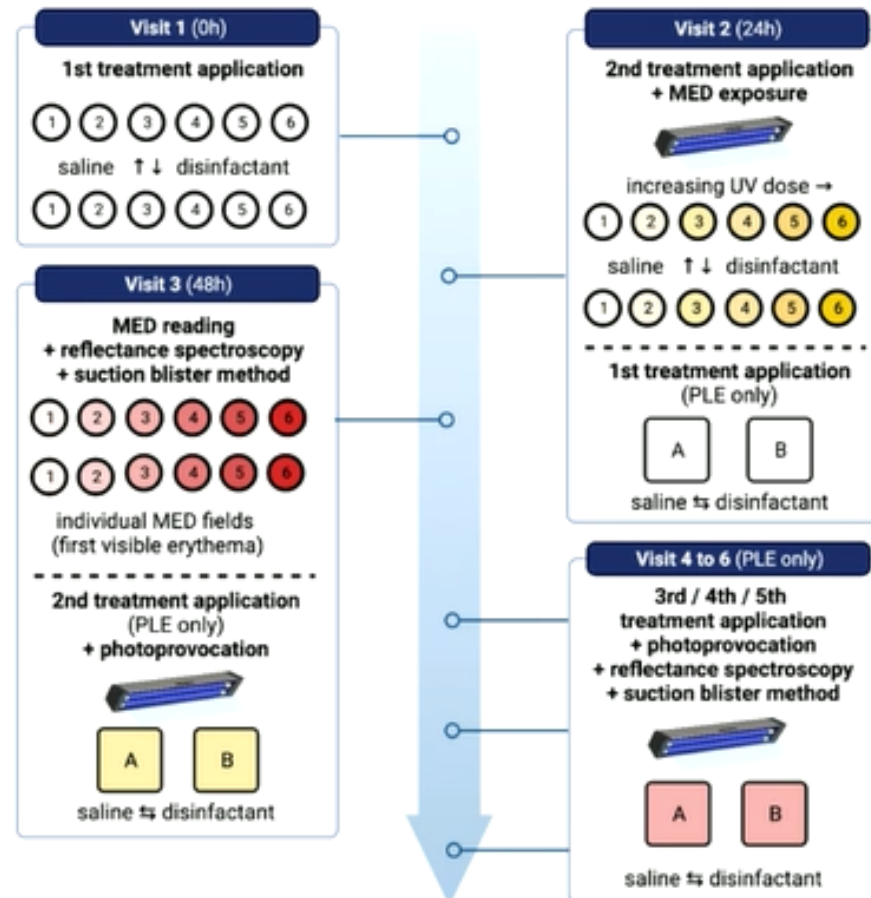
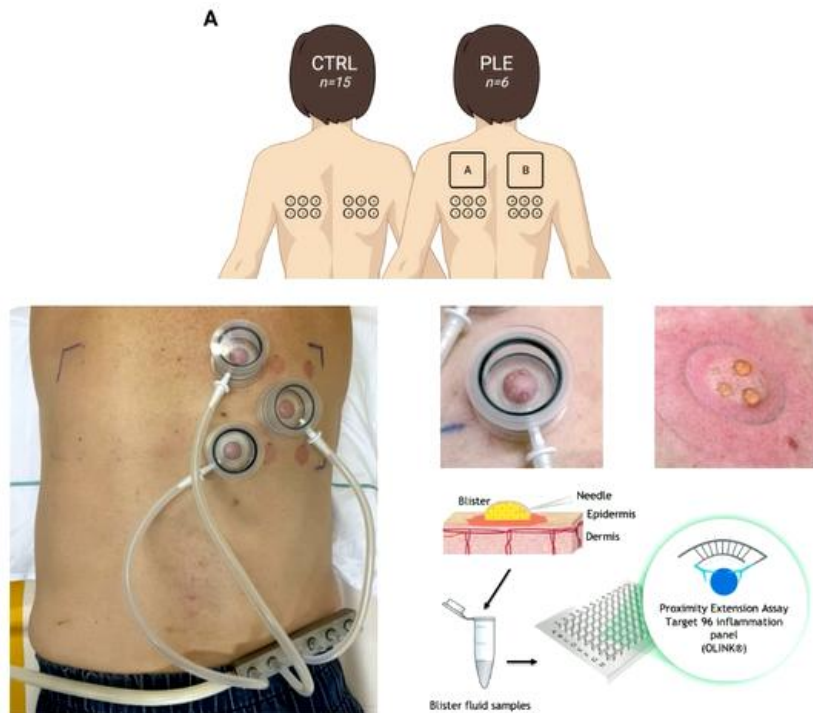


Gruber-Wackernagel A, Byrne S, Wolf P, *Front Biosci* 2009; 1:341-54
Wolf P, Byrne S, Gruber-Wackernagel A, *Exp Dermatol* 2009; 18:350-356

> Exp Dermatol. 2024 Mar;33(3):e15034. doi: 10.1111/exd.15034.

Eradication of skin microbiota restores cytokine production and release in polymorphic light eruption

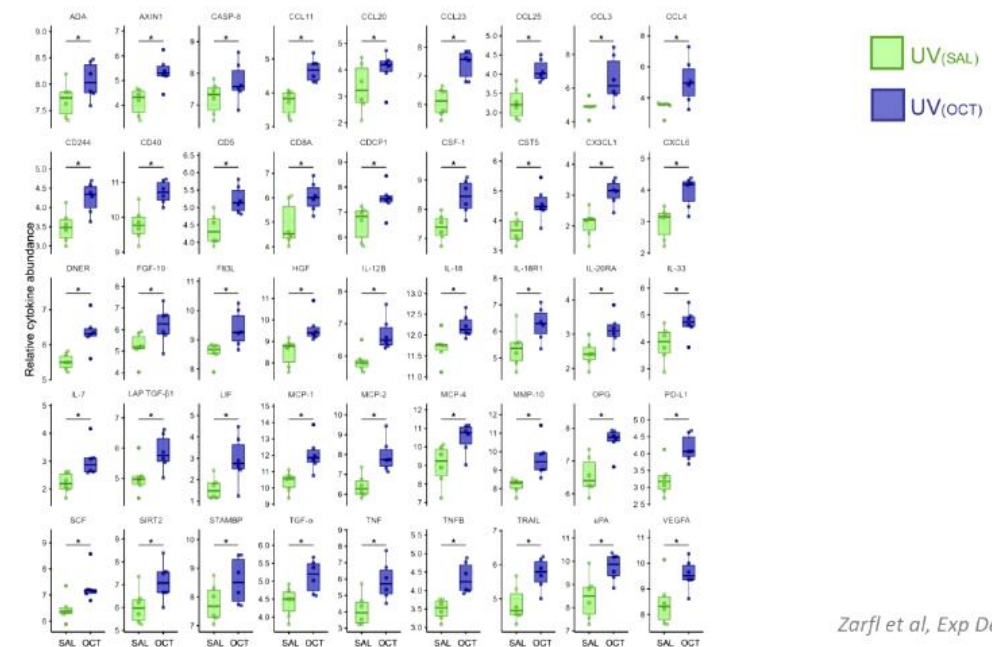
Maximilian Zarfl ¹, Vijaykumar Patra ^{1 2 3}, Natalie Bordag ¹, Franz Quehenberger ⁴,
Nicole Golob-Schwarzl ¹, Alexandra Gruber-Wackernagel ¹, Peter Wolf ^{1 5}





