

AAD **ANNUAL MEETING 2025**

**AEDV** 7 - 11  
MARZO  
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highlights



# DERMATOPATOLOGÍA

Sonsoles Berenguer Ruiz

Una iniciativa de:



ACADEMIA ESPAÑOLA  
DE DERMATOLOGÍA  
Y VENEREOLÓGIA



FUNDACIÓN  
ACADEMIA ESPAÑOLA  
DE DERMATOLOGÍA  
Y VENEREOLÓGIA

Con el patrocinio de:



AAD **ANNUAL MEETING 2025**

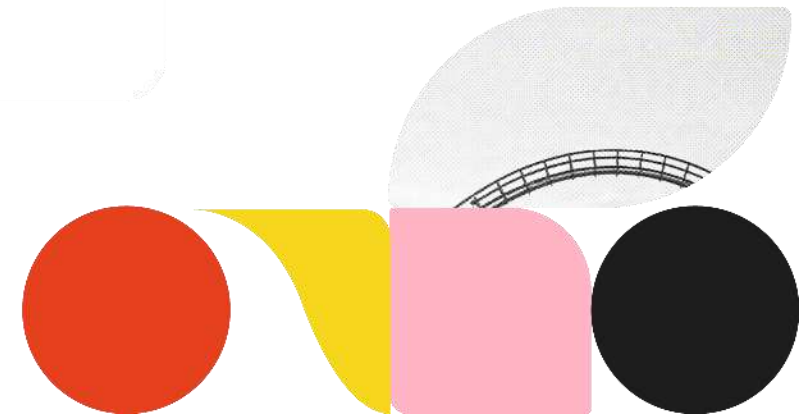
**AEDV** 7 - 11  
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*highlights*



**NO TENGO CONFLICTOS  
DE INTERÉS**

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# TRBC1

**TRBC1:** anticuerpo monoclonal (mAb) contra la región constante C1 de la cadena TCR

Las poblaciones de células T neoplásicas expresan exclusivamente TRBC1 o TRBC2.

La expresión restringida de TRBC1 puede, por lo tanto, servir como un marcador de clonalidad.

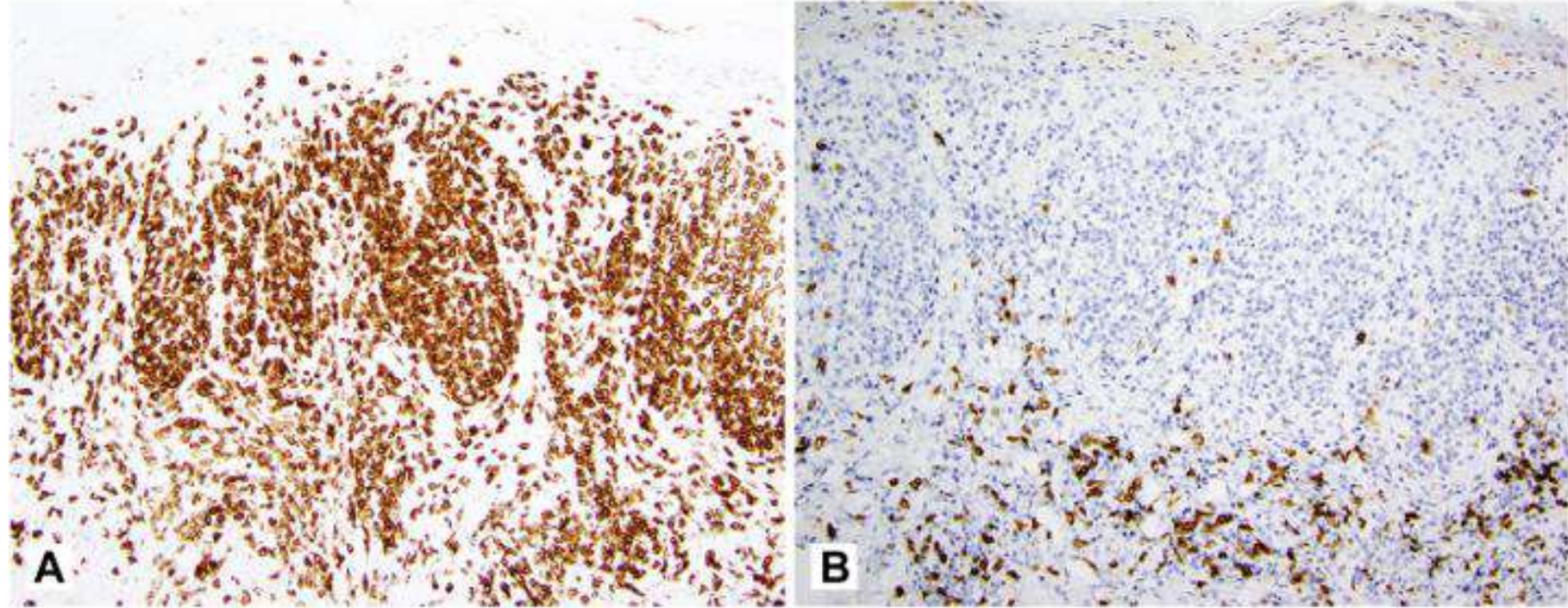
## TRBC1 immunohistochemistry distinguishes cutaneous T-cell lymphoma from inflammatory dermatitis: A retrospective analysis of 39 cases

Sarah E. Nocco, MD<sup>a</sup> · Mark D. Ewalt, MD<sup>b</sup> · Andrea P. Moy, MD<sup>b</sup> · ... · Cecilia Lezcano, MD<sup>b</sup> · Klaus Busam, MD<sup>b</sup> · Melissa Pulitzer, MD<sup>b</sup> [Show more](#)

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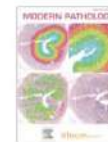
**Fig 1.** Skin biopsy specimen from a patient with mycosis fungoides showing an atypical lymphocytic infiltrate predominantly located in the epidermis. Atypical lymphocytes are diffusely positive for CD3 (**A**, original magnification:  $\times 400$ ) and negative for TRBC1 (**B**, original magnification:  $\times 400$ ), consistent with a monotypic-negative TRBC1 expression pattern. The underlying dermal reactive immune infiltrate shows a TRBC1 polytypic expression pattern.

# Carcinoma Merkel: POU4F3

RESEARCH ARTICLE · Volume 38, Issue 1, 100627, January 2025 [Download Full Issue](#)

## POU4F3 Is a Sensitive and Specific Marker of Merkel Cell Carcinoma

Paweł Karpinski<sup>a, b</sup> · Javier E. Mendez-Pena<sup>b</sup> · Cheng-Lin Wu<sup>c, ...</sup> · Kristine M. Cornejo<sup>b</sup> · Yin P. Hung<sup>b</sup> · Mai P. Hoang<sup>a, b</sup> · [Show more](#)

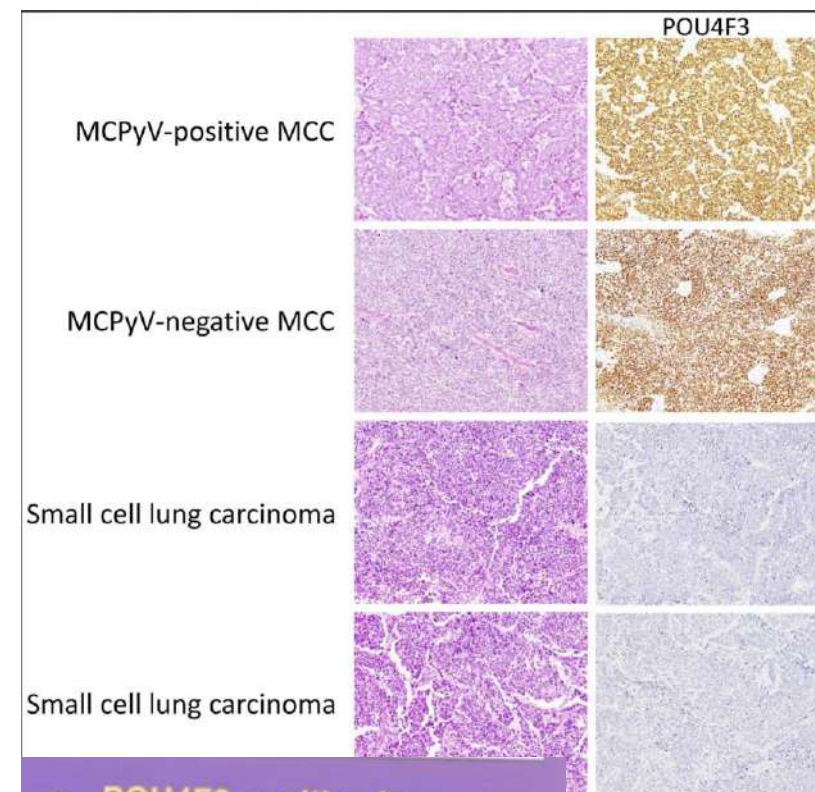


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**Table 1**  
Summary of POU4F3 expression in Merkel cell carcinomas and histologic mimics

Tumor type	N	POU4F3			
		Positive	3+	2+	Negative
Merkel cell carcinoma	153	151/153 (98.7%)	149	2	2
MCPyV-positive	82	82/82	81	1	0
MCPyV-negative	71	69/71	68	1	2
Keratin 20-negative	10	9/10	9	0	1
Keratin 20 focally positive	12	12/12	12	0	0
TTF1-positive	8	8/8	8	0	0
Non-Merkel cell carcinoma cases	180	3/180 (1.7%)			
Small cell carcinoma, total	95	3/95 (3.2%)	0	2	92
Small cell carcinoma of lung	55	2/55	0	2	53
Small cell carcinoma of cervix	12	0/12	0	0	12
Small cell carcinoma of vagina	3	1/3	1	0	2
Small cell carcinoma of endometrium	3	0/3	0	0	3
Small cell carcinoma of salivary gland/head and neck	6	0/6	0	0	6
Small cell carcinoma of bladder	11	0/5	0	0	11
Small cell carcinoma of prostate	3	0/1	0	0	3
Small cell carcinoma of pancreas	1	0/1	0	0	1
Small cell carcinoma of gallbladder	1	0/1	0	0	1
Ewing sarcoma	3	0/3	0	0	3
Rhabdomyosarcoma, alveolar	1	0/1	0	0	1
Synovial sarcoma, poorly differentiated	4	0/4	0	0	4
Lymphoblastic lymphoma	2	0/2	0	0	2
NUT carcinoma	3	0/3	0	0	3
Trichoblastoma	3	0/3	0 <sup>a</sup>	0	3
Basal cell carcinoma	36	0/36	0	0	36
Metastatic melanoma	22	0/22	0	0	22
Malignant peripheral nerve sheath tumor	11	0/11	0	0	11



**POU4F3 positive in**

- MCC cases, 151/153 (98.7%)
  - MCPyV-positive, 82/82
  - MCPyV-negative, 69/71
- SCLC cases, 2/51 (3.9%)

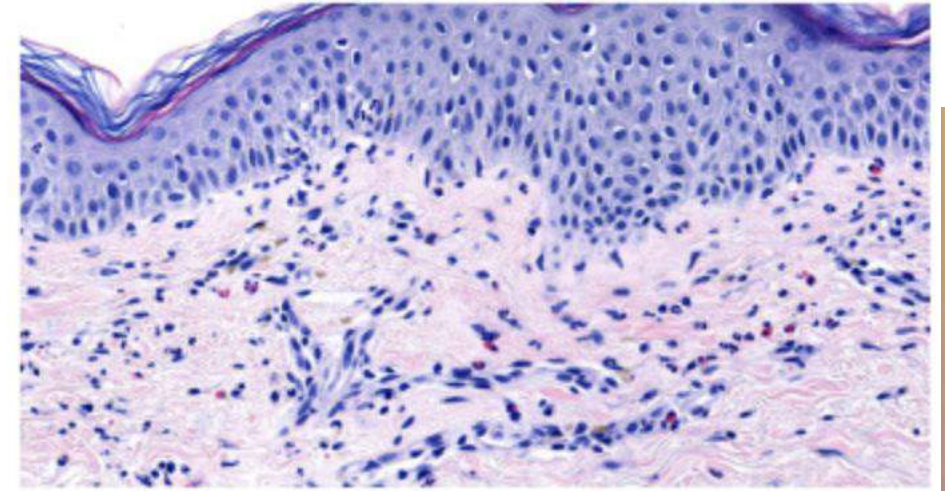
MCPyV, Merkel cell polyomavirus.  
<sup>a</sup> Positive intratumoral Merkel cells in all 3 cases.

# Tebentafusp

## Clinical and pathological characterization of tebentafusp-associated skin toxicity: A cohort study with 33 patients



Dirk Tomsitz, MD,<sup>a</sup> Katrin Kerl, MD,<sup>a,b</sup> Lars Einar French, MD,<sup>a,c</sup> and Lucie Heinzerling, MD, MPH<sup>a,d</sup>