PLE patient, visit 3: Octeniderm™ (octenidine dihydrochloride + propanol) vs. Saline-treated test MED test fields

Impaired cytokine production in PLE skin to UV was rescued by prior disinfection with octenidine dihydrochloride and 1-/2-propanol



Zarfl et al, Exp Dermatol 2024

Consensus Document

Narrowband UVB Phototherapy in Dermatology: GEF-CILAD 2026 Update

J.-M. Carrascosa^a, J. Ubogui^b, Y. Gilaberte^{c,d}, I. Belinchón^e, P. Aguilera Peiróⁱ, M^a V. de Gálvez Aranda^f, J.S. Fagre^g, P. Fonda-Pascual^h, M. Laporte^j, F.J. Navarro Triviño^k, M.F. Ordóñez-Rubiano^{l,*}, A. Pérez Ferriols^m, C. Pizarro-Vargasⁿ, T. Riveros Recine^o, M. Saposnik^b, J.L. López-Esteban^p, J. Aguilera^f



Psoriasis

- ✓ En casos graves sistémico > UVB
- ✓ Especialmente útil: guttata, embarazo, lactancia, niños
- ✓ Si recaída precoz (< 12 semanas) valorar otras opciones.
- ✓ Eficacia a partir de las 2 semanas, máximo a las 6-8

DA

- ✓ Valorar como puente al inicio de terapias biológicas
- ✓ Valorar ciclo de corticoides orales al inicio
- ✓ Efecto limitado en genitales, glúteos y flexuras

Vitíligo

- ✓ Continúa como tratamiento de referencia
- ✓ Datos de seguridad a largo plazo
- ✓ Posibilidad de UVB + iJAK en casos refractarios

- ✓ Evitar estrictamente eritema en niños
- ✓ Revisar suplementación de fólico en embarazadas
- ✓ Datos de seguridad en pacientes con más de 500 sesiones, sin aumento de CC (aumento de QA en > 200 sesiones)

European Society for Photodynamic Therapy (EURO-PDT)



Received: 29 August 2023 | Accepted: 21 January 2024
DOI: 10.1002/ajd.10007

GUIDELINES

European consensus-based interdisciplinary guideline for diagnosis, treatment and prevention of actinic keratoses, epithelial UV-induced dysplasia and field cancerization on behalf of European Association of Dermato-Oncology, European Dermatology Forum, European Academy of Dermatology and Venereology and Union of Medical Specialists (Union Européenne des Médecins Spécialistes)

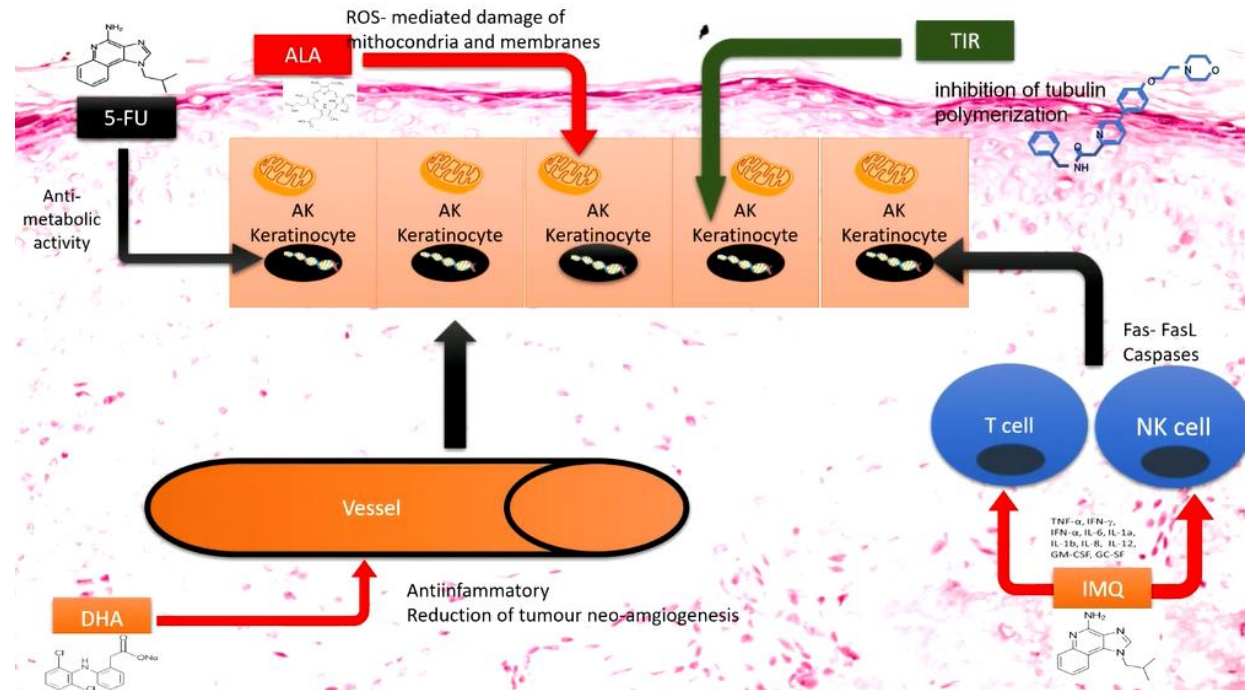
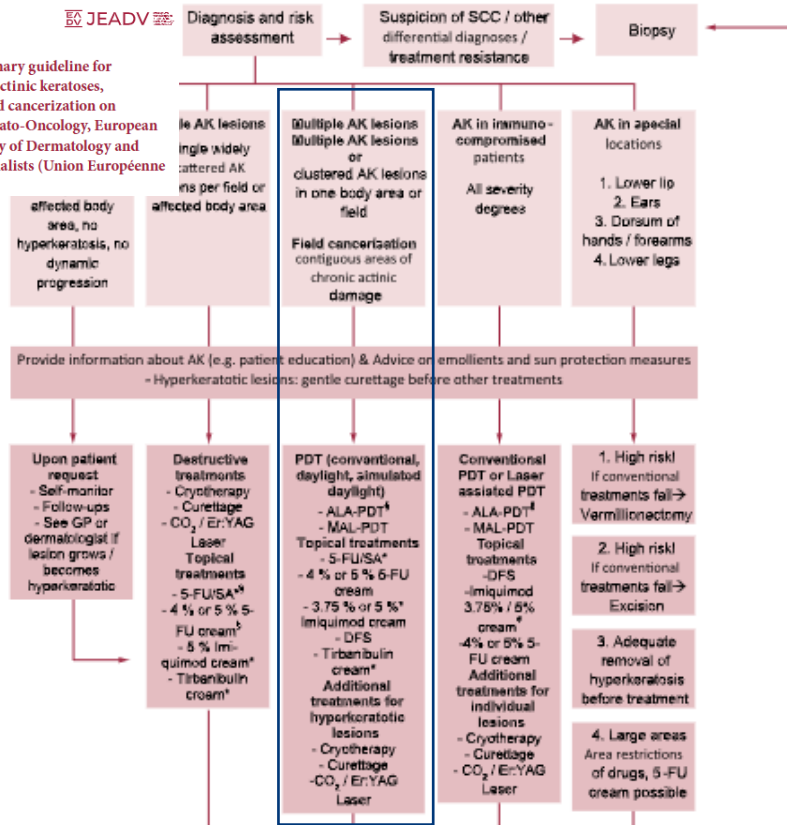


TABLE 14 Review of efficacy and tolerability of actinic keratosis treatments.

Topical agent	Regimen	Localization	Local intervention (L) or field cancerization treatment (F)	Maximum treatable area	Efficacy	Ranking of long-term patient/lesion-specific clearance rates ranking based on network meta-analysis (RR 95% CI) ^a	Provisional grading of application site reactions ^b	Systemic side effects	Ranking of efficacy based on network meta-analysis (OR, 95% CI) ^c
5% 5-FU	Twice daily 4 weeks	Face, scalp neck, extremities	F	500 cm ²	47–94% lesions 38–96% patients	2.80 (0.99–7.86) patient 1.59 (0.82–3.09) lesion	+++	Rarely myelosuppression	35.0 (10.2–164.4)
0.5% 5-FU + salicylic					39.4%–98.7% lesions 55.4% patients	NA (patient) 0.92 (0.44–1.93) lesion	++	None	7.6 (4.6–13.5)
4% 5-FU					80.5% patients	NA (patient)	++ (better than)	Rarely	20.2 (9.1–111.7)
5% imiquimod					45.1%–93.6% lesions 24%–85% patients				
	residual lesion another 4 weeks								
3.75% imiquimod	Once daily 2 weeks, 2 weeks break, then again once daily 2 weeks	Face and scalp	F	None	34%–81.8% lesions				
1% tirbanibulin	Once daily 5 days	Face and scalp	F	25 cm ²	44%–54% lesions 76%–82% patients	NA (patient) NA (lesion)	+	None	11.1% (6.2–20.9)
3% diclofenac	Twice daily 60–90 days	Face and scalp	F	200 cm ² or 8 g/day	51.8%–81% lesions 27%–50% patients	1.13 (0.13–9.89) 0.75 (0.38–1.46)	+	None	2.9 (1.9–4.3)

EFFICACY RATES OF A SINGLE TREATMENT CYCLE

ARE 12-14 MONTHS A LONG TERM FOLLOW-UP?

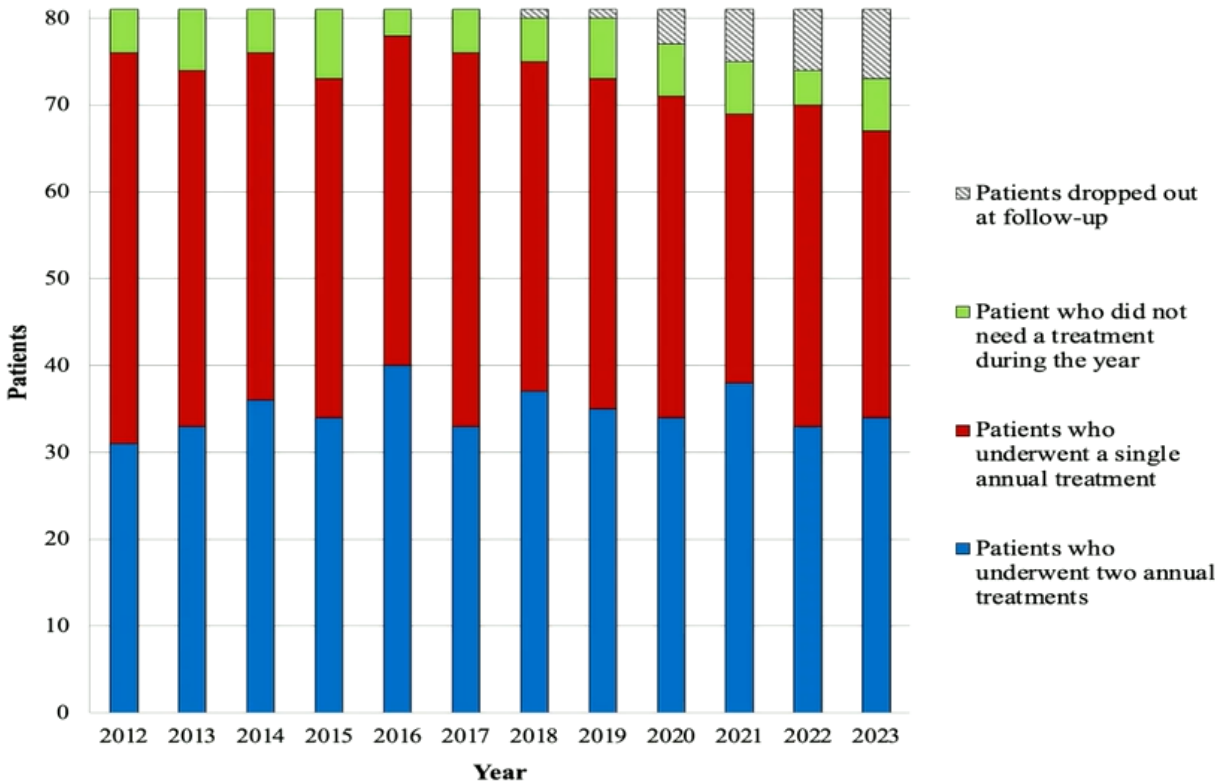
Observational Study

> Dermatology. 2026;242(1):49-57. doi: 10.1159/000548336.

Epub 2025 Dec 3.

Management of All Patients with Multiple Actinic
Keratoses Requires Lifelong Follow-Up and Repeated
Treatment Cycles: A 12-Year Prospective
Observational Study of a Cohort of 81 Patients

Piergiacomo Calzavara-Pinton¹, Mariachiara Arisi¹, Luca Bettolini¹, Sara Rovaris¹,
Vincenzo Maione¹, Simone Soglia¹, Mariateresa Rossi¹, Marina Venturini¹, Stefano Bighetti²



	Face & Scalp	Other body districts			Total
		Trunk	Legs	Arms	
SCCs	223	42	4	25	294
BCCs	46	38	7	19	110
MMs	4	4	3	1	12