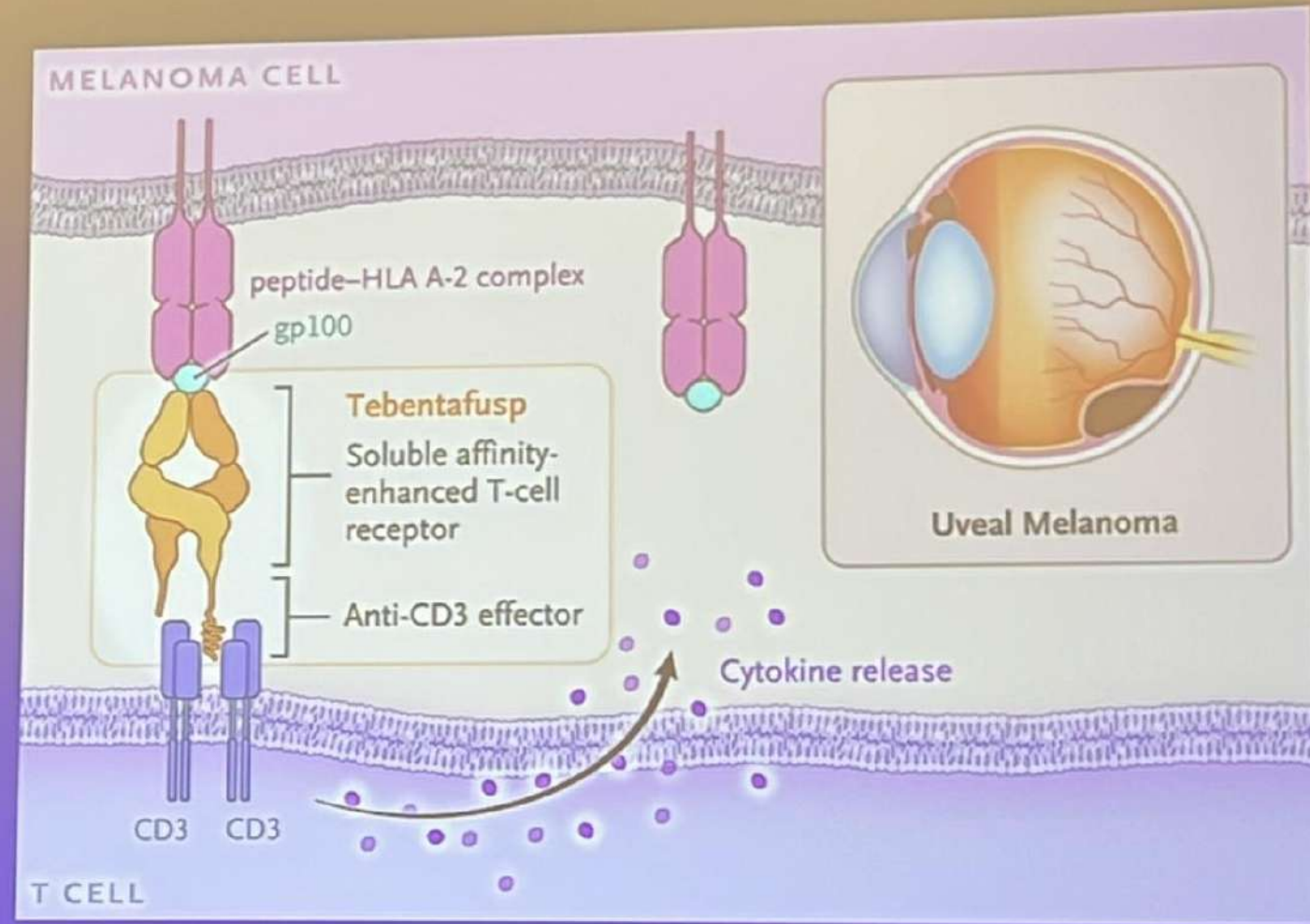


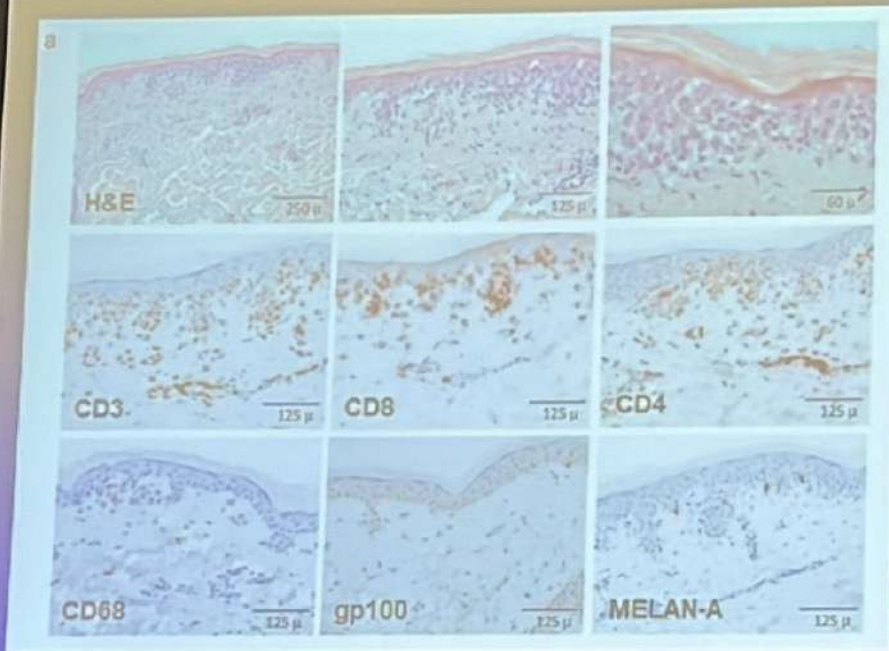
**Fig 4.** The main histologic reaction pattern showed perivascular lymphocytic infiltration and focal interface dermatitis (hematoxylin-eosin).

- 26/33 patients studied developed a skin reaction (patients hospitalized for first 3 doses)
- 5 clinical patterns of skin toxicity noted
  - symmetrical erythematous patches (83.8%)
  - hemorrhagic macules (11.8%)
  - urticarial lesions (7.4%)
  - bullous lesions (1.5%)
  - skin (8.5%) and hair depigmentation (11.4%)
- 14 biopsies (11 from erythematous patches)
  - Focal interface changes, perivascular lymphocytic inflammation
  - CD8(+) epidermal lymphocytes

## Tebentafusp for uveal melanoma

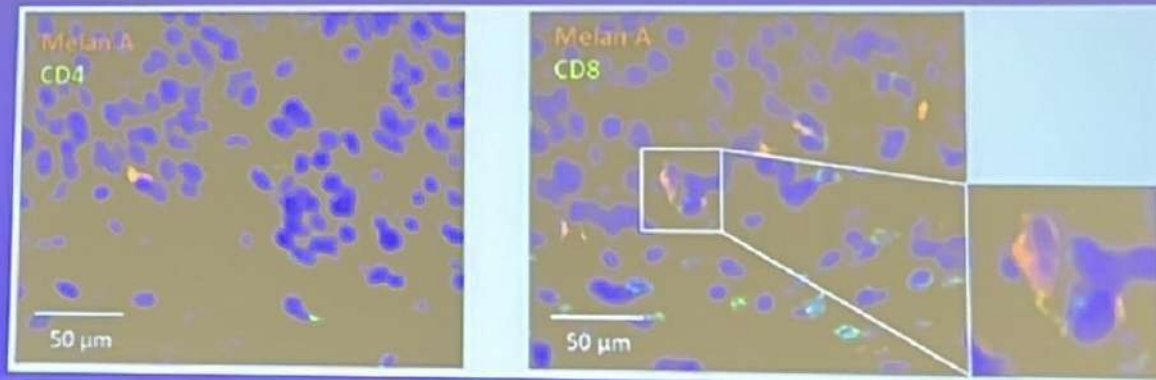
- Bispecific gp100 peptide-HLA-directed CD3(+) T cell engager
  - Binds to both CD3 on activated T cells, gp100 on melanoma cells
- First in class immune-mobilizing monoclonal T-cell receptors against cancer (ImmTACs)
- FDA approved in 2022 in for **HLA-A\*02:01-positive** adult patients with unresectable or metastatic uveal melanoma





## CD8+ T-cells in tebentafusp-associated eruption

- Predominance of CD8(+) T cells in at the dermal-epidermal junction, compared to predominance of CD4(+) cells in a perivascular distribution
- Immunofluorescence staining shows CD8(+) cells in close proximity to melanocytes



# Cutaneous reactions as on-target effects of tebentafusp?

## Tebentafusp Induces a T-Cell–Driven Rash in *JID* Open Melanocyte-Bearing Skin as an Adverse Event Consistent with the Mechanism of Action

Jessica C. Hassel<sup>1</sup>, Sarah Stanhope<sup>2</sup>, Alexander Greenshields-Watson<sup>2</sup>, Devayani Machiraju<sup>1</sup>, Alexander Enk<sup>1</sup>, Christopher Holland<sup>2</sup>, Shaad E. Abdullah<sup>2</sup>, Adel Benlahrech<sup>2</sup>, Marlana Orloff<sup>3</sup>, Paul Nathan<sup>4</sup>, Sophie Piperno-Neumann<sup>5</sup>, Ramon Staeger<sup>6,7</sup>, Reinhard Dummer<sup>6,7</sup> and Barbara Meier-Schiesser<sup>6,7</sup>

Tebentafusp is a gp100xCD3-bispecific ImmTAC designed to redirect polyclonal T cells against cells presenting the melanocyte lineage–specific antigen gp100 on HLA-A\*02:01. Skin-related adverse events, predominantly rash, are frequent and occur within a few hours after initial infusions; yet, the mechanisms are unknown. In this study, we analyzed clinical data from the randomized phase 3 trial (NCT03070392) of tebentafusp (n = 252) versus investigator's choice (n = 126). Translational analyses were performed on paired on-treatment skin samples from 19 patients collected in the phase 1 trial (NCT01211262). Our analyses showed that rash is a clinical manifestation of tebentafusp-induced recruitment of T cells to cutaneous melanocytes. Development of rash depended on baseline expression levels of gp100 and other melanin pathway genes in the skin. On treatment, melanocyte number was reduced, and expression of melanocytic genes decreased, whereas gene expression related to immunity and cytokine signaling increased. When adjusted for baseline prognostic features, patients with rash within the first week of tebentafusp treatment had the same overall survival as patients without a rash in the phase 3 randomized trial IMCgp100-202 (hazard ratio = 0.84, 95% confidence interval = 0.53–1.32). In summary, skin rash is an off-tumor, on-target effect of tebentafusp against gp100+ melanocytes, in line with the mechanism of action.

**Keywords:** Bispecific T-cell engager, gp100, Rash, Tebentafusp

*Journal of Investigative Dermatology* (2024) ■, ■–■; doi:10.1016/j.jid.2024.03.048

- Hypothesis: rapid onset of skin rash in patients treated with tebentafusp is a direct consequence of tebentafusp redirecting T cells to gp100(+) skin melanocytes

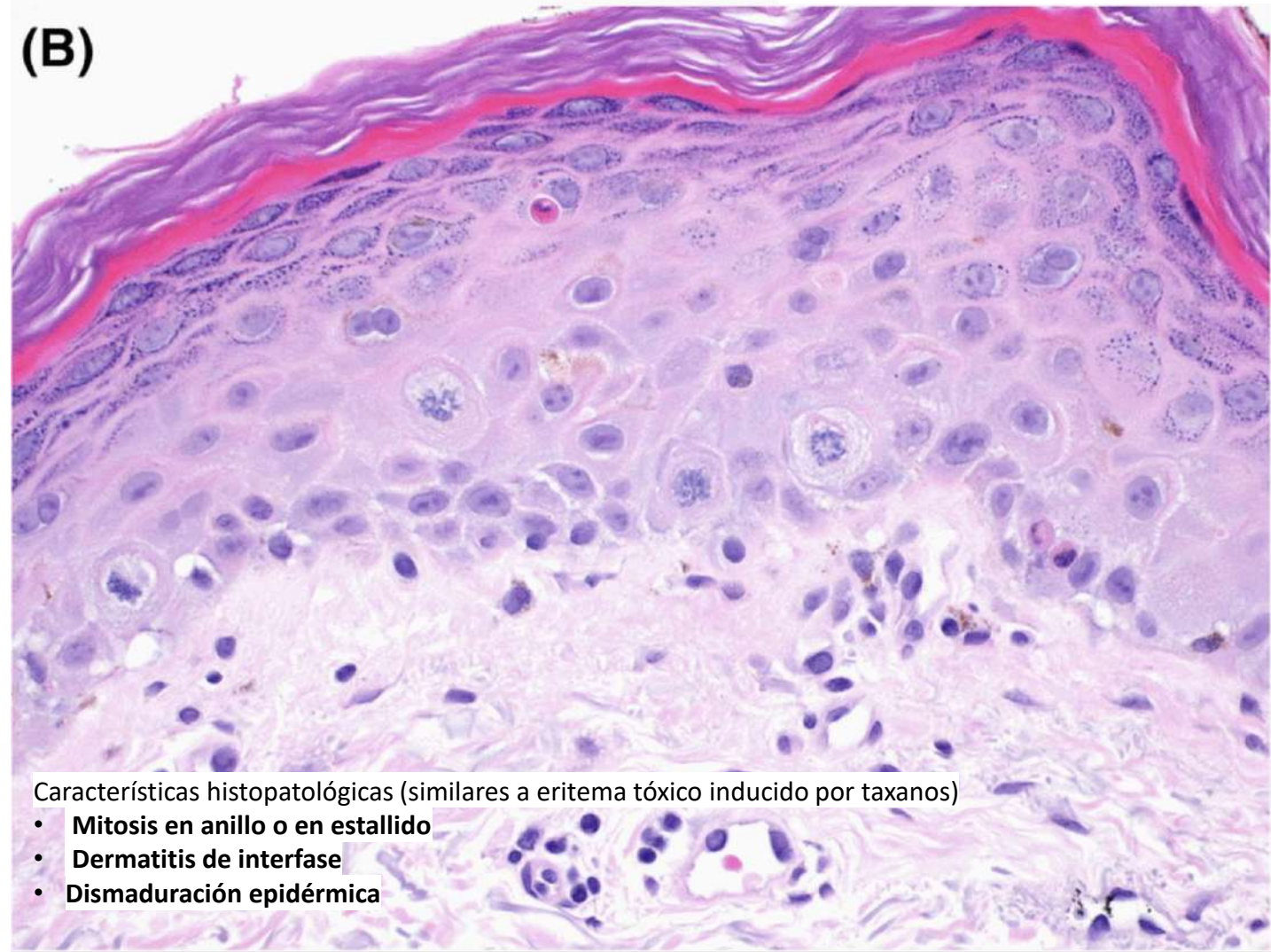


## Enfortumab vedotin-induced cutaneous eruption: Ring mitotic figures as a distinctive histopathologic feature

Catherine Sport, Rebecca C. Clawson, Lauren E. Tisdale, John W. Melson, Mark C. Mochel

First published: 15 July 2024 | <https://doi.org/10.1111/cup.14689> | Citations: 1

# Enfortumab vedotin



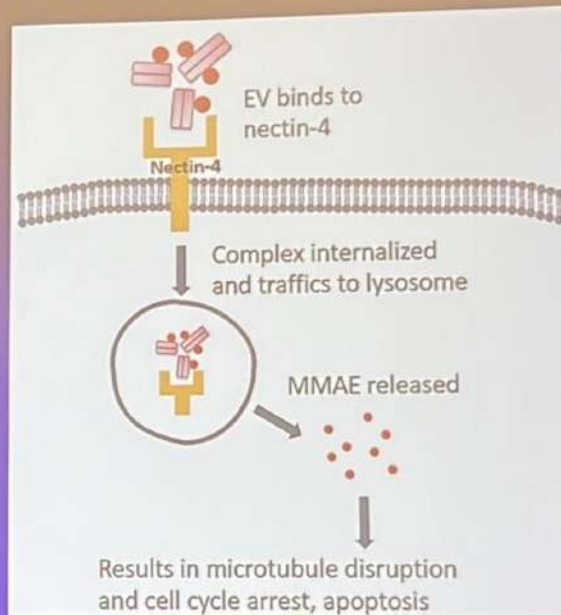
Características histopatológicas (similares a eritema tóxico inducido por taxanos)

- Mitosis en anillo o en estallido
- Dermatitis de interfase
- Dismaduración epidérmica

# Enfortumab vedotin

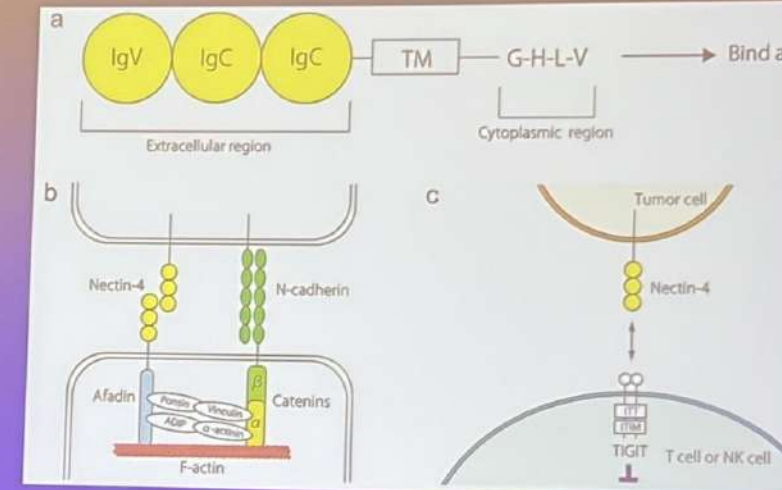
## Enfortumab vedotin

- Anti-Nectin-4 antibody conjugated to monomethyl auristatin E, a microtubule-disrupting agent
- FDA approved for use in treatment of advanced urothelial carcinoma, following progression on platinum-based chemotherapy and PD-1 or PD-L1 inhibitor



## Nectin-4 as a target in cancer

- Tumor-associated antigen, overexpressed in lung, breast, gastric, urothelial cancer cells
- Calcium-dependent transmembrane adhesion molecule, normally expressed in the skin and upper aerodigestive tract



## Histopathologic Comparison Among Drug Eruptions Induced by Enfortumab Vedotin, Brentuximab Vedotin, and Taxanes

Iwawashi, Yoshifumi MD<sup>1,†</sup>; Goto, Keisuke MD<sup>2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100</sup>; Ohe, Shuichi MD, PhD<sup>55</sup>; Bun, Shota MD<sup>55</sup>; Kido, Kansuke MD, PhD<sup>11</sup>; Matsui, Takahiro MD, PhD<sup>11</sup>; Morii, Eiichi MD, PhD<sup>11</sup>; Honma, Keiichiro MD, PhD<sup>\*</sup>