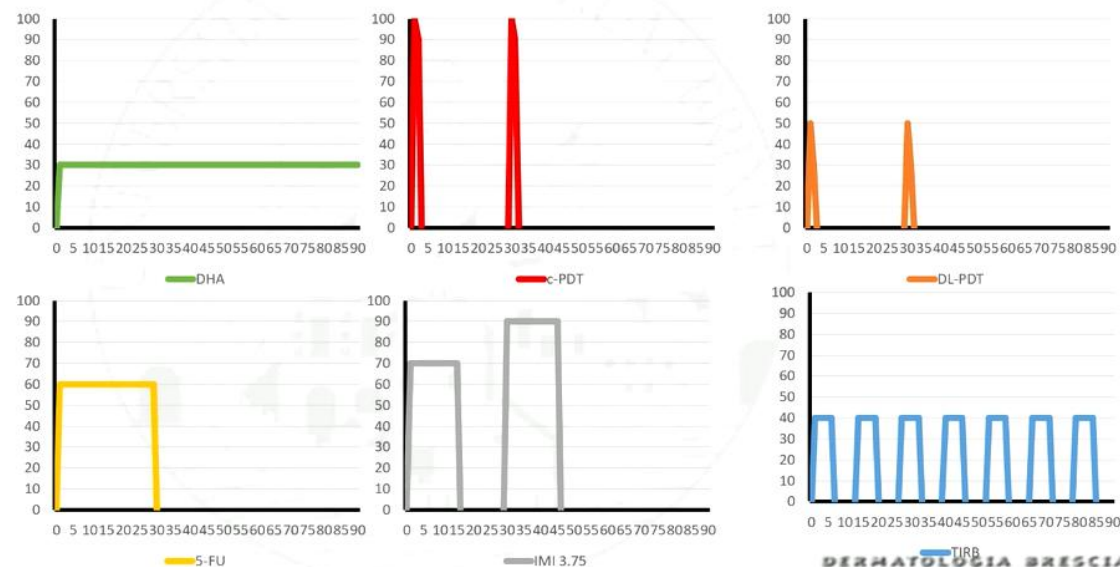
Treatment	Prescribed treatment cycles [n (%)]	Discontinuation of a treatment cycle (%)	Refusal of a further treatment cycle (%)
PDT	539 (41.6%)	3.8%	27.8%
DHA	182 (14.0%)	18.0%	22.0%
IMQ 3.75%	97 (7.5%)	21,3%	27.9%
4% 5-FU	101 (7.8%)	15.8%	22.8%
FU+SA	25 (1.1%)	8.%	24.0%
Cryo	353 (27.2%)	0%	12.2%

TAKE HOME MESSAGES

- MULTIPLE AKs IS A CHRONIC SKIN CONDITION.
- PATIENTS NEED A LONG-TERM LIFELONG FOLLOW-UP AND REPEATED TREATMENT CYCLES
- ADHERENCE OF PATIENTS TO REPEATED TREATMENT CYCLES HAS THE MAXIMAL RELEVANCE AND IT SHOULD BE OPTIMIZED BY CLINICIANS
- REGARDLESS AND IN SPITE OF TREATMENT, THEY HAVE A HIGH RISK TO PROGRESS TO MELANOMA AND NON-MELANOMA SKIN CANCER

- ✓ Entender las **QAs como una enfermedad crónica** (ej: DM-2) que se controla pero no se cura
- ✓ A medio y largo plazo la **aceptabilidad** del tratamiento es más importante que la eficacia para mantener la **adherencia** del paciente
- ✓ **Consensuar el tratamiento con el paciente** en base a sus preferencias mejora la adherencia.

INFLAMMATORY REACTION and PAIN OVER TIME



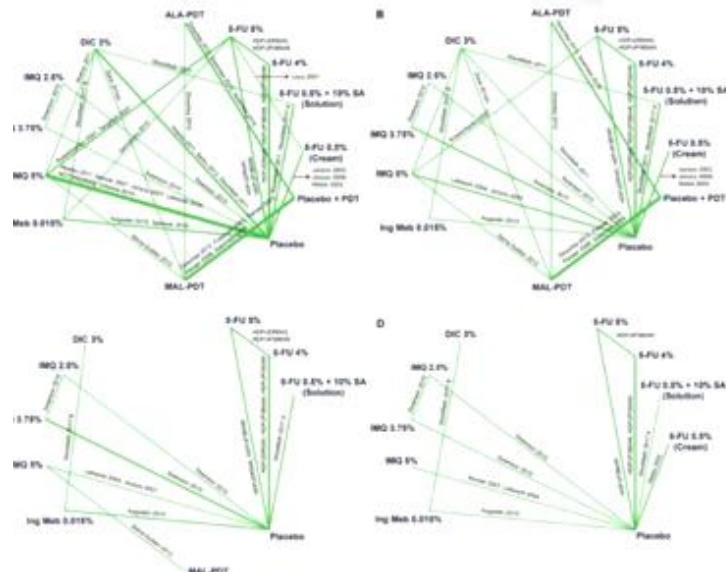
CLINICAL REPORT

Check for updates 1/8

Systematic Literature Review and Network Meta-analysis of the Efficacy and Acceptability of Interventions in Actinic Keratoses

Khaled EZZEDINE¹, Caroline PAINCHAULT² and Melanie BRIGNONE³
¹Department of Dermatology, University Hospital Henri Mondor, Châtenay, ²Kayrus Life Science, Levallois-Perret and ³Yvonne Fabre SA, Boulogne-Billancourt, France

Treatments were ranked using surface under the cumulative ranking (SUCRA) probabilities. SUCRA is a numerical presentation of the overall ranking of each intervention and provides the probability of being the best treatment.



Complete clearance

Treatment	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	Rank 11	Rank 12	Rank 13	SUCRA
5-FU 5%	31.68	24.12	15.09	10.96	6.83	4.93	3.07	1.80	0.98	0.40	0.13	0.03	0.00	84.74
5-FU 4%	17.20	22.56	17.39	12.80	10.13	7.56	5.30	3.55	2.02	1.06	0.37	0.07	0.00	78.26
ALA-PDT	21.94	11.21	10.51	9.84	8.56	8.37	7.74	7.21	6.51	4.33	2.52	1.25	0.00	69.60
IMQ 5%	4.42	8.67	14.34	16.50	16.45	14.49	10.54	7.60	4.37	1.96	0.62	0.04	0.01	66.60
5-FU 0.5% (Cream)	6.49	8.20	11.59	12.69	12.69	12.84	12.05	9.87	7.37	4.27	1.66	0.26	0.02	63.09
Ing Meb 0.015%	6.25	7.23	9.53	10.65	11.93	12.56	13.30	11.31	9.23	6.02	1.48	0.39	0.13	60.30
IMQ 3.75%	6.60	6.32	7.10	7.78	8.59	8.99	10.22	11.32	11.92	10.52	7.15	2.48	1.03	52.93
MAL-PDT	1.00	5.59	6.00	8.14	10.57	11.91	13.47	13.48	13.85	11.57	3.66	0.78	0.00	51.75
IMQ 2.5%	3.80	4.73	5.74	6.20	7.40	8.38	9.82	11.54	13.14	13.86	10.04	3.72	1.65	46.92
5-FU 0.5% + 10% SA (Solution)	0.63	1.35	2.59	4.03	6.24	8.76	11.78	16.23	17.65	20.59	7.99	1.73	0.43	41.47
DIC 3%	0.01	0.04	0.12	0.34	0.52	1.03	2.37	5.22	10.96	20.06	45.97	11.57	1.77	22.01
Placebo	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.20	0.68	2.55	11.92	57.02	27.61	7.70
Placebo + PDT	0.00	0.00	0.02	0.07	0.10	0.17	0.32	0.68	1.32	2.81	6.52	20.65	67.34	4.63