Author Information 

atopathology 47(3):p 191-196, March 2025. | DOI: 10.1097/DAD.0000000000002911

# Enfortumab vedotin vs otros fármacos

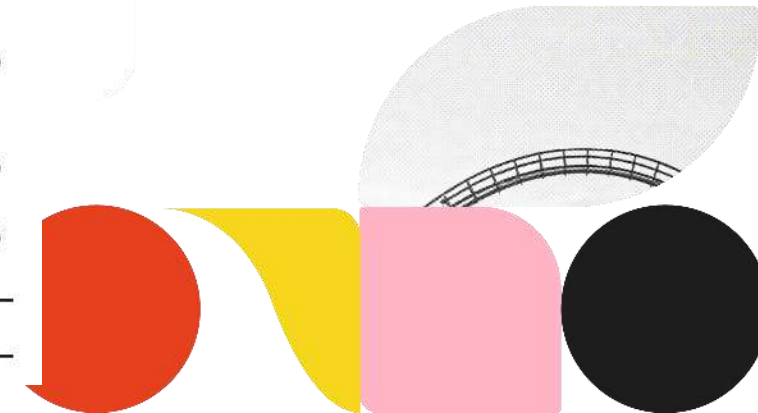
TABLE 2. Histopathologic Summary in all 22 Cases of This Study

Histopathologic Findings	Enfortumab Vedotin-Induced Eruption	Brentuximab Vedotin-Induced Eruption	Docetaxel-Induced Eruption	Paclitaxel-Induced Eruption
Ring mitotic figures in the epidermis ( <i>n</i> )	5/5, 100% (range 1–5.5; median 1.5)	2/5, 40% (range 0–3; median 0)	1/5, 20% (0–1.5; median 0)	0/7, 0% (0–0; median 0)
Mitotic arrest figures, including ring mitosis in the epidermis ( <i>n</i> )	5/5, 100% (range 1.5–55.5; median 16)	2/5, 40% (range 0–22; median 0)	2/5, 40% (0–3.75; median 0)	3/7, 43% (0–22; median 0)
Ring mitotic figures in the sweat ductoglandular unit ( <i>n</i> )	2/5, 40% (range 0–1; median 0)	0/5, 0% (range 0–0; median 0)	0/5, 0% (range 0–0; median 0)	0/7, 0% (range 0–0; median 0)
Mitotic arrest figures, including ring mitosis in the sweat ductoglandular unit ( <i>n</i> )	3/5, 60% (range 0–10.5; median 3)	1/5, 20% (range 0–3; median 0)	0/5, 0% (range 0–0; median 0)	0/7, 0% (range 0–0; median 0)
Ring mitotic figures in the follicular epithelium ( <i>n</i> )	0/5, 0% (range 0–0; median 0)	0/5, 0% (range 0–0; median 0)	0/5, 0% (range 0–0; median 0)	0/7, 0% (range 0–0; median 0)
Mitotic arrest figures, including ring mitosis in the follicular epithelium ( <i>n</i> )	0/5, 0% (range 0–0; median 0)	0/5, 0% (range 0–0; median 0)	0/5, 0% (range 0–0; median 0)	0/7, 0% (range 0–0; median 0)
Multinucleated keratinocytes ( <i>n</i> )	4/5, 80% (range 0–13; median 6)	3/5, 60% (range 0–2; median 0.5)	2/5, 40% (range 0–37.5; median 0)	4/7, 57% (range 0–3; median 0.5)
Apoptotic keratinocytes distributed predominantly in the upper part of the epidermis	4/5, 80%	3/5, 60%	2/5, 40%	0/7, 0%
Parakeratotic cornified layer	3/5, 60%	4/5, 80%	2/5, 40%	1/7, 14%
Spongiotic change	Mild: 2/5, 40% Moderate: 3/5, 60%	No: 1/5, 20% Moderate: 4/5, 80%	No: 1/5, 20% Mild: 3/5, 60% Moderate: 1/5, 20%	No: 2/7, 29% Mild: 1/7, 14% Moderate: 4/7, 57%
Interface vacuolar change	No: 1/5, 20% Mild: 3/5, 60% Severe: 1/5, 20%	No: 1/5, 20% Mild: 4/5, 80%	No: 2/5, 40% Mild: 3/5, 60%	No: 3/7, 43% Mild: 3/7, 43% Moderate: 1/7, 14%
Dermal eosinophilic infiltrate	No: 3/5, 60% Mild: 1/5, 20% Moderate: 1/5, 20%	No: 4/5, 80% Moderate: 1/5, 20%	No: 5/5, 100%	No: 5/7, 71% Moderate: 2/7, 29%

n: number observed in 1 skin tissue section of 3 mm-sized punch biopsy.

### Ring mitosis:

+ frecuentes en enfortumab-vedotina > brentuximab-vedotina > docetaxel/paclitaxel



# Enfortumab vedotin

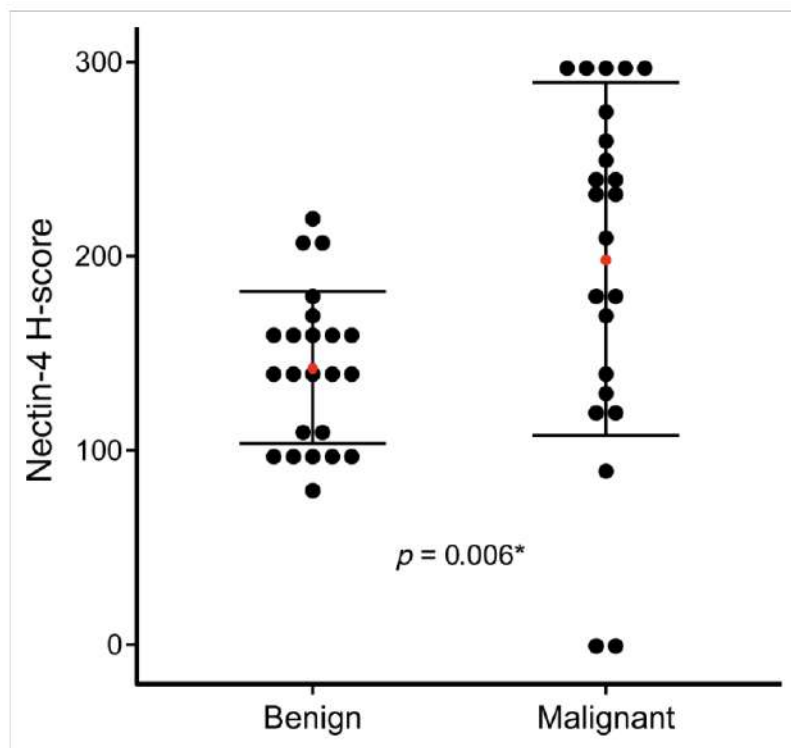
## Prior immune checkpoint inhibitor exposure associated with more severe skin reactions

Table 2. Impact of pre-EV ICI exposure on EVST grade

Characteristic	No Pre-EV ICI <sup>a</sup> (n=7)	Pre-EV ICI <sup>a</sup> (n=18)	OR (95% CI) <sup>b</sup>	p value
EVST CTCAE grade			17.8 (0.03–238.6)	0.029
1	5 (71)	4 (22)		
2	1 (14)	6 (33)		
3	1 (14)	6 (33)		
4	0	2 (11)		

CI=confidence interval; CTCAE=Common Terminology Criteria for Adverse Events; EV=enfortumab vedotin; EVST=enfortumab vedotin-related skin toxicity; ICI=immune checkpoint inhibitor; OR=odds ratio.

# NECTIN-4 y otros tumores



**FIGURE 2**

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Nectin-4 H-score distribution and mean (±SD) H-scores (red dots) for the 23 benign (7 sebaceous adenomas, 8 poromas, and 8 trichilemmomas) and 23 malignant (8 digital papillary adenocarcinoma, 7 squamoid eccrine ductal carcinomas, and 8 sebaceous carcinomas) adnexal neoplasms. The adnexal carcinomas had a significantly higher mean H-score than did the benign adnexal neoplasms (\* $p = 0.006$ ).

ORIGINAL ARTICLE | [Full Access](#)

## Nectin-4 expression in a subset of cutaneous adnexal carcinomas: A potential target for therapy with enfortumab vedotin

Woo Cheal Cho MD, Rayan Saade MD, Priyadharsini Nagarajan MD, PhD, Phyu P. Aung MD, PhD, Denái R. Milton MS, Mario L. Marques-Piubelli MD, Courtney Hudgens MS ... [See all authors](#) ▾

First published: 10 January 2024 | <https://doi.org/10.1111/cup.14579>

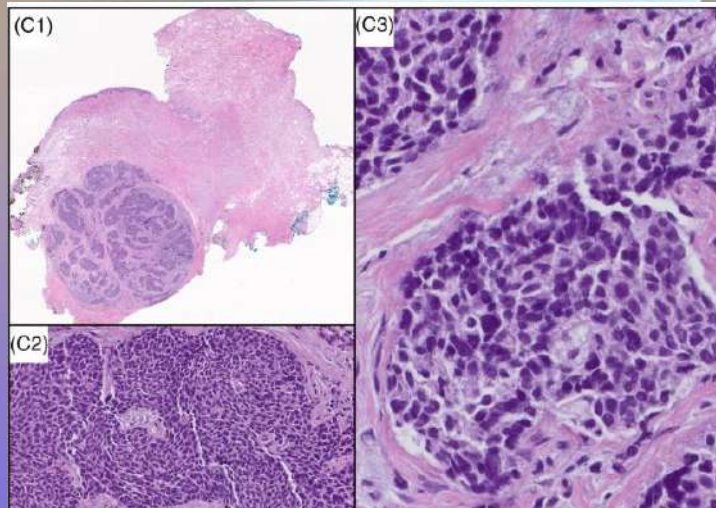
**TABLE 1** Summary of demographic and clinical data with respective Nectin-4 H-score distribution and mean (±SD) in each adnexal tumor group.

Type of adnexal neoplasms	Cases, n	Age in years (range)	M:F	Site, n (%)	Nectin-4 expression, n (%)				Mean H-score ± SD
					Negative	Low	Medium	High	
Poroma	8	53 (36–87)	1:1	LE, 3 (38) UE, 2 (25) Flank, 2 (25) Back, 1 (12)	2 (25)	6 (75)			123.1 ± 30.8
Sebaceous adenoma	7	65 (63–76)	5:2	H&N, 5 (72) Shoulder, 1 (14) Back, 1 (14)		4 (57)	3 (43)		186.4 ± 25.0
Trichilemmoma	8	83 (38–86)	8:0	H&N, 7 (88) Chest, 1 (12)	8 (100)				123.8 ± 23.9
Digital papillary adenocarcinoma	8	49 (32–71)	1:3	Foot, 4 (50) Hand, 3 (38) LN, 1 (12)		4 (50)	4 (50)		197.5 ± 52.5
Squamoid eccrine ductal carcinoma	7	69 (53–79)	6:1	H&N, 4 (57) UE, 1 (14) LE, 1 (14) Back, 1 (14)	2 (29)	1 (14)	2 (29)	2 (29)	131.4 ± 114.1
Sebaceous carcinoma	8	73 (57–88)	1:1*	Eyelid, 4 (50) Orbit, 3 (38) LN, 1 (12)		1 (12)	7 (88)		258.1 ± 58.4

Abbreviations: F, female; H&N, head and neck; LE, lower extremity; LN, lymph node; M, male; n, number; SD, standard deviation; UE, upper extremity.  
\*Includes a lesion of lymph node metastasis for one patient.

# NECTIN-4

## Nectin-4 to differentiate between sebaceous adenoma and sebaceous carcinoma?



Sebaceous carcinoma with diffuse staining intensity of 3+ with Nectin-4

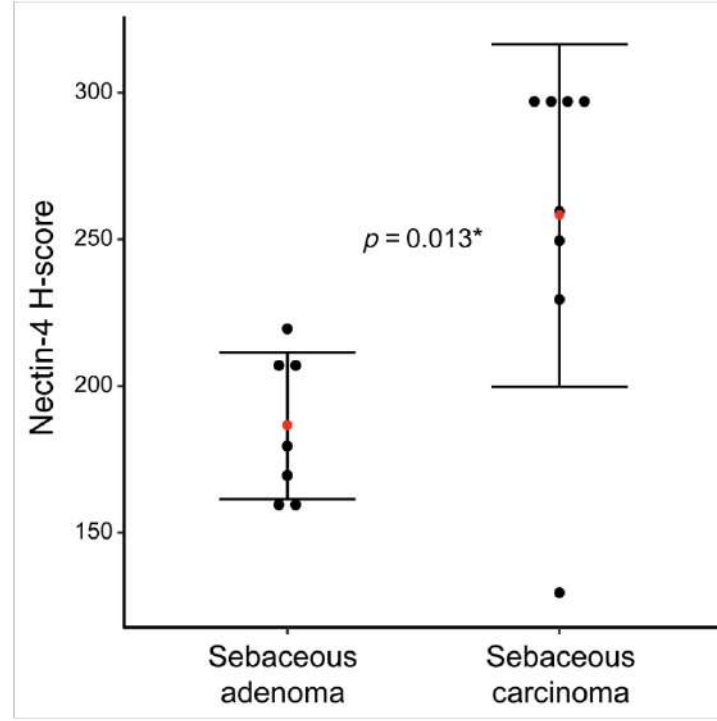
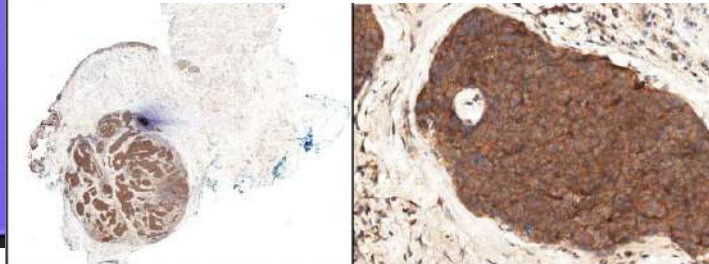


FIGURE 5 [Open in figure viewer](#) [Download PowerPoint](#)

Nectin-4 H-score distribution and mean ( $\pm$ SD) H-scores (red dots) for the sebaceous neoplasms (seven sebaceous adenomas and eight sebaceous carcinomas), which sebaceous carcinomas exhibited a significantly higher mean H-score than did the sebaceous adenomas ( $n = 7$ ) ( $*p = 0.013$ ).

# NECTIN-4 y otros tumores

Potential gap: Identification of potentially actionable biomarkers (for diagnosis and treatment) in cutaneous tumors

Received: 4 January 2024 | Revised: 15 February 2024 | Accepted: 24 February 2024  
DOI: 10.1111/exd.15049

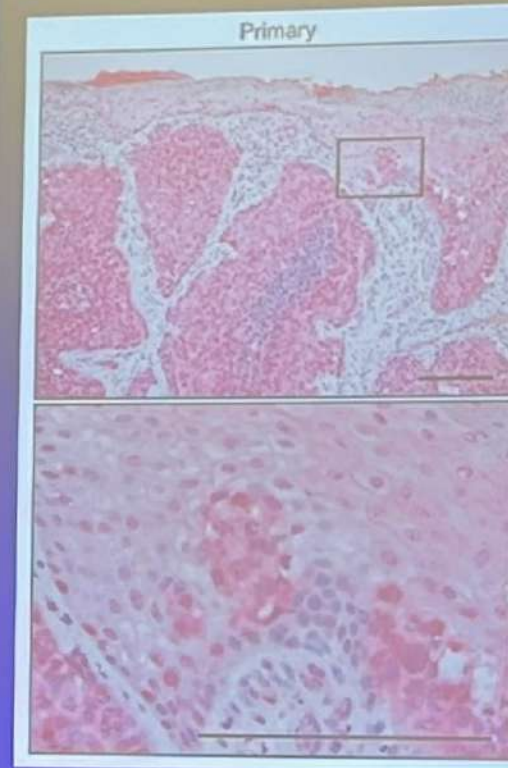
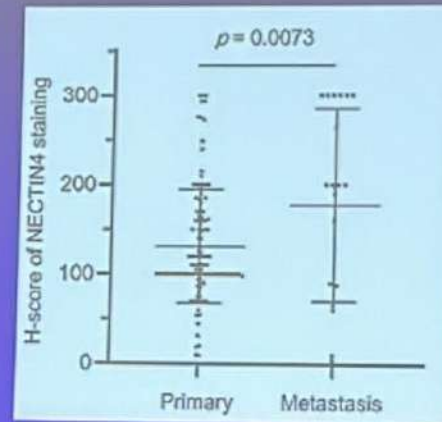
RESEARCH ARTICLE

Experimental Dermatology WILEY

## NECTIN4-targeted antibody-drug conjugate is a potential therapeutic option for extramammary Paget disease

Yuka Tanaka | Takamichi Ito | Maho Murata | Keiko Tanegashima | Yumiko Kaku-Ito | Takeshi Nakahara

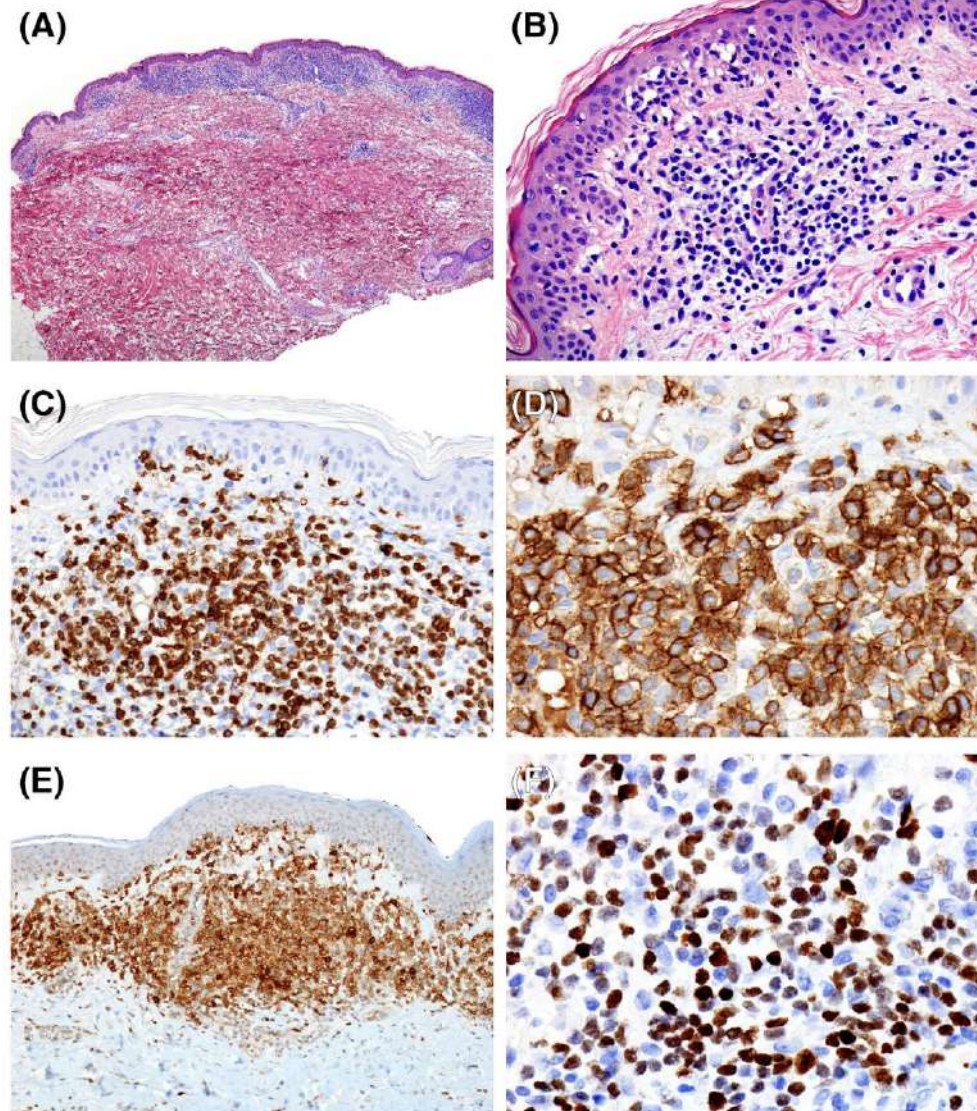
- Diffuse positivity of Nectin-4 expression in primary and metastatic EMPD in a cohort of 118 patients



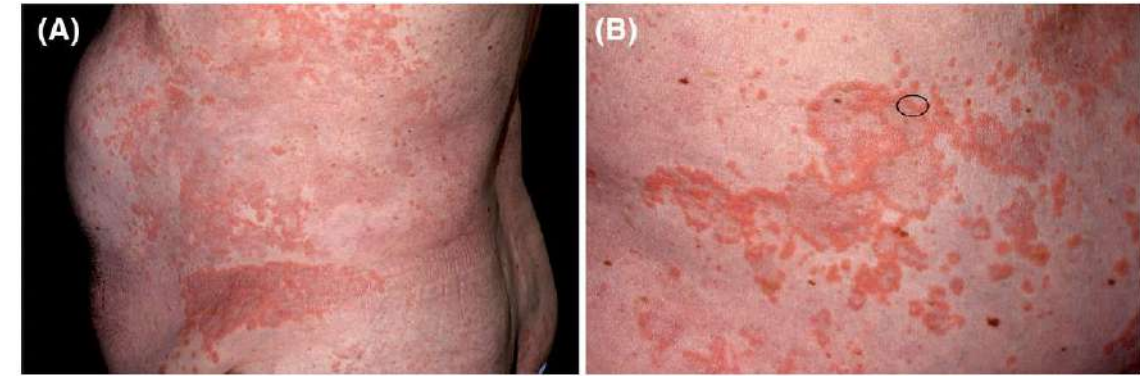
# Variantes infrecuentes de micosis fungoide

## Urticarial mycosis fungoides: A distinctive presentation with blood involvement and a peculiar immunophenotype

Juan Torre-Castro<sup>1</sup> | Concepción Postigo<sup>2</sup> | Salma Machan<sup>1</sup> |  
Margarita Estela Jo-Velasco<sup>3</sup> | Javier Díaz de la Pinta<sup>3</sup> |  
Jose Luis Rodríguez-Peralto<sup>4</sup> | Raúl Córdoba<sup>5</sup> | Luis Requena<sup>1</sup> |  
Socorro María Rodríguez-Pinilla<sup>3</sup>



**FIGURE 2** Histopathological appearance of the skin lesions. (A) Dense lymphocytic infiltrate in the papillary dermis. Hematoxylin-eosin (H-E),  $\times 20$ . (B) Detail of the atypical lymphocytes. Note the epidermotropism and the lining up at the dermal-epidermal junction. H-E,  $\times 100$ . (C) Immunohistochemical positivity with CD3,  $\times 100$ . (D) Immunohistochemical positivity with PD1,  $\times 200$ . (E) Immunohistochemical positivity with CD25,  $\times 100$ . (F) Immunohistochemical positivity with FOXP3,  $\times 200$ .

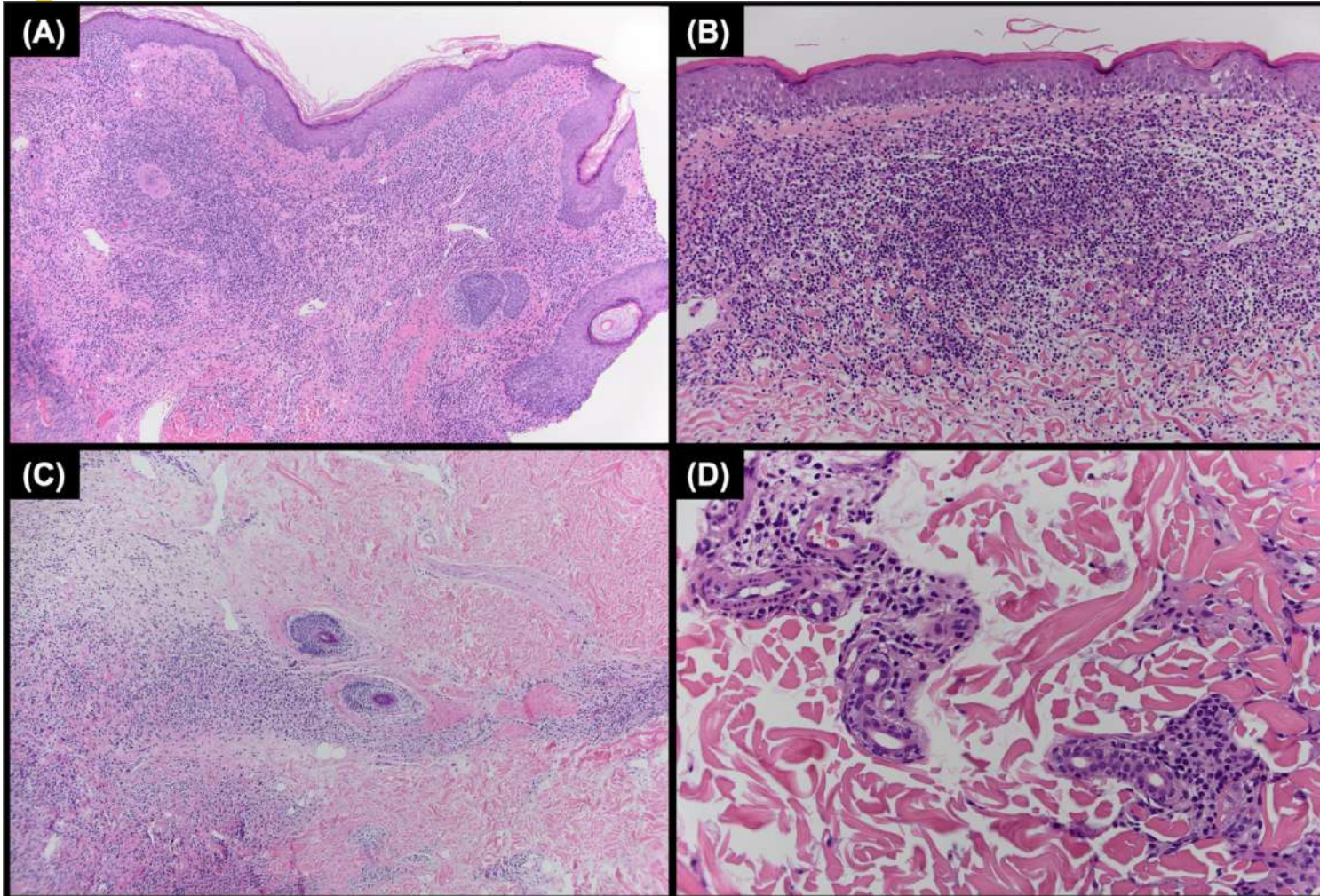


2 pts with urticarial non-scaly lesions and peripheral blood involvement  
(+)CD3, CD4, CD7, PD1, FOXP3 (ddx Sezary syn, HTLV1, T-cell prolymphocytic leukemia (T-PLL))

**Ambos casos tenían características histológicas clásicas de MF y compartían un inmunofenotipo peculiar con positividad para CD25 y FOXP3.**



# Variantes infrecuentes de micosis fungoide



ORIGINAL ARTICLE | [Full Access](#)

## Interstitial mycosis fungoides: A rare presentation of mycosis fungoides with overlapping granulomatous and folliculotropic features

Christopher Chung MD, Bicong Wu MD, Tessa LeWitt MD, Teresa Griffin BS, Madeline Hooper BA, Xiaolong (Alan) Zhou MD, Jaehyuk Choi MD, PhD, Joan Guitart MD ✉

First published: 05 March 2024 | <https://doi.org/10.1111/cup.14599>

- IMF: Overlap with classic MF
- 5 with GSS-like presentation
- Suggested IMF is early phase of GSS
- Elastophagia and xanthomatous features
- Overlap with morphea and GA

(A) (B)



Interstitial mycosis fungoides is characterized by atypical small-medium lymphocytes typically involving the upper and mid-dermis with limited but sometimes moderate epidermotropism as demonstrated. The atypical lymphocytic infiltrate can sometimes be neurotropic, adnexotropic or syringotropic.

# Variantes infrecuentes de micosis fungoide

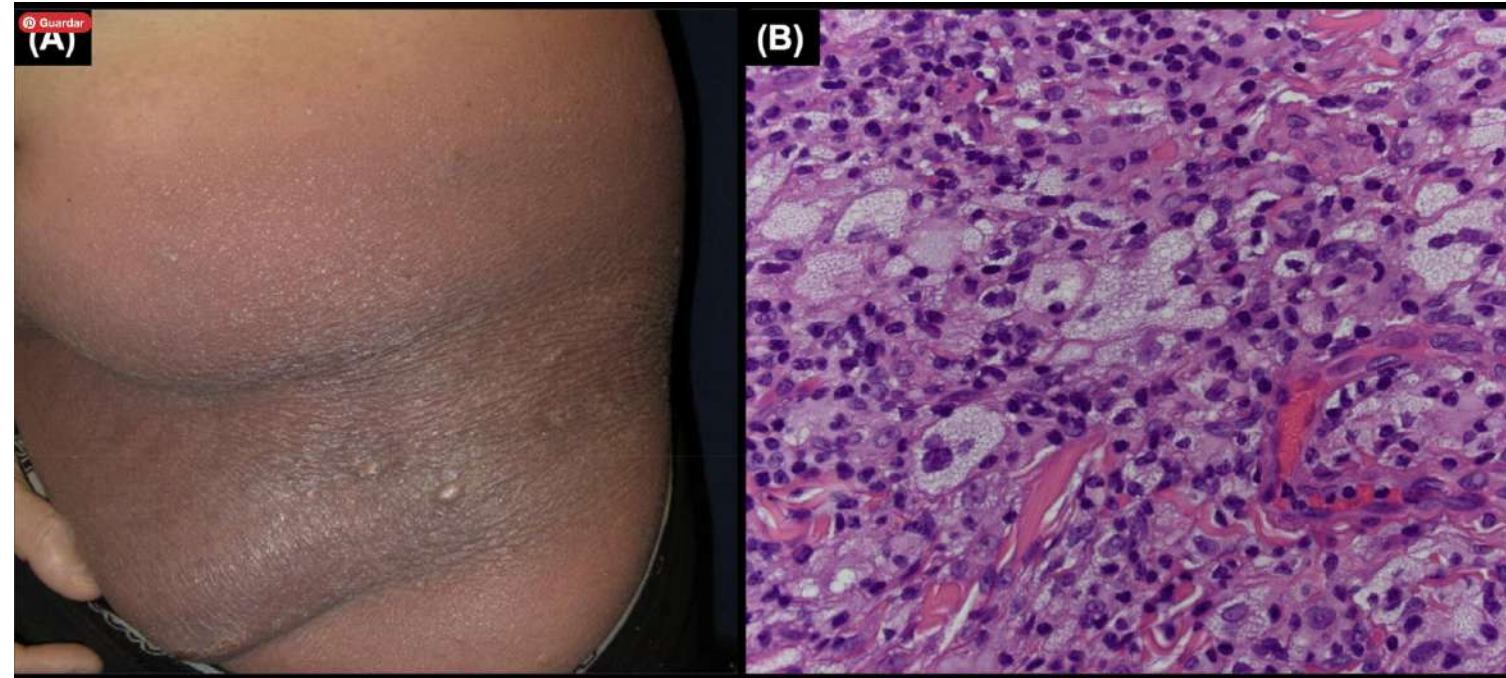


ORIGINAL ARTICLE | [Full Access](#)

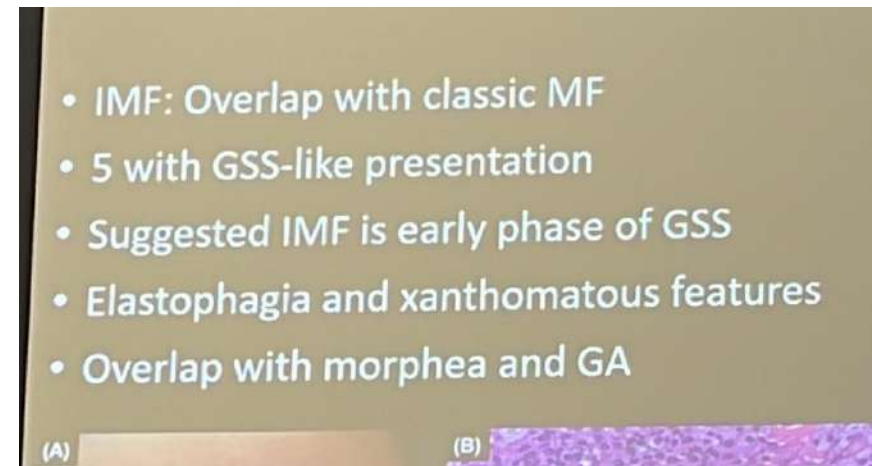
## Interstitial mycosis fungoides: A rare presentation of mycosis fungoides with overlapping granulomatous and folliculotropic features