Partial clearance

Treatment	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	Rank 9	Rank 10	SUCRA
5-FU 4%	39.87	40.81	12.23	4.67	1.57	0.56	0.22	0.05	0.01	0.00	89.98
5-FU 5%	40.25	36.83	13.06	5.66	2.49	0.95	0.51	0.19	0.05	0.01	88.95
Ing Meb 0.015%	7.37	9.78	38.41	26.28	8.59	4.76	2.74	1.54	0.48	0.06	71.65
MAL-PDT	8.84	6.73	22.61	25.14	14.47	8.23	5.61	4.14	2.88	1.36	63.97
DIC 3%	2.19	2.99	4.50	15.39	21.43	16.97	12.82	10.10	8.97	4.65	45.56
IMQ 5%	0.13	0.53	2.22	8.84	26.09	29.91	18.09	9.82	4.07	0.30	44.67
IMQ 3.75%	0.58	0.95	2.89	6.16	10.86	16.92	25.04	23.97	9.90	2.73	36.11
5-FU 0.5% + 10% SA (Solution)	0.53	0.84	2.65	5.38	9.59	13.45	20.52	20.91	21.50	4.64	32.10
IMQ 2.5%	0.26	0.53	1.42	2.47	4.90	8.04	13.22	24.61	37.97	6.59	23.87
Placebo	0.00	0.00	0.00	0.01	0.02	0.22	1.22	4.69	14.18	79.67	3.14

► J Eur Acad Dermatol Venereol. 2026 Sep;40(9):e749-e751. doi: 10.1111/jdv.70286. Epub 2026 Jan 2.

Personalizing treatment for multiple actinic keratoses with the validation of a patient decision aid

Ciara Drumm^{1 2}, Aoife Moloney¹, Louise Fleming¹, Imelda Morgan¹, Ciara Keating¹,
Aisling Ryan^{1 2}, Roisin Dolan^{2 3}, Blaithe Moriarty^{1 2 4}, Aoife Lally^{1 2 4}

LETTER TO THE EDITOR

e751

TABLE 1 Decisional conflict, shared decision-making, satisfaction and knowledge scores by group.

Outcome measure	VC group (n = 15) mean (SD)	PDA group (n = 18) mean (SD)	Mean difference	p	Effect size (d)
Decisional conflict scale (0–100)					
Total score	22 (15)	3 (4)	–19.2	<0.001	–1.83
Informed subscore	40 (34)	2 (5)	–37.7	<0.001	–1.63
Values clarity subscore	24 (24)	3 (6)	–21.3	0.001	–1.27
Support subscore	15 (18)	1 (4)	–13.6	0.005	–1.07
Uncertainty subscore	31 (28)	4 (7)	–26.4	0.003	–1.36
Effective decision subscore	21 (26)	2 (4)	–19.3	0.004	–1.10
SDMQ-9					
Total score (0–45)	35 (8)	44 (2)	+9.0	<0.001	1.66
Transformed score (0–100)	78 (17)	98 (4)	+20.0	<0.001	1.65
Satisfaction score (8–40)	28 (6)	36 (3)	+8.9	<0.001	1.80
Knowledge assessment (0–6)	4.9 (0.8)	5.3 (1.0)	+0.5	0.150	0.51

PHOTODYNAMIC THERAPY



EFUDIX 5% (FLUOROURACIL)



We extend our gratitude to the patients of St. Vincent's University Hospital for generously sharing their photos with us.

RESOURCES

- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK)
- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK) – Shared Decision-Making (SDM) version
- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK) – Values Clarity version
- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK) – Support version
- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK) – Uncertainty version
- ▶ Patient Decision Aid for Multiple Actinic Keratoses (PDA-MAK) – Effective Decision version

Read updated October 2025
Read for review October 2026

PATIENT DECISION AID FOR THE TREATMENT OF MULTIPLE ACTINIC KERATOSES

Developed by the Dermatology Department of St. Vincent's University Hospital, Dublin, Ireland. St. Vincent's University Hospital is a member of the HSE network.

Dr. Ciara Drumm, St. Vincent's University Hospital, Dublin, Ireland

WHAT IS A PATIENT DECISION AID?

A Patient Decision Aid (PDA) is a tool that helps you understand your condition and the options available to you. It provides information about the benefits and risks of each option, and helps you make a decision that is right for you.

WHY DO I NEED IT?

You need a PDA to help you understand your condition and the options available to you. It provides information about the benefits and risks of each option, and helps you make a decision that is right for you.

WHAT ARE MULTIPLE ACTINIC KERATOSES?

Actinic keratoses are small, rough patches of skin that are caused by long-term exposure to the sun. They are a sign of skin damage and can lead to skin cancer if left untreated.

WHY TREAT THEM?

Treating actinic keratoses can help to prevent them from becoming skin cancer. It can also help to improve the appearance of your skin and reduce the risk of further skin damage.

TREATMENT OPTIONS

	PHOTODYNAMIC THERAPY	EFUDIX 5% (FLUOROURACIL)	CRYOTHERAPY	5-FUOXYL (5-FUOXYL)	5-FUOXYL (5-FUOXYL)	5-FUOXYL (5-FUOXYL)
What is it?	A treatment that uses a special light to destroy the abnormal skin cells that cause actinic keratoses.	A topical cream that destroys the abnormal skin cells that cause actinic keratoses.	A treatment that uses a special liquid to destroy the abnormal skin cells that cause actinic keratoses.	A treatment that uses a special liquid to destroy the abnormal skin cells that cause actinic keratoses.	A treatment that uses a special liquid to destroy the abnormal skin cells that cause actinic keratoses.	A treatment that uses a special liquid to destroy the abnormal skin cells that cause actinic keratoses.
How long does it take?	15–30 minutes	1–2 weeks	1–2 weeks	1–2 weeks	1–2 weeks	1–2 weeks
How often does it need to be repeated?	Once	Once	Once	Once	Once	Once
What are the benefits?	It is a quick and easy treatment that can be done in a clinic. It can help to improve the appearance of your skin and reduce the risk of further skin damage.	It is a simple and effective treatment that can be done at home. It can help to improve the appearance of your skin and reduce the risk of further skin damage.	It is a simple and effective treatment that can be done at home. It can help to improve the appearance of your skin and reduce the risk of further skin damage.	It is a simple and effective treatment that can be done at home. It can help to improve the appearance of your skin and reduce the risk of further skin damage.	It is a simple and effective treatment that can be done at home. It can help to improve the appearance of your skin and reduce the risk of further skin damage.	It is a simple and effective treatment that can be done at home. It can help to improve the appearance of your skin and reduce the risk of further skin damage.
What are the risks?	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.	It can cause temporary redness and swelling of the skin. It can also cause temporary blisters and peeling of the skin.
What are the costs?	Free	Free	Free	Free	Free	Free
What are the side effects?	None	None	None	None	None	None
What are the contraindications?	None	None	None	None	None	None



European Society for Photodynamic Therapy (EURO-PDT)

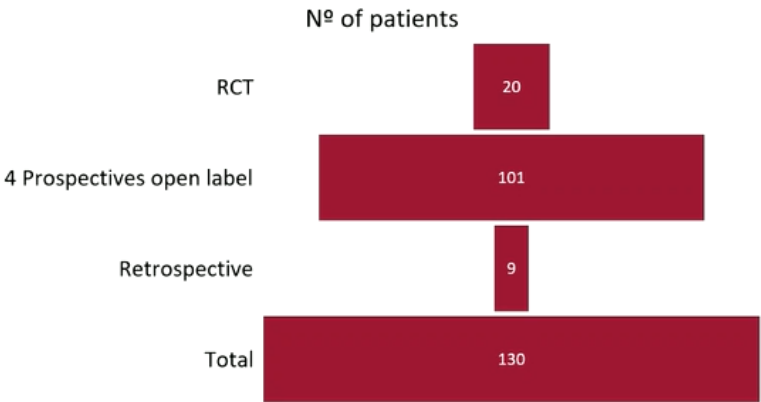


TFD con luz de día auto-administrada



ORIGINAL
Daylight en autoaplicación domiciliaria: mapa actual en España y propuestas de manejo
 T. Gracia-Cazaña* e Y. Gilaberte

	Levi et al.	Karrer et al.	Garcia-Gil et al.	O'Reilly et al.	Saenz-Guirado et al.	Bajek et al.
Year of publication	2018	2019	2022	2023	2024	2024
Type of study	Retrospective cohort study	Open-label interventional multicentre study	Prospective observational open-label multicentre study	Prospective observational study	Single-blind randomised non-inferiority clinical trial	Pilot study
N	9	50	22	17	20 (11 D-PDT)	12
Control group	N/A	N/A	N/A	N/A	Clinic based PDT	N/A
Clinical indication	Actinic cheilitis	AK	AK	AK	AK	AK
Protocol photosensitizer	MAL	MAL	MAL	MAL	BF-200 ALA	MAL



SA-PDT is a spectrum

More clinic control

More patient autonomy

Clinic-initiated
dPDT

Partially home-
based dPDT

Fully self-
applied dPDT

Kit-supported
dPDT

Skin
preparation

Photosensitizer
application

Daylight
exposure

Supervision



Posters

Poster ID - P1638

Attenuation of HEV blue light-induced fibroblast lipofuscin accumulation via a Triasorb-based formulation

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Introduction & Objectives

HEV blue light-induced fibroblast lipofuscin accumulation is a key factor in skin aging. Triasorb-based formulations, containing Triasorb, a natural antioxidant, may attenuate this process. The aim of this study was to evaluate the effect of Triasorb-based formulations on HEV blue light-induced fibroblast lipofuscin accumulation.

Materials & Methods

HEV blue light (405 nm, 10 mW/cm²) was applied to fibroblasts for 30 min. Triasorb-based formulations (Triasorb 1% and Triasorb 5%) were applied to the cells. Lipofuscin accumulation was measured by fluorescence microscopy. The effect of Triasorb-based formulations on HEV blue light-induced fibroblast lipofuscin accumulation was evaluated by fluorescence microscopy.

Results

HEV blue light-induced fibroblast lipofuscin accumulation was significantly reduced by Triasorb-based formulations. Triasorb 5% showed a higher reduction than Triasorb 1%.

Acknowledgement

This work was supported by the French Ministry of Health.

References

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COMPARATIVE EVALUATION OF THE ANTIFUNGAL EFFECT OF BLUE LIGHT AND LULICONAZOLE IN AN ANIMAL MODEL OF DERMATOPHYTOSIS

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Introduction

Dermatophytes are common superficial fungal infections with substantial morbidity and increasing therapeutic challenges, particularly with the emergence of antifungal resistance. Blue light has demonstrated antimicrobial activity without requiring an exogenous photosensitizer, but evidence against dermatophytes remains largely in vitro. ¹ This study aimed to evaluate the antifungal efficacy of 460-nm blue light, alone and in combination with luliconazole, using both in vitro and in vivo models.

Materials & Methods:

T. mentagrophytes was exposed to 20–120 J/cm² of 460-nm blue light in vitro, and colony-forming units (CFUs) were counted after 7 days. Thirty-two BALB/c mice with experimental tinea corporis were assigned to control, blue light (BL), topical luliconazole (TL), or combination (BLTL) groups (n=8 each). BL was administered as four 30-J/cm² sessions (cumulative fluence, 120 J/cm²), and TL was applied daily for 7 days. Clinical scores were recorded on days 8 and 15; fungal burden and histopathological outcomes were assessed on day 15.

In vitro, 460-nm blue light produced a dose-dependent antifungal effect, reducing *T. mentagrophytes* colony counts from 68.63 ± 2.62 CFU/mL in controls to 1.13 ± 1.13 CFU/mL at 120 J/cm², corresponding to 98.4% growth inhibition (p<0.001) (Fig. 1).

In the murine model, baseline clinical scores were comparable among groups, whereas by day 15 all active treatments significantly improved total clinical scores versus control (p<0.012), with the greatest clinical improvement observed with combined blue light and luliconazole (BLTL) (Fig. 2-3).

Fungal burden was reduced by 75.5% with blue light, 94.7% with topical luliconazole, and 98.4% with BLTL compared with control. Reductions were significant for luliconazole and BLTL versus control (both p<0.001), while BLTL also achieved significantly lower fungal burden than either monotherapy (both p<0.001). Histopathological scores differed significantly among groups (p<0.004), with BLTL showing the lowest score and the only significant reduction versus control after adjustment (p=0.004).

Results:

Figure 1: In vitro antifungal effect of 460-nm blue light on *T. mentagrophytes*. Colony counts (CFU/mL) were significantly reduced in a dose-dependent manner compared to the control group.

Figure 2: In vivo antifungal effect of blue light and luliconazole on *T. mentagrophytes* in a murine model. Clinical scores were significantly reduced in the BLTL group compared to control and monotherapies.

Figure 3: Histopathological outcomes in a murine model. BLTL treatment resulted in the lowest histopathological scores, indicating the least tissue damage.

Discussion:

Our findings demonstrate that 460-nm blue light has dose-dependent antifungal activity against *T. mentagrophytes* and may enhance the efficacy of topical luliconazole in vivo.² The weaker effect of blue-light monotherapy in animals compared with in vitro conditions may reflect limited tissue penetration and attenuation by the stratum corneum and other skin components.³ Although all active treatments improved clinical scores, the combination achieved the lowest fungal burden and most favorable histopathological findings, suggesting complementary antifungal effects.⁴

In conclusion, 460-nm blue light may represent a practical adjunct to conventional topical antifungal therapy. Further studies are needed to define optimal irradiation parameters, confirm efficacy across dermatophyte species, and determine whether the combined effect is additive or synergistic.

References

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IMMEDIATE EFFECTS OF UV RADIATION ON THE HUMAN SKIN MICROBIOME: FLOW CYTOMETRY UNCOVERS RAPID, DOSE-DEPENDENT RESPONSES

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Background

The immediate effects of ultraviolet radiation (UVR) on the human skin microbiome remain poorly understood [1]. Conventional sequencing-based analyses can be costly and complex, particularly in longitudinal studies with multiple exposure levels and sampling time points. Flow cytometry (FC) provides a rapid, high-resolution approach for detecting changes in microbial community structure.