Christopher Chung MD, Bicorn Wu MD, Tessa LeWitt MD, Teresa Griffin BS, Madeline Hooper BA, Xiaolong (Alan) Zhou MD, Jaehyuk Choi MD, PhD, Joan Guitart MD ✉

First published: 05 March 2024 | <https://doi.org/10.1111/cup.14599>



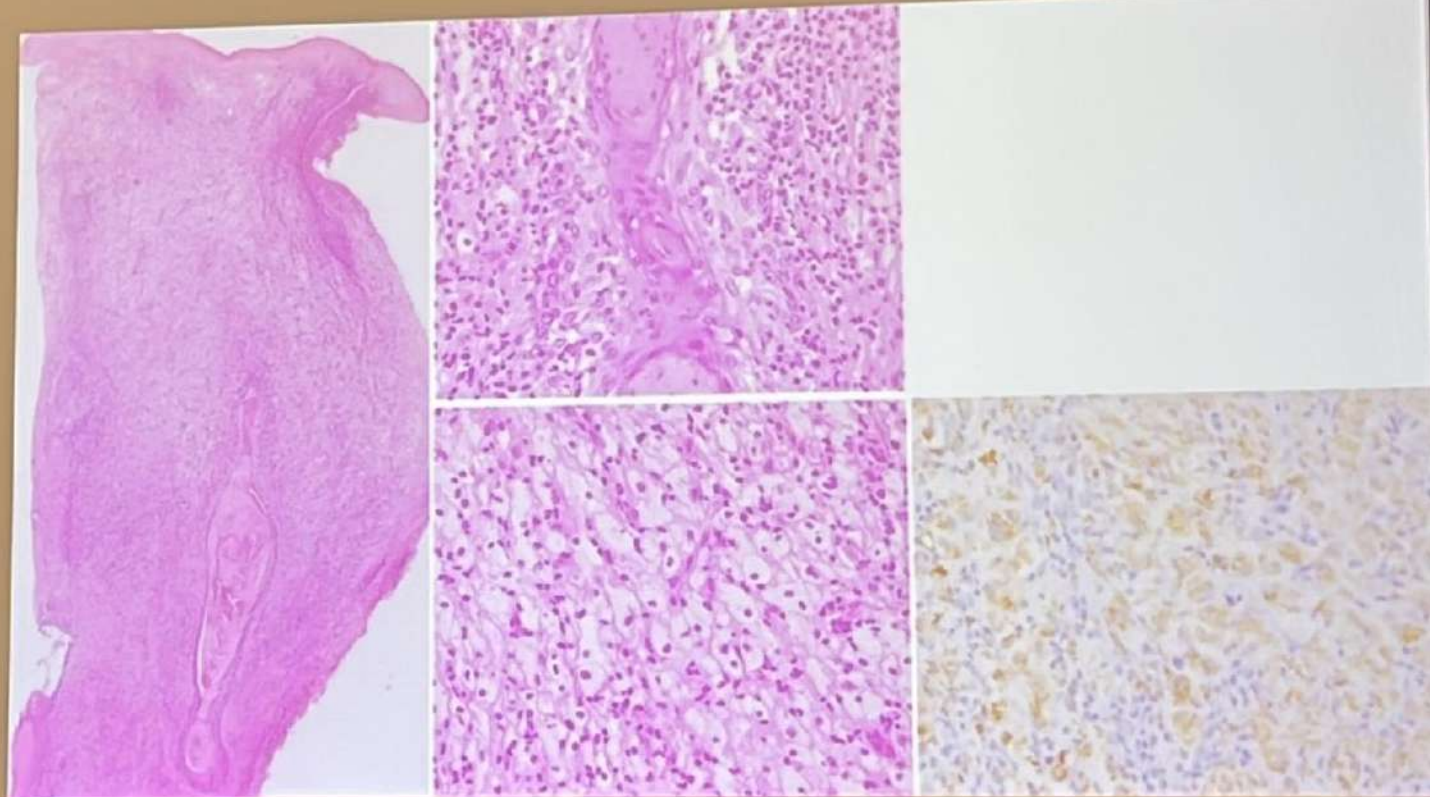
Interstitial mycosis fungoides with clinical features of granulomatous slack skin syndrome involving the lower abdomen and flank with large, indurated, pedunculated peu d'orange appearing erythematous plaque and in rare cases with associated yellow papules (A). Such yellow papules correlate with xanthogranulomatous changes seen on histopathology (B; 600×, H&E).



# Variantes infrecuentes de micosis fungoide

Normolipemic xanthoma associated with folliculotropic  
mycosis fungoides *Australas J Dermatol.* 2024;65:484–487.

Shunsuke Takahagi MD, PhD<sup>1,2</sup> | Toshihisa Hamada MD, PhD<sup>3</sup> |  
Daiki Matsubara MD, PhD<sup>1</sup>



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# What's new in dermatopatology?

Sábado 8 Marzo

Una iniciativa de:



ACADÉMIA ESPAÑOLA  
DE DERMATOLOGÍA  
Y VENEREOLÓGIA



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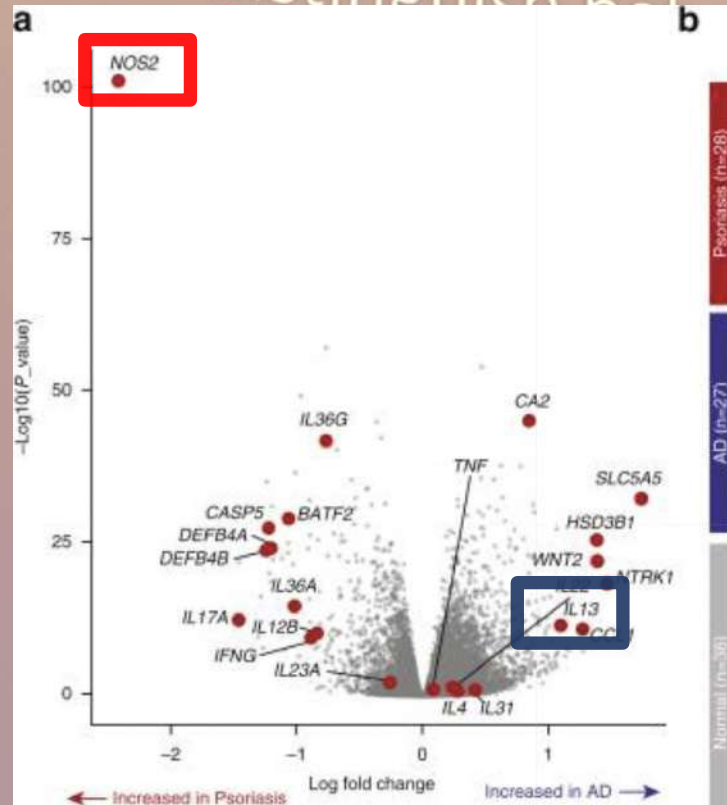
Con el patrocinio de:



# Psoriasis vs eczema

Goal #1: Distinguish between psoriasis and eczema

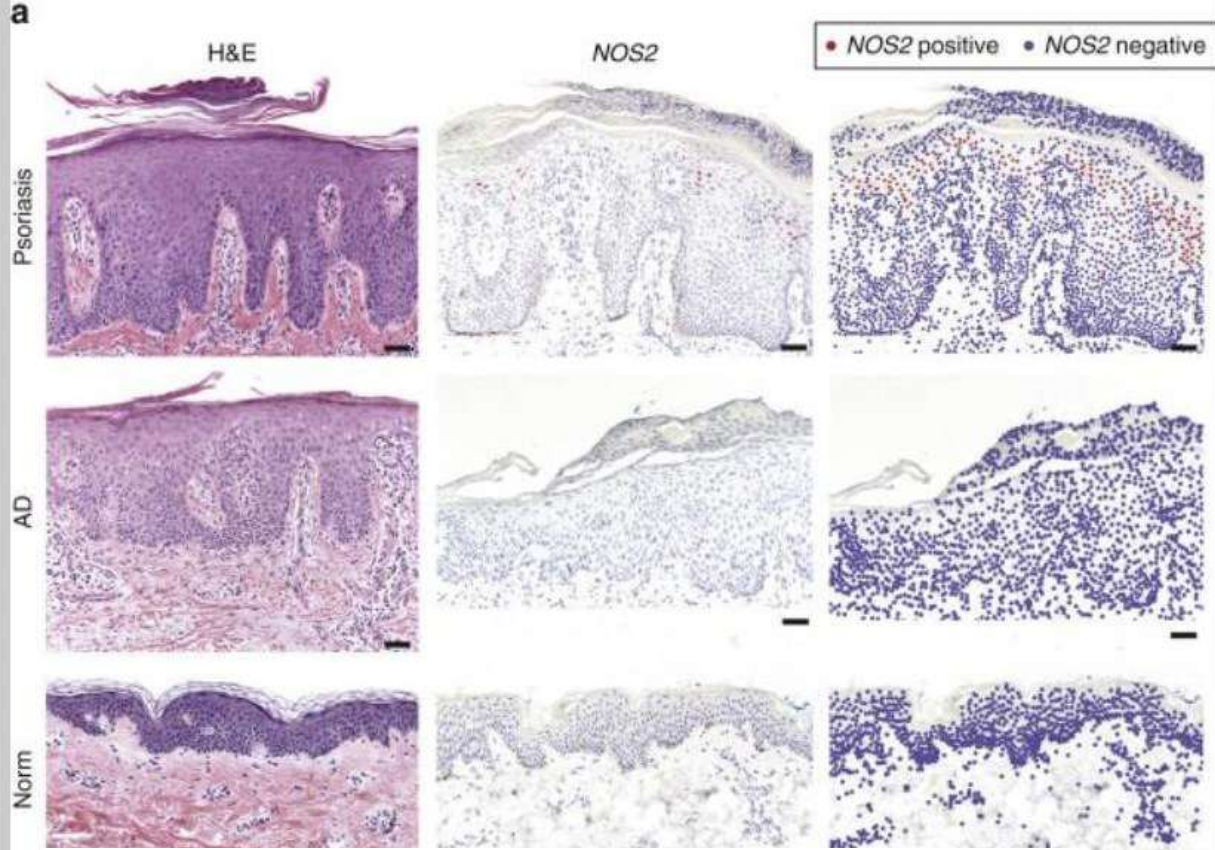
Can disease biomarkers detected with RNA-ISH distinguish between psoriasis and eczema?



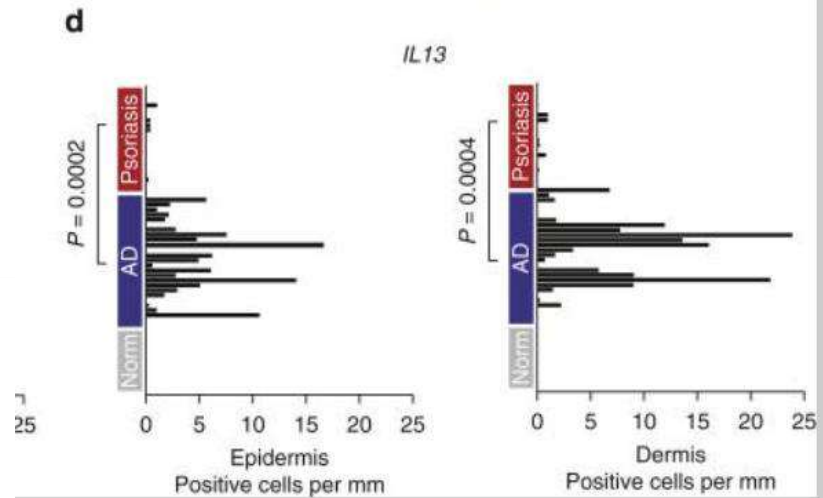
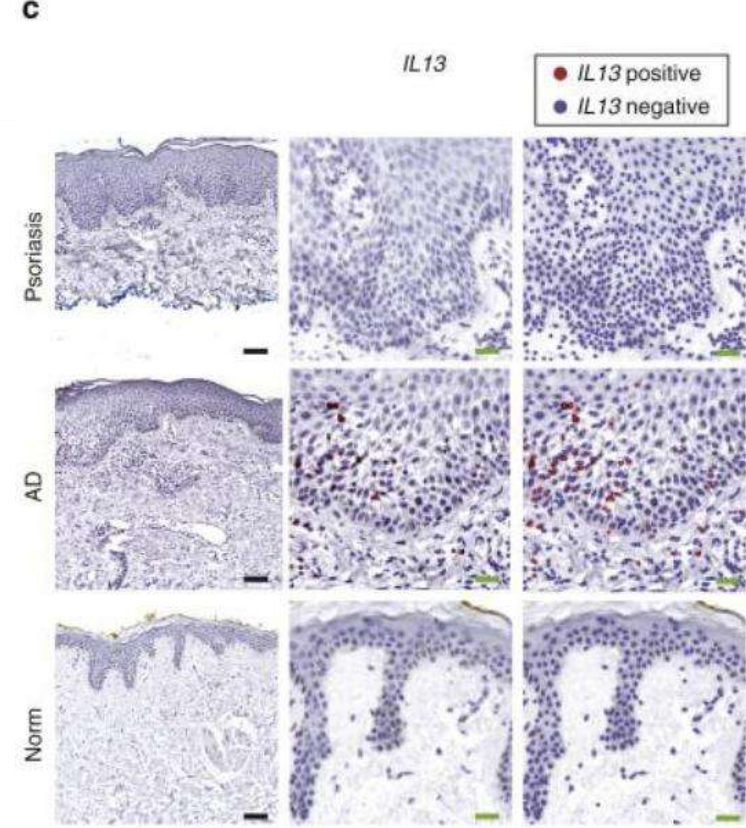
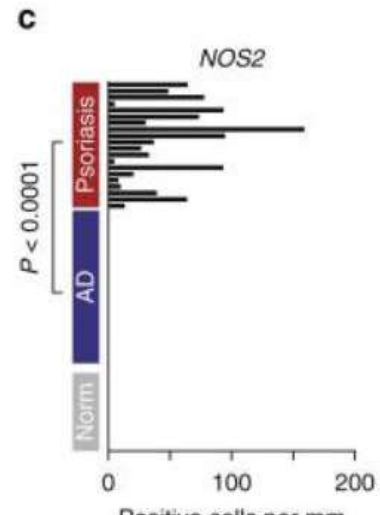
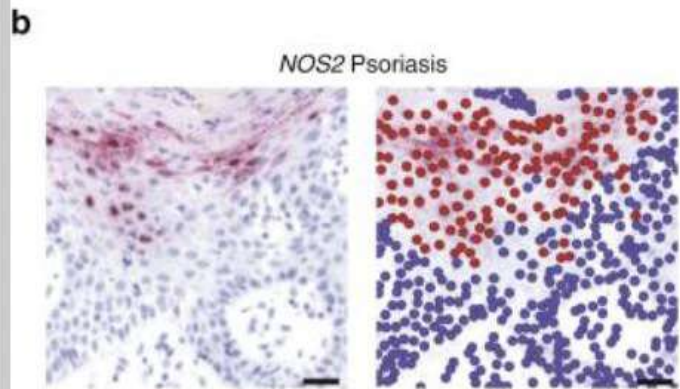
Hypothesis: NOS2 (iNOS) is upregulated in psoriasis but not eczema or normal skin

Secuenciación de ARN en masa  
Cohorte de pacientes con psoriasis (n = 28), DA (n = 27) y controles sanos (n = 38).

**NOS2** (que codifica la óxido nítrico sintasa inducible) estaba significativamente sobreexpresado en la psoriasis y representaba el transcriptoma con la mayor diferencia de expresión entre ambas condiciones.



**NOS2 está presente en psoriasis pero no eccema**



## Utilidad clínica

Goal #2: Provide treatment relevant information

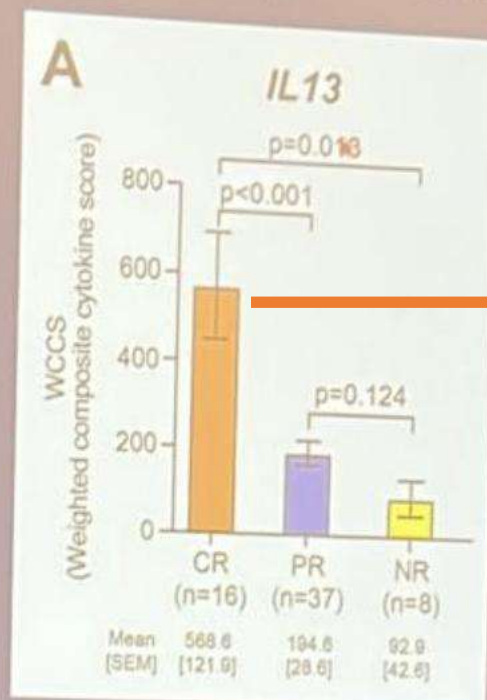
Hypothesis: If the target of a potential therapy is expressed, the patient is more likely to respond to it

# Utilidad clínica

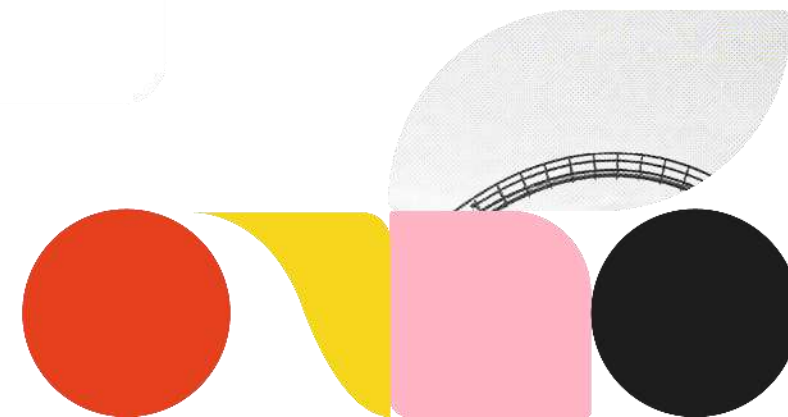
Guardar

## Retrospective study of cytokine staining in patients with eczema treated with dupilumab

- 61 patients with AD
  - Treated with dupilumab
  - Had a skin biopsy in our lab
  - Follow-up data in EMR
- Classified patient response
  - Complete responders (IGA 0)
  - Partial responders
  - Non-responders (no change or worsening)
- Does cytokine expression associate with response pattern?



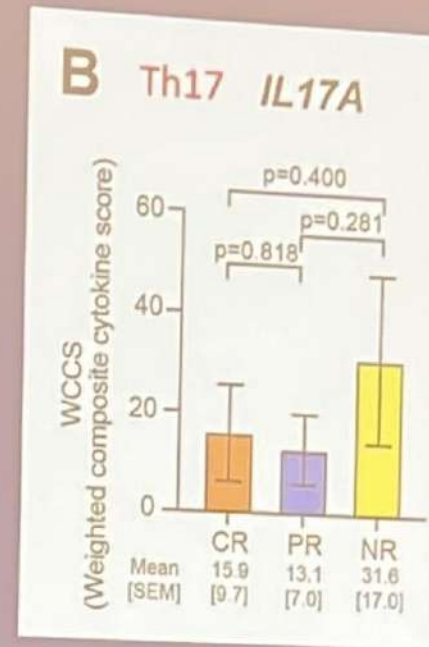
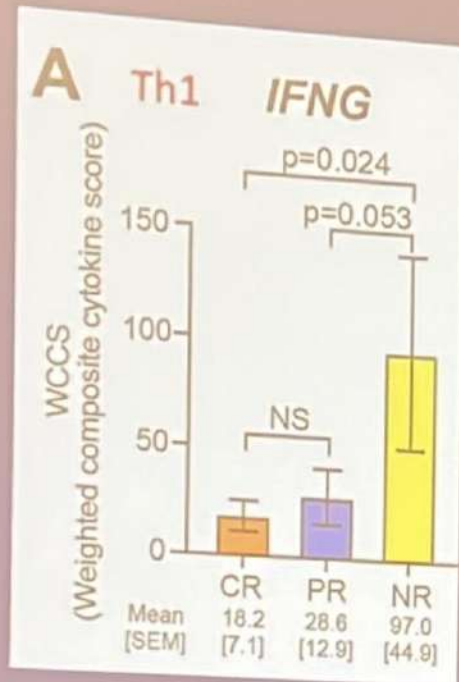
Mayor número de pacientes con respuesta completa (IGA 0)





# Utilidad clínica

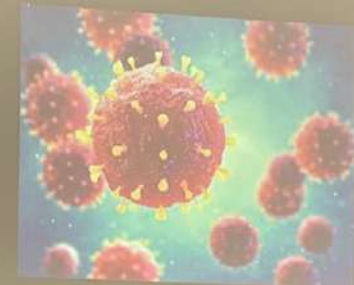
Non-canonical cytokine expression is associated with dupilumab non-response



# Rubéola y granulomas

## Granulomas Gone Wild: Update of Rubella as an Evolving Trigger

Kari (Karolyn) Wanat, MD  
Department of Dermatology  
Medical College of Wisconsin



Froedtert & MEDICAL COLLEGE OF WISCONSIN

## Summary: What We Know

IEI patients present with granulomas (including cutaneous)



RA27/3 strain detected within granulomas (3)



2014

~75 cases of IVDRV identified



2020

WT RuV identified in adult with CVID



2021

RuV identified in granulomas in immunocompetent adults

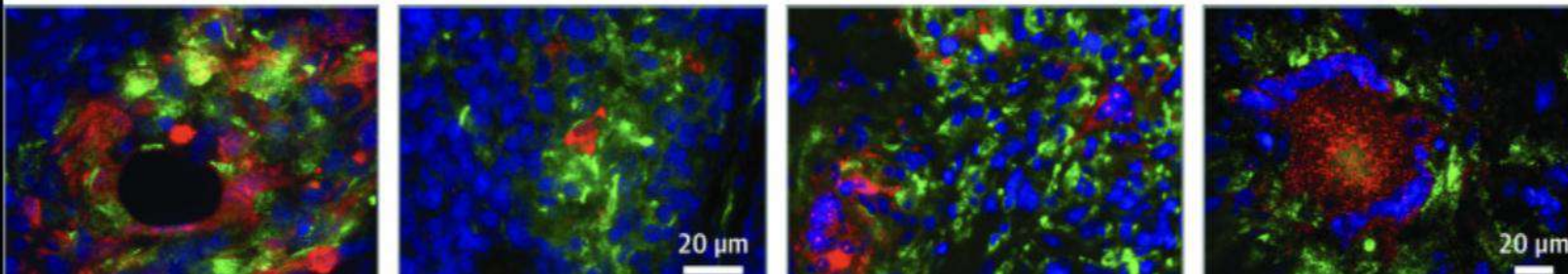
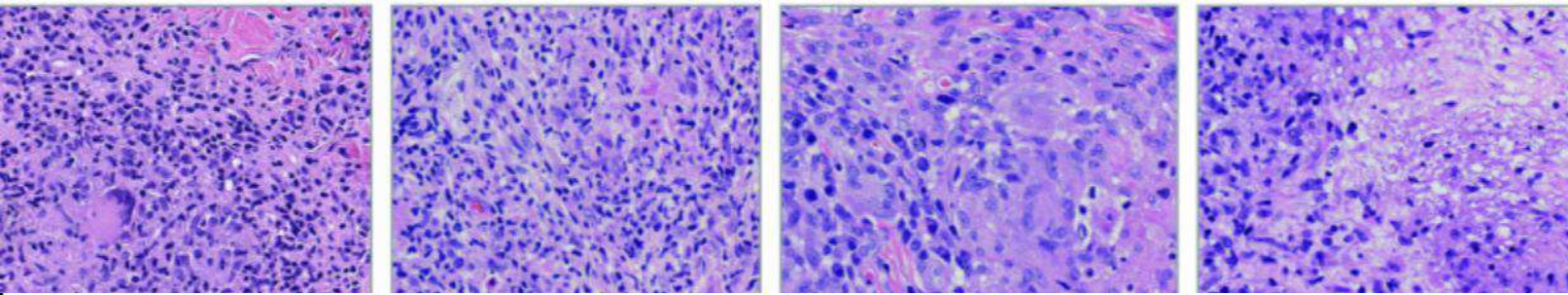
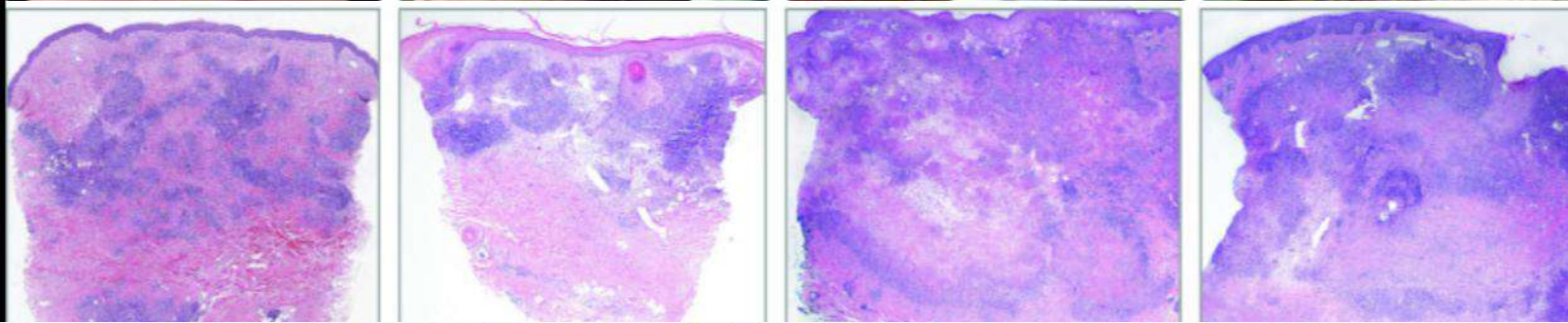


2022

> 60 adult patients with granulomas have RuV identified

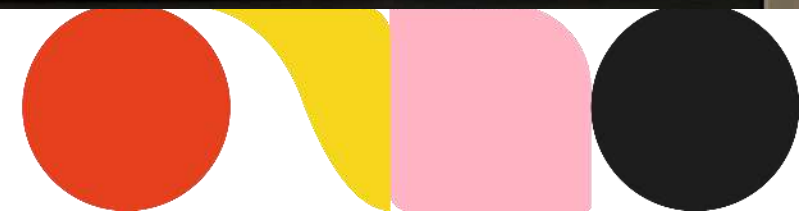


2025



- Clinical appearance:
  - All on arm
  - Papule, nodules, indurated plaques, some pustules and draining with scarring
- Histopathology
  - Granulomatous inflammation with necrosis
- Immunohistochemistry
  - RuV within macrophages!

*JAMA Dermatol.* 2022;158(6):626-633.  
*Front Immunol.* 2021 Dec 20;12:796065.  
*Curr Opin Allergy Clin Immunol.* 2020 Dec;20(6):574-581.



# Rubéola y granulomas

## Multi-Institutional Study

- Granulomas of unknown etiology with atypical appearance

Characteristic	Rubella Positive (N=71)	Rubella Negative (N=46)	P value
Age – mean yr.	53.44 ± 15.35	58.24 ± 16.11	0.14
Sex – no. (%)			0.72
Male	27 (38)	19 (41)	
Female	44 (62)	27 (59)	
Race – no. (%)			0.42
White	53 (75)	35 (76)	
Black	5 (7)	5 (11)	
Asian	1 (1)	2 (4)	
Not reported	12 (17)	4 (9)	
Ethnicity – no. (%)			0.66
Hispanic or Latino	4 (6)	1 (2)	
Not Hispanic or Latino	63 (89)	42 (91)	
Not specified	4 (6)	3 (7)	
Immune Status – no. (%) †			0.31
Immunocompetent	42 (59)	32 (70)	
Immunocompromised	26 (37)	13 (28)	
Granuloma location – no. (%) ‡			0.04
Head or Neck	5 (7)	5 (11)	
Trunk	5 (7)	10 (22)	
Extremities	57 (80)	29 (63)	
History of travel outside of the United States – no. (%)			0.03
Yes	9 <sup>1</sup> (13)	2 <sup>2</sup> (4)	
No	9 (13)	1 (2)	

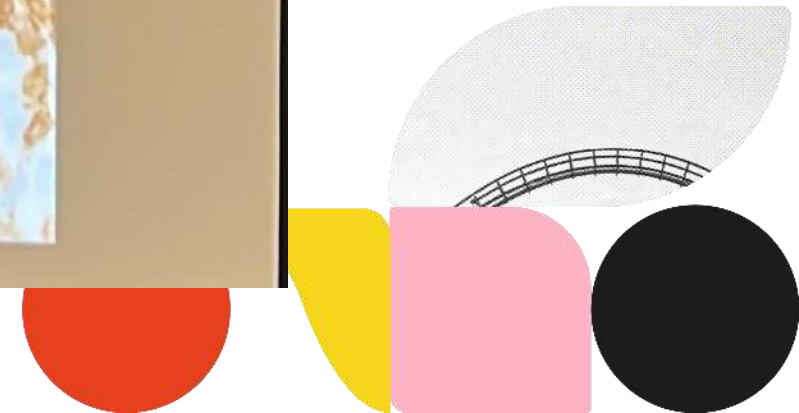
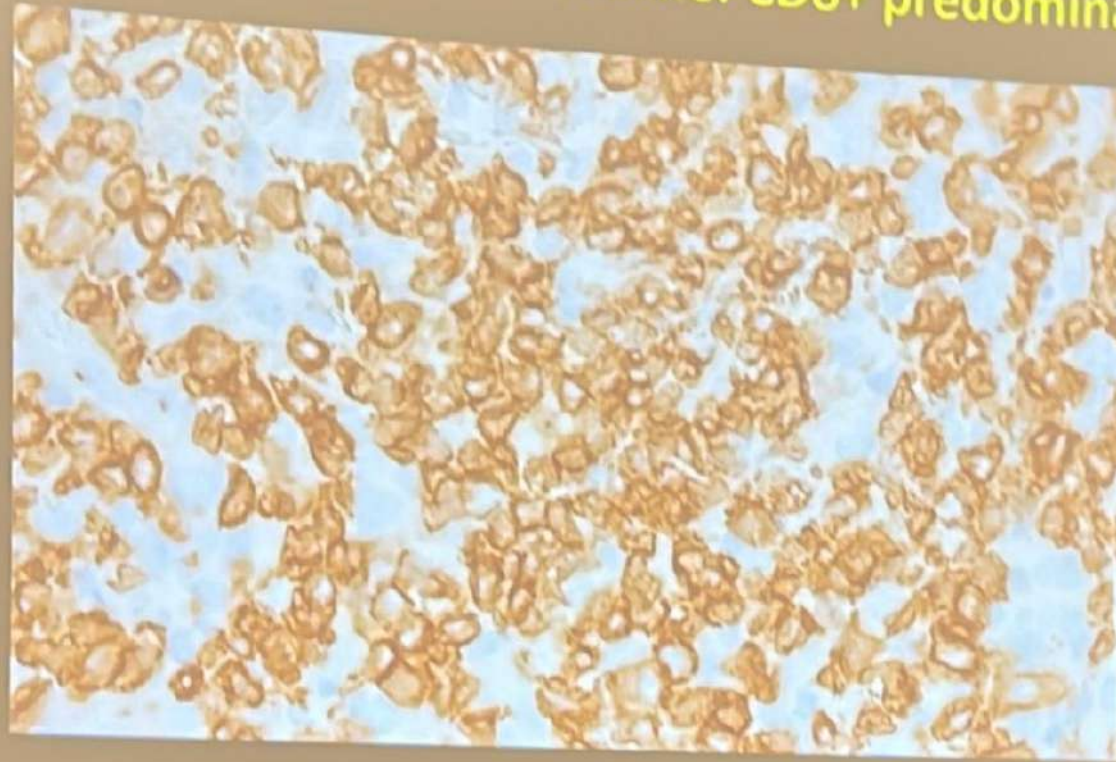
# Rubéola y granulomas

## Results: Histopathologic Features

Characteristic	Rubella Positive	Rubella Negative
Lymphocytes, non-brisk	5% (1/22)	50% (5/10)
<b>Lymphocytes, brisk</b>	<b>95% (21/22)</b>	40% (4/10)
<b>Neutrophils</b>	<b>91% (20/22)</b>	0% (0/10)
Eosinophils	41% (9/22)	20% (2/10)
<b>Plasma cells</b>	<b>82% (18/22)</b>	50% (5/10)
<b>Necrosis</b>	<b>50% (11/22)</b>	0% (0/10)
Fibroplasia	86% (19/22)	30% (3/10)

# Rubéola y granulomas

Immunohistochemical Profile: CD8+ predominant!