Objective

This study [2] aimed to investigate immediate, time- and dose-dependent changes in the human skin microbiome following acute, controlled UVR (UVA/UVB) exposure using flow cytometry.

Study Design

Study design: A randomized, controlled, longitudinal study. Participants: Healthy human volunteers. Interventions: Acute UVR exposure (UVA/UVB) at different doses and time points. Measurements: Flow cytometry analysis of skin microbiome composition.

Effects of UVR on the Skin Microbiome

Flow-cytometric fingerprints revealed significant shifts in microbial community structure already 30 minutes after UV exposure. These immediate differences between irradiated and non-irradiated sites were detectable even at moderate suberythral doses (0.5 and 0.7 MED) (Fig. 3).

Figure 3: Flow-cytometric fingerprints of skin microbiome. The figure shows a series of flow cytometry plots (FACS plots) representing the microbial community structure at different time points and UVR doses. The plots show a clear shift in the microbial community structure after UVR exposure, with the irradiated sites showing a more diverse and complex community structure compared to the non-irradiated sites.

Conclusions

Solar-simulated UVR rapidly modulates skin microbial community structure within 30 minutes, even at suberythral doses. Flow cytometry provides a cost- and time-efficient screening tool for identification of relevant exposure levels and sampling time points for targeted downstream sequencing analyses.

Abstracts of the 35th Annual Meeting of the European Society of Photodermatology, September 30 - October 3, 2026, Vienna, Austria

Accelerated indoor daylight photodynamic therapy for actinic keratosis
using broad-spectrum RGB LED illumination:

a proof-of-concept study

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VIENNA

30 September - 3 October 2026

Poster
P2411Abstract
AS-3147

BACKGROUND

Conventional LED-PDT for actinic keratosis (AK) is highly effective but often associated with severe treatment-related pain, particularly for large facial or scalp fields. Daylight PDT is much better tolerated, but difficult to standardize.

OBJECTIVE

To investigate whether commercially available broad-spectrum RGB LED illumination can provide a standardized indoor alternative to daylight PDT while maintaining the favorable tolerability profile.

FROM DAYLIGHT TO RGB LED

- Daylight + PDT**
- Broad spectrum visible light
 - Continuous low-fluence activation
 - Good tolerability
 - Difficult to standardize

Requirements for an indoor light source

- Broad visible spectrum
- Overlap with PpIX absorption peaks
- Sufficient light output
- Homogeneous field illumination
- Low heat production
- Adjustable intensity
- Practical treatment distance
- Commercially available

Selected system:
Bresser BR-150RGB

- Broad spectrum RGB LED
- Adjustable intensity and spectrum
- Suitable for large field illumination
- Low heat
- Commercially available

TREATMENT PROTOCOL

- Preparation**
 - Depigmenting with peroxide after 1 week (coverage of hyperkeratotic lesions)
- Apply 5-ALA**
 - 5-ALA 20% topical solution (ointment)
 - Thin visible layer
 - No occlusion
- Incubation**
 - 15 minutes
- RGB illumination**
 - Bresser BR-150RGB
 - 50 cm distance
 - 45 minutes
 - Multiple lamps as required
- Aftercare**
 - Wash treatment area
 - SPF 50
 - Avoid direct sun exposure for 48h
 - Excellent as needed

THE TREATMENT SET-UP



Bilateral facial treatment using multi-angle broad-spectrum RGB LED illumination. Large field treatment was well tolerated with minimal or absent pain.

CLINICAL EVOLUTION IN A PATIENT WITH EXTENSIVE FACIAL AK



15 minutes incubation | 45 minutes RGB LED illumination

Marked clinical improvement was observed, with delayed erythema and crusting. The treatment was well tolerated, with minimal or absent pain during illumination.

CONCLUSIONS

Broad-spectrum RGB LED illumination may provide a standardized indoor alternative to daylight PDT, combining large field treatment with markedly improved tolerability. Accelerated indoor daylight-like PDT using short-wavelength topical 5-ALA appears feasible, well tolerated, and clinically active for field treatment of actinic keratosis. This standardized treatment modality and its ability to efficiently treat large surface areas may offer additional practical and economic advantages.

INITIAL CLINICAL OBSERVATIONS

- Minimal or absent pain during illumination
- No treatment-limiting discomfort
- Large facial and scalp fields can be treated
- Delayed erythema and crusting
- Initial clinical improvement of AK lesions and field cancerization
- Increasing light intensity (multi-light/multi-angle) and prolonging illumination time did not noticeably increase patient discomfort or clinical response

WORKING HYPOTHESIS

- Broad-spectrum, low-fluence illumination
- Gradual PpIX activation
- Reduced acute photodynamic pain
- At increasing fluence, PpIX production and/or intracellular photodynamic kinetics may become the rate-limiting factor.

NEXT STEPS

- Prospective controlled studies to optimize:
 - Light dose (intensity and fluence)
 - Incubation time
 - Illumination time and configuration
- Clinical efficacy
- Pain / tolerability
- Comparison with conventional PDT

From daylight to standardized indoor daylight-like PDT

SOURCE
PEOPLE
PATIENTSLow-Fluence Photodynamic Therapy for Vulvar Lichen
Sclerosus: Clinical Efficacy at Reduced Energy ParametersKatarzyna Beutler-Rucińska, Alina Jankowska-Konsur, Danuta Nowicka²¹ University Centre of General Dermatology and Oncodermatology, Wrocław Medical University, Wrocław, Poland,² Division of Aesthetic Dermatology and Regenerative Medicine of the Skin, Wrocław Medical University, Wrocław, Poland

Introduction

Photodynamic therapy (PDT) protocols for vulvar lichen sclerosus (VLS) typically employ high fluence parameters (80-150 J/cm²), which may be associated with significant procedural discomfort. This study aimed to evaluate the clinical efficacy of a novel low-fluence PDT protocol in patients with refractory VLS.

Photodynamic Therapy (PDT) Protocol Parameters

(PpIX 100 mg, 10% in 100% EtOH, 100 mg in 100% EtOH, 100 mg in 100% EtOH)

Author(s) / Year	Country	Fluence (J/cm ²)	Fluence rate (J/cm ² /min)	Light source	Outcome
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission
Lee et al. (2016)	China	100-150	10-20	LED	Complete remission

Materials & Methods

40 patients with refractory VLS underwent PDT using a 10% 5-aminolevulinic acid nonaemulsiol applied under occlusive aluminum foil dressing. Unlike conventional high-fluence protocols, our approach utilized significantly lower energy parameters following a 5-hour incubation period, patients received 10-minute LED illumination (red light, 655 nm) at 37 J/cm² (77 mW/cm²), with sessions spaced 4-6 weeks apart. Patients received 1-6 treatment sessions. Clinical outcomes were assessed using the Dermatology Life Quality Index (DLQI) and Female Sexual Function Index (FSFI). The study has been approved by the Bioethics Committee of the Wrocław Medical University, decision no. 474/2025.