## Think about Rubella Associated Granulomatous Dermatitis:

- Suspect infection but cannot identify one
- Necrobiotic xanthogranuloma (without any gammopathy....or with)
- Granulomatous cutaneous T cell lymphoma
- Inflammatory granulomas

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# Casos clínicos

Viernes 7 Marzo

Una iniciativa de:



Con el patrocinio de:



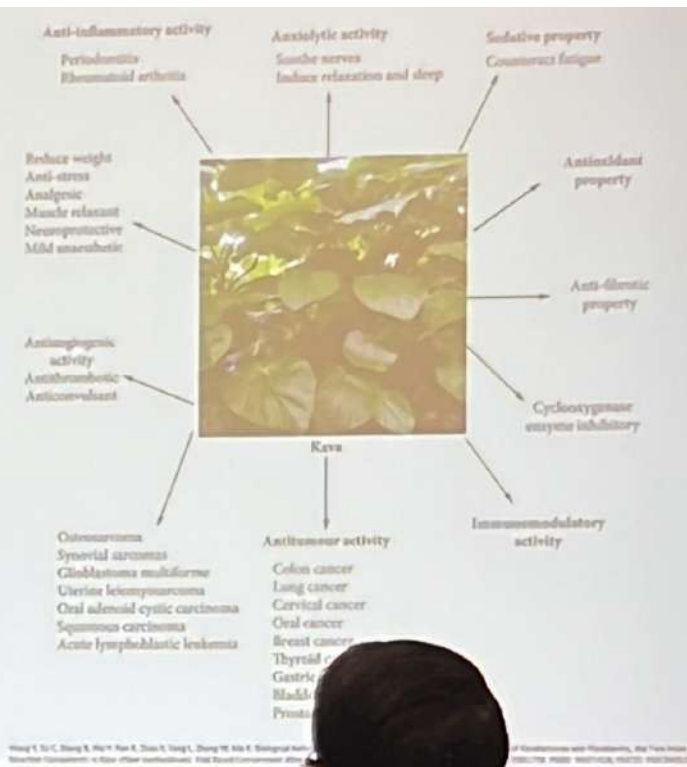


# Erupciones cutáneas por Kava

- Kava es un suplemento derivado de una planta originaria de las islas occidentales del Pacífico (*Piper methysticum*), que se consume normalmente como bebida para proporcionar efectos relajantes, analgésicos y ansiolíticos

## Effects of Kava

- Anti-inflammatory
- Anxiolytic
- Sedative
- Anti-oxidant
- Immunomodulatory
  
- 40 different organic compounds
  - Kavalactones



# Erupciones cutáneas por Kava

## Kava Eruptions: Clinical features

- Chronic ichthyosiform eruption
  - Reversible ichthyosiform pellagroid dermopathy
  - More common in Pacific Islands
- Sebotropic
  - Rapid onset ~2 weeks
- Dermatomyositis-like eruption
- Urticaria
- SJS



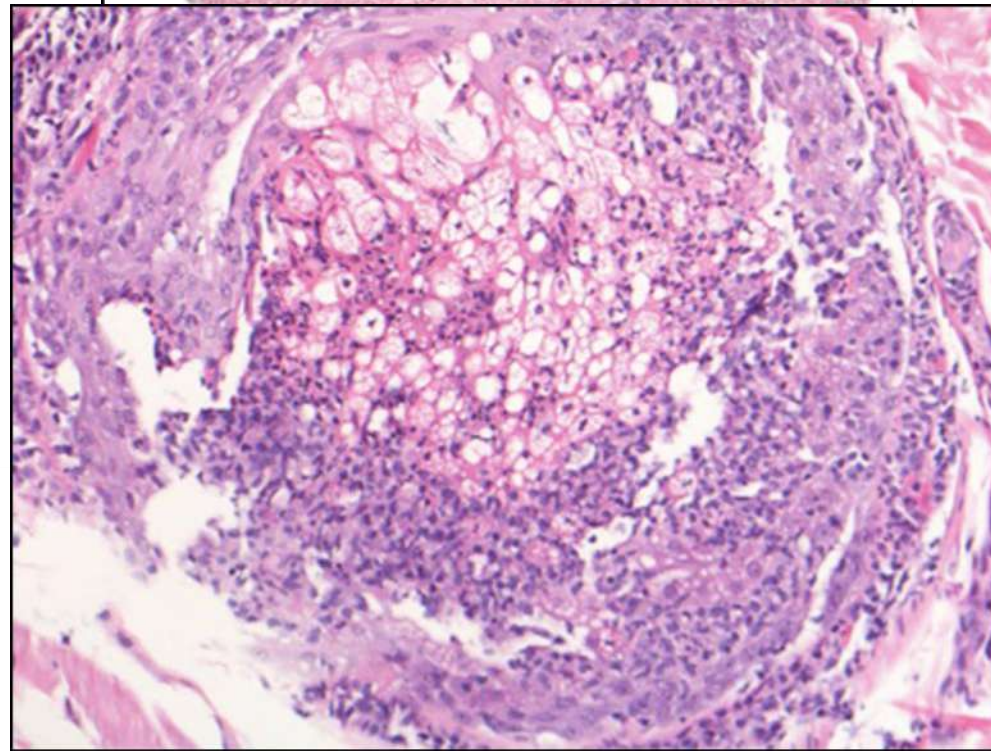
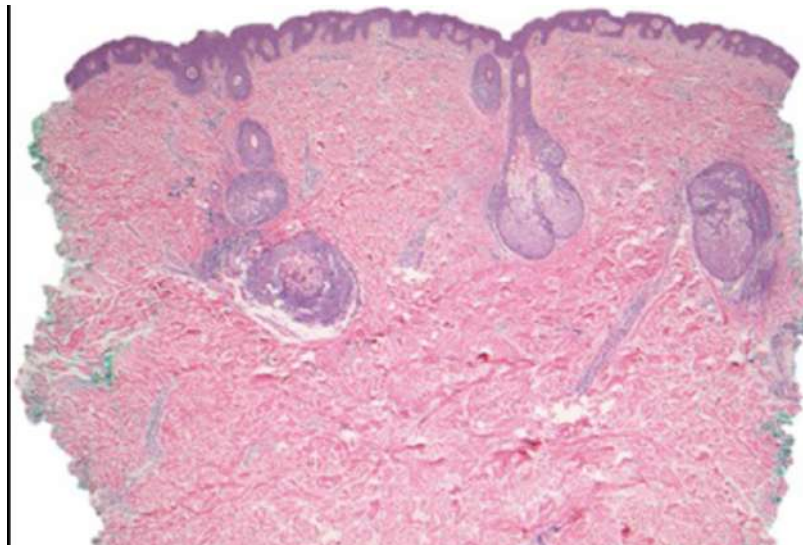
Toxic alkaloids in leaves

Synthetic kavain and mycotoxins present in the kava root when not consumed fresh

Int J Dermatol. Volume 55, Issue 12, Pages 2489-2494, First published 29 July 2016, DOI: 10.1111/ijd.12798

# Erupciones cutáneas por Kava

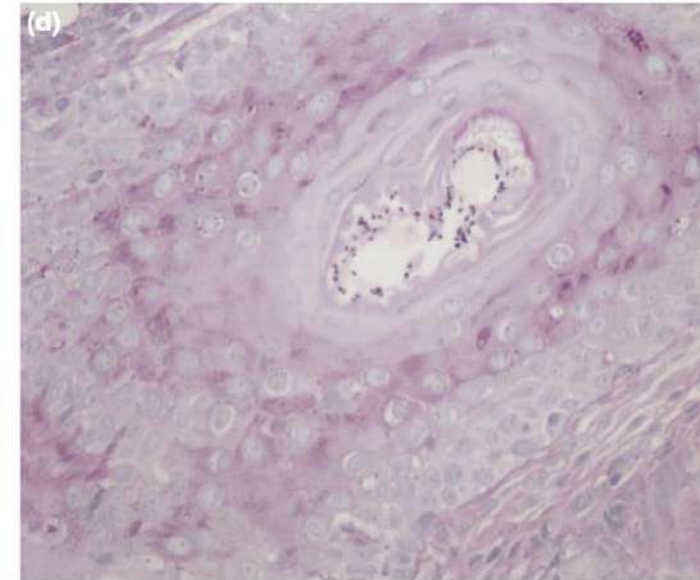
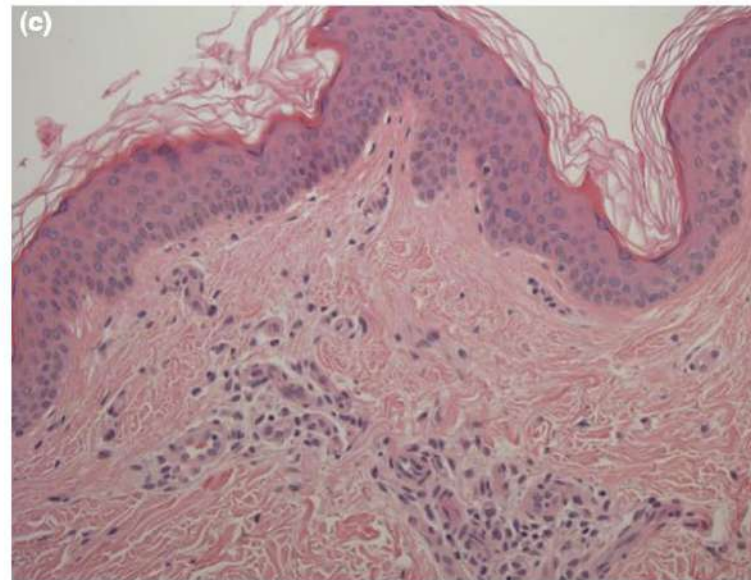
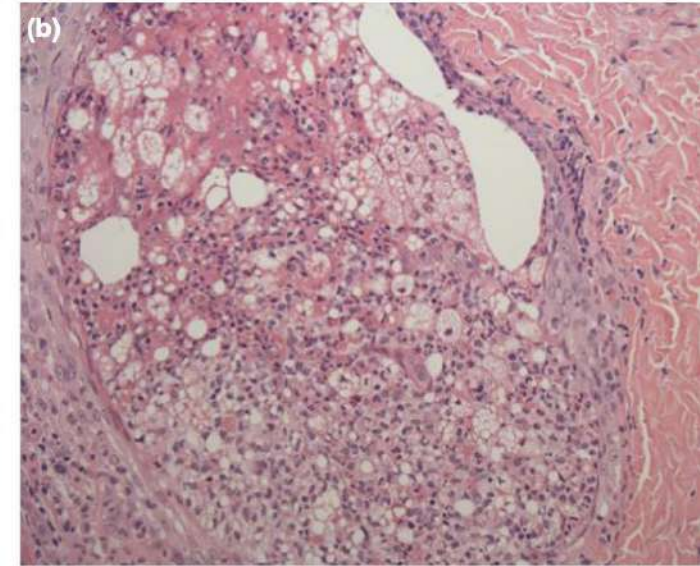
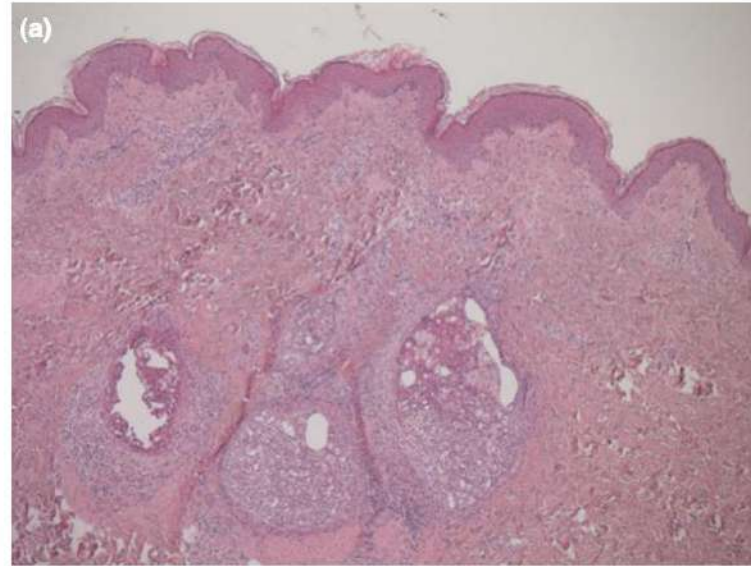
Sebotrópica:



# Erupciones cutáneas por Kava

## Sebotrópica:

- Infiltrado inflamatorio folicular y perifolicular que afecta toda la unidad pilosebácea
- Predominio de neutrófilos con algunas células mononucleares y eosinófilos también presentes



**Figure 2** (a) Mixed follicular and perifollicular inflammatory infiltrate affecting the whole pilosebaceous unit, rich in neutrophils, some mononuclear cells and eosinophils also present. (b) Folliculocentric inflammation. (c) Mild perivascular lymphocytic infiltration present in the dermis with an unremarkable epidermis. Haematoxylin and eosin, original magnification (a)  $\times 2.5$ ; (b)  $\times 10$ ; (c)  $\times 10$ . (d) Fungal spores were visible, although these may have been commensal (periodic acid-Schiff  $\times 20$ ).

# Erupciones cutáneas por Kava

## Increased use of Kava

- Who drinks kava?
- Younger generation turning to mocktails and herbal drinks
- Dedicated Kava Bars

Results for Portland, Oregon, Oregon

Places

- Kava Culture Kava Bar**  
4.5 (1,100) • 2140 SW 10th St  
3000 Southwest 10th St  
Great locally crafted drink featuring smooth pure kava, plus entertainment with live music.
- Kava Club Lounge**  
4.2 (1,100) • 2000 SW 10th St  
3000 Southwest 10th St  
Relaxed lounge featuring a pro-sports, games, live performances, and a large live music stage.
- SOOO KAVA**  
4.3 (1,100) • 2140 SW 10th St  
3000 Southwest 10th St  
Great lounge offering smooth pure kava beverages in an atmosphere of sophisticated setting.