Results

37 patients completed the DLQI, and 20 sexually active patients were included in the FSFI analysis. Despite using approximately 50-75% lower fluence than conventional protocols, significant improvements were observed. A greater number of PDT sessions correlated with improved DLQI scores ($r = -0.583$, adjusted $p < 0.001$). Significant associations were found between the number of sessions and total FSFI score ($p = 0.04$), as well as desire ($p = 0.06$), arousal ($p = 0.020$), orgasm ($p = 0.020$), and satisfaction ($p = 0.06$) domains. Age ($p = 0.016$) and disease duration ($p = 0.020$) were identified as factors associated with poorer quality of life outcomes.

Conclusions

A low-fluence PDT protocol (37 J/cm²) demonstrates significant improvements in quality of life and sexual function in patients with refractory VLS. These findings suggest that lower energy parameters may achieve comparable efficacy to high-fluence protocols (80-150 J/cm²) reported in the literature, while offering potential advantages in tolerability and patient comfort. The cumulative number of sessions appears to be a key determinant of clinical response. Comparative studies directly evaluating low- versus high-fluence protocols are warranted.

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EADV CONGRESS 2026 | ABSTRACT AS-3542 | e-POSTER P0662 | DERMATOPATHOLOGY

Untargeted MALDI imaging of photodamaged skin and actinic keratosis guided by transcriptomic findings

Teresa Torres¹, Mercedes Alvarado², Gemma Tello-Martí, Josep Malvehy Guillot², Leonor Prieto², Susana Puig²¹ IDBAPS, Hospital Clínic de Barcelona, Barcelona, Spain. ² Laboratori Dermatològic La Roche-Posay, L'Oréal, Madrid, Spain

Presenting author: Dr. Teresa Torres | teresa@clinic.cat

INTRODUCTION

Actinic keratosis (AK) are premalignant lesions of chronically sun-exposed skin, and UV-induced DNA damage is considered their main trigger. Field cancerization (FC) is the surrounding, often subclinical, photodamaged skin that carries the same genetic alterations as visible lesions [1].

Chronic UV exposure also remodels the dermal extracellular matrix (ECM). UV induces matrix metalloproteinases, notably MMP-1, which cleaves type I collagen [2]. This response is initiated in part by UV-induced DNA damage [3], and collagen fragments further activate MMP-1 in dermal fibroblasts, sustaining a degradative loop [4].

Nicotinamide, an NAD⁺ precursor, replenishes cellular ATP, enhances repair of UV-induced DNA damage and prevents UV-induced immunosuppression [5]. Oral nicotinamide reduced new AK and keratinocyte cancers in a phase 3 trial [7]. Our previous RNA-seq study of AK and FC treated with a sunscreen containing nicotinamide and D-pantethol showed down-regulation of cell-cycle, p53 and cancer pathways [8], and in photodamaged skin the same sunscreen up-regulated collagen genes, including COL1A2 [9]. However, bulk transcriptomics lacks spatial and protein-level resolution.

Objective: To characterize AK and FC by untargeted MALDI imaging before and after treatment, and to explore spatially resolved peptide signals corresponding to candidates identified by RNA-seq.

MATERIALS AND METHODS

Patients and treatment. Patients with AK applied a broad-spectrum sunscreen with very high UVB/UV-A protection containing nicotinamide and D-pantethol daily for 8 weeks on AK and surrounding FC [9]. Biopsies of AK and FC were taken before (PRE) and after (POST) treatment and formalin-fixed and paraffin-embedded (FFPE).

MALDI imaging. FFPE sections were analyzed by untargeted peptide MALDI imaging mass spectrometry (MALDI-IMS) with trapped on mobility [10]. Spectra were processed in SOLIS Lab and TIC-normalized. The present analysis includes 22 PRE/POST sections from 10 patients, the AK and FC comparisons each include 8 sections from 5 patients (3 complete PRE/POST pairs).

Statistics. For each of 157 features, log₂ intensity was modeled with a linear mixed model (fixed effect POST vs PRE, patient random intercept). Wald p-values were corrected by Benjamini-Hochberg (BH) across all features [11]. Parametric bootstrap (1000 simulations) calibrated the MS likelihood ratio test. Bootstrap inference was provided because of the small number of patients.

Peptide identification. Significant features were matched by exact (BH) not to a preliminary identification list obtained by tissue microanalysis and LC-MS (MALDI vs LC-MS mass error ≤ 8 ppm for the assigned peptides).

RESULTS

The feature tentatively assigned to COL1A2 (m/z 1562.8012) showed lower POST vs PRE signal in all three complete FC pairs (Figure 1, Table 3); model adjusted POST/PRE = 0.3285 (log₂ fold change = -1.6545), Wald BH-adjusted $p < 0.001$, bootstrap $p = 0.0007$, BH-adjusted $p = 0.1079$ in 8 sections / 5 patients. BH significance depends on the test.

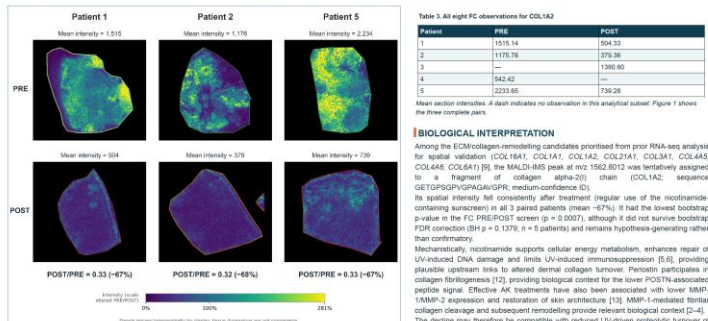


Figure 1. Original ion maps and shared relative display scale. Extractor: m/z 1562.8012 ± 16 ppm; COSY: 369.7194 ± 2.41. Color intensity is a peptide signal relative, not a measurement of total collagen.

CONCLUSIONS

- After 8 weeks of sunscreen use, the peptide signal tentatively assigned to COL1A2 was approximately 0.7% lower in all three complete FC pairs. It showed the lowest bootstrap p-value in the FC session ($p = 0.0007$, although it did not survive bootstrap FDR correction (BH $p = 0.108$), the Wald-based model was significant after BH correction (adjusted $p = 0.001$).
- The signal tentatively assigned to perlecan (POSTN) also decreased, although bootstrap inference was not significant.
- Together, these findings suggest that photoprotection may be associated with reduced dermal collagen I fragmentation, potentially reflecting lower MMP-mediated turnover. This hypothesis requires confirmation through peptide identification and direct assessment of collagen organization and MMP pathways in larger cohorts.

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Ultraviolet photography and image analysis allow subclinical signs of photoaging to be assessed. The visualisation of this photodamage has an impact on the young population in terms of improvement in sun exposure habits and photoprotection measures. The impact of the intervention can be measured through validated questionnaires. At the clinical level, it translates into the possibility of acting with primary or secondary prevention in the young population with adapted photoprotection measures.

CONCLUSIONES

1. La fototerapia continua siendo una herramienta dermatológica transversal y sigue siendo una alternativa asequible, eficaz y con excelente perfil de seguridad.
2. La fotobiología también tiene su papel en temas emergentes como el microbioma, existiendo una relación bidireccional entre radiación UV y microbiota cutánea.
3. La terapia fotodinámica sigue jugando un papel importante en el tratamiento del CCNM y sus protocolos se van adaptando a las nuevas necesidades y preferencias de los pacientes.

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