## • Sebotropic Kava Eruption

- Neutrophil-rich infiltrate affecting the sebaceous lobules and follicles
- Ask a careful consumables history
- Monitor for signs of hepatic injury



# Calcinosis cutis y necrólisis epidérmica

Healing retardation of epidermal necrolysis due to calcinosis cutis

Calcinosis cutis probably related to caspofungin intake

Between 2015 and 2021:

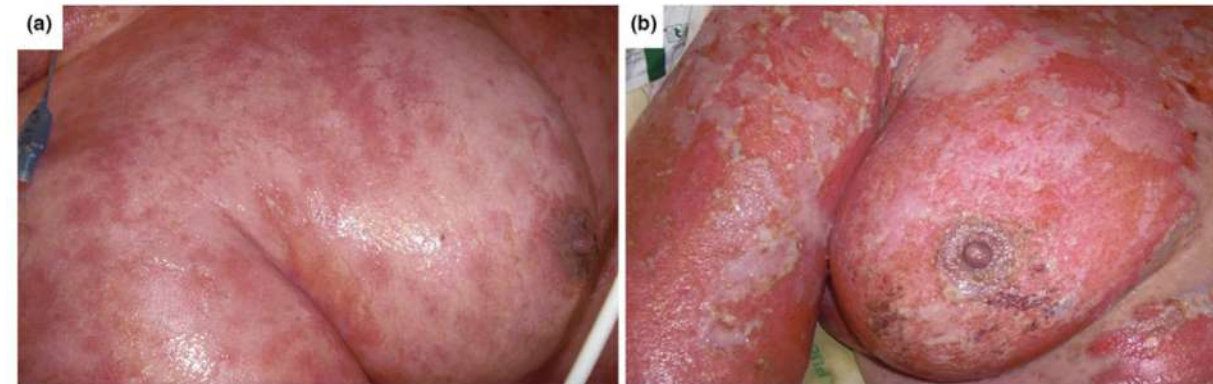
- 4 patients who presented with TEN and atypical healing retardation due to calcinosis cutis
- 3 M/1 F, aged from 40 to 59 YO (idiopathic, ibuprofen, pantoprazole, allopurinol)
- 3 to 22 days after the beginning of cutaneous healing: secondary cutaneous detachment with atone plaques
- 1 patient died without healing, complete healing was slowly obtained within 5.5 and 11 months for the other patients

The 4 patients were treated with caspofungin for invasive fungal infection to *Candida parapsilosis*, *Candida lusitanae*, *Candida albicans* or non-documented septic shock 1-8 days before the secondary epidermal detachment

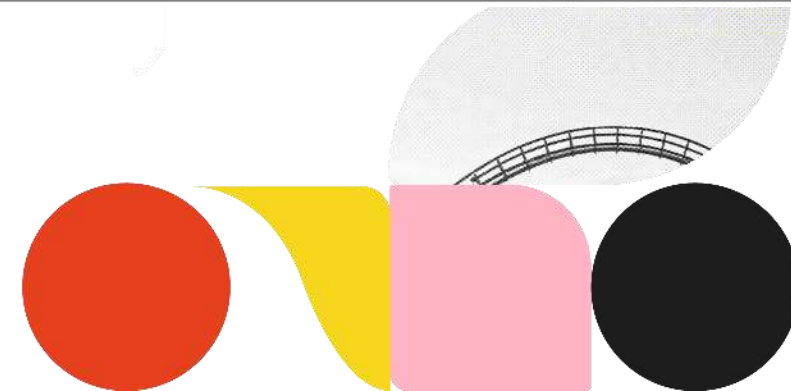
Letter to the Editor | [Full Access](#)

## Calcinosis cutis in epidermal necrolysis: role of caspofungin?

H. Colboc✉, T. Bettuzzi, M. Badrignans, D. Bazin, A. Boury, E. Letavernier, V. Frochet, E. Tang, P. Moguelet, N. Ortonne, N. de Prost, S. Ingen-Housz-Oro



**Figure 1** Clinical presentation of one patient. (a) Dermatological examination on day 12, revealing almost complete mucocutaneous healing. (b) Dermatological examination on day 29, 11 days after the introduction of caspofungin, revealing diffuse epidermal detachment associated with the presence of fibrinous plaques.



# Calcinosis cutis y necr lisis epid rmica

- Deposito de calcio en epidermis y dermis superficial

## Physiopathology :

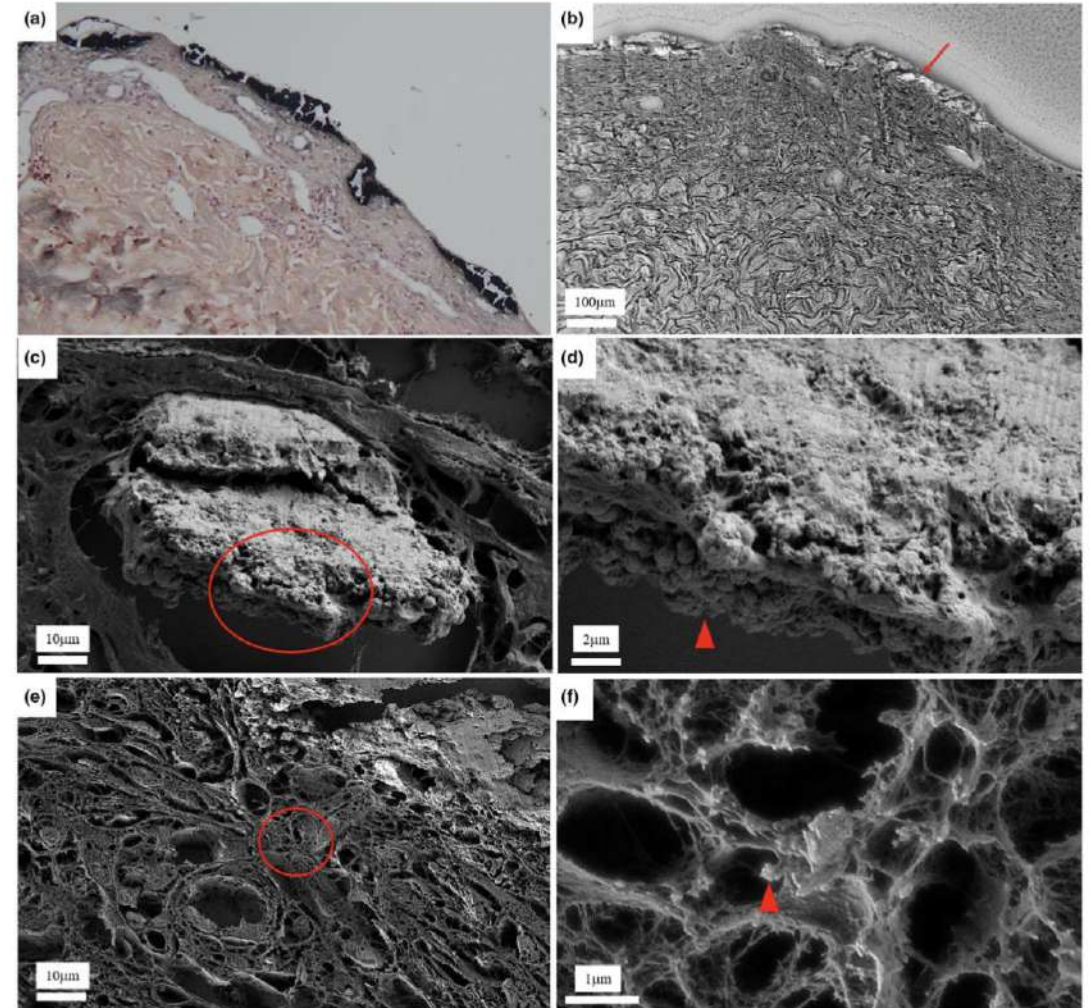
Caspofungin = agonist of ryanodine receptor (RyR), strongly expressed in keratinocytes

- modification of keratinocytes'calcium intracellular concentration,
- alteration of the new keratinocytes at the very initial stage of cutaneous healing,
- explaining the presence of upper dermis and epidermal calcifications
- and the relapse of epidermal detachment followed by a major healing retardation

## Calcinosis cutis in epidermal necrolysis: role of caspofungin?

### Take-home message

Liposomal amphotericin B or fluconazole might, therefore, be preferred for patients with TEN in case of invasive fungal infection



**Figure 2** Skin biopsy sections. Diffuse necrosis of the corneal layer associated with calcium deposition in the superficial dermis. (a) Von Kossa staining ( $\times 100$ ). (b) Field emission scanning electron microscopy. Arrow indicates the voluminous calcifications. (c–f) Field emission scanning electron microscopy. (c) The lower part of the voluminous calcification (circle) consists of many small aggregated spherical entities. (d) High magnification of panel (c) circled area. (e) Papillary dermis below voluminous calcification. (f) High magnification of panel (e) circled area, showing many spherical calcifications within the papillary dermis.

# Metallosis cutánea

## HPI

- Eruption on her left forearm
  - Elbow joint repair five years ago
  - Two years ago her elbow turned "black"
  - Full revisional surgery
- Current skin changes with warmth, redness and swelling around the arm
- Aspiration and culture negative
- Minocycline for 10 days per orthopedics
  - ID stopped

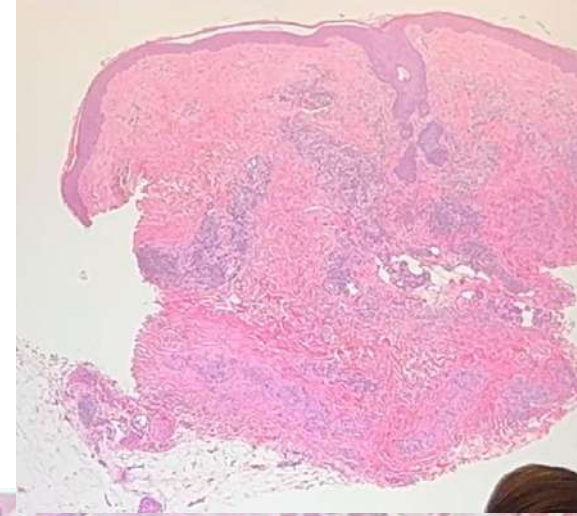
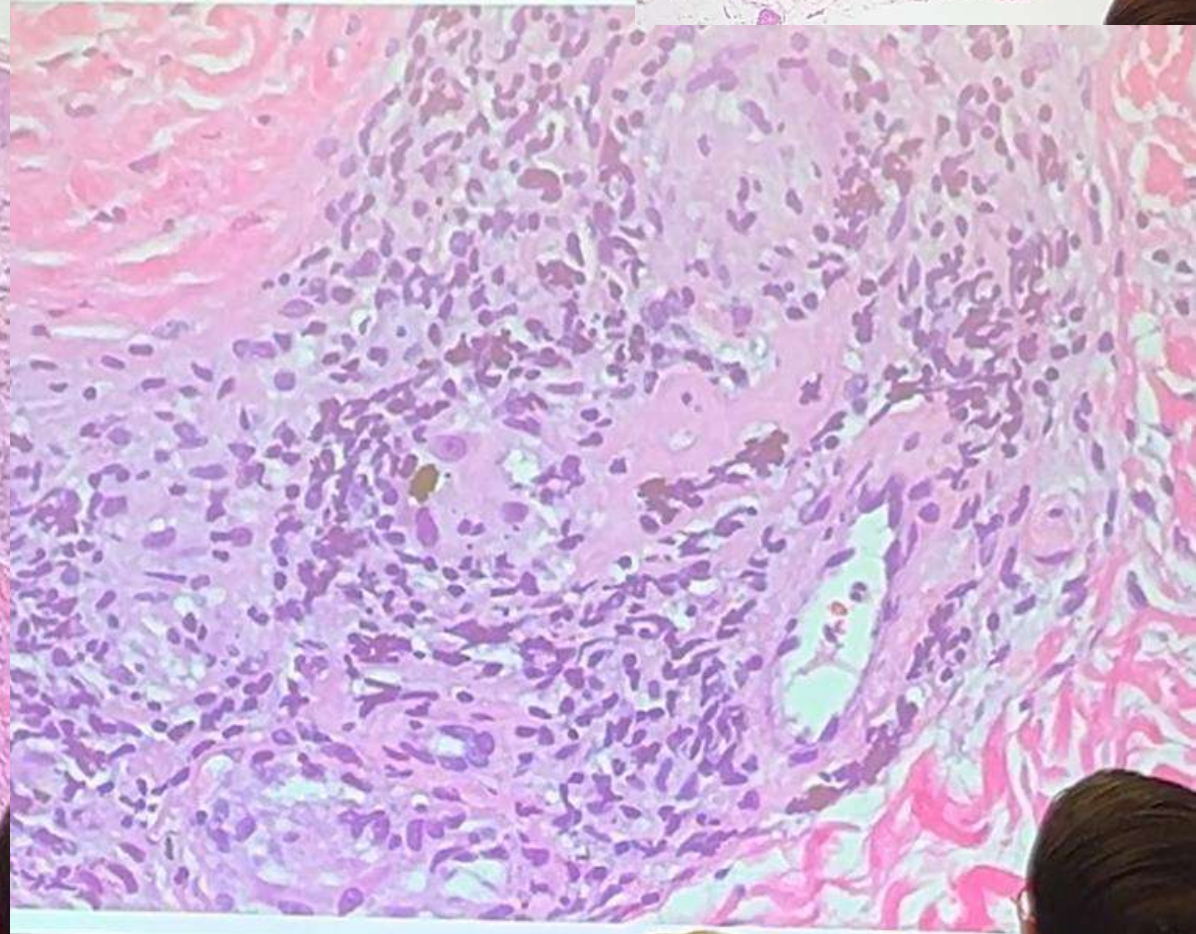
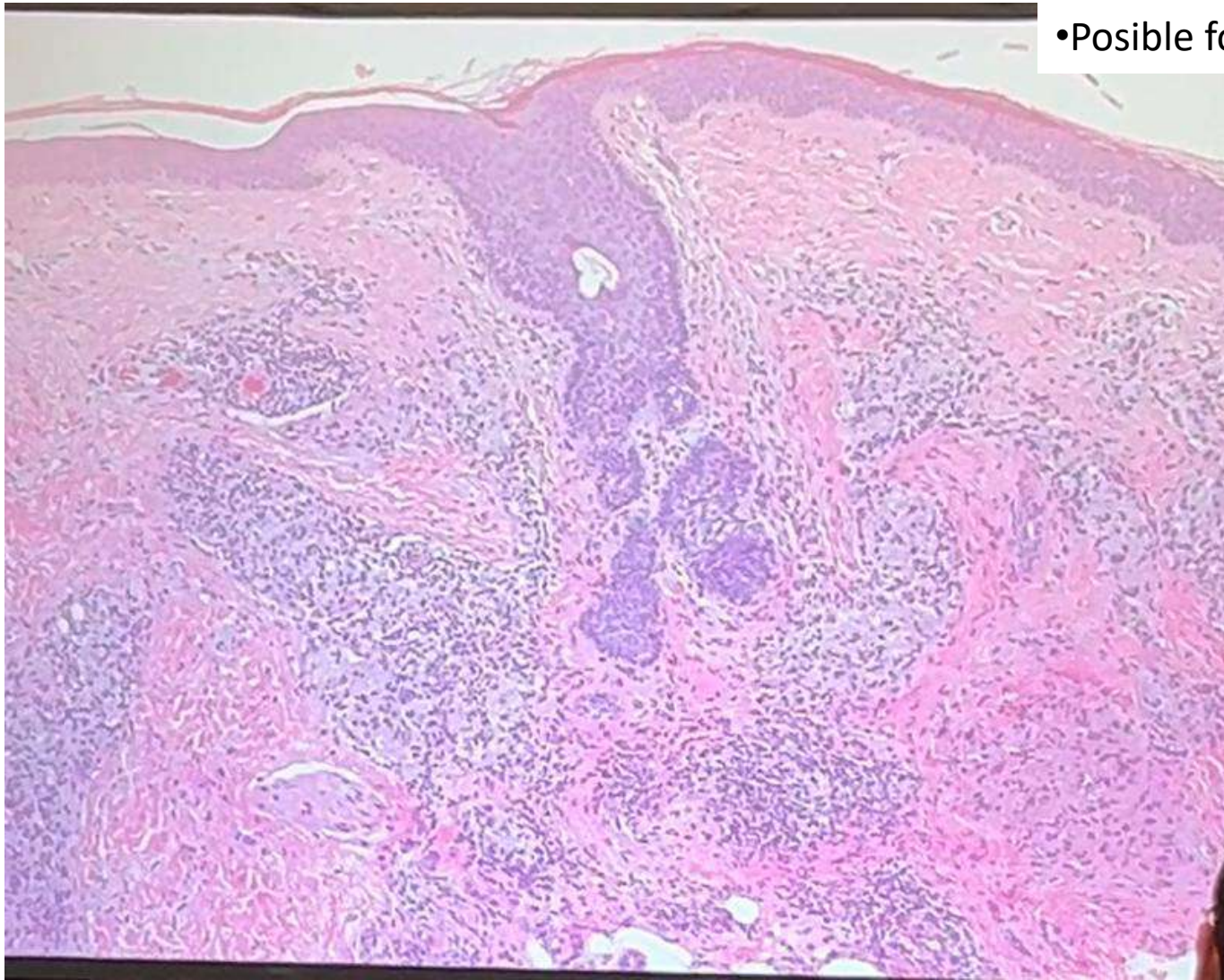




# Metalosis cutánea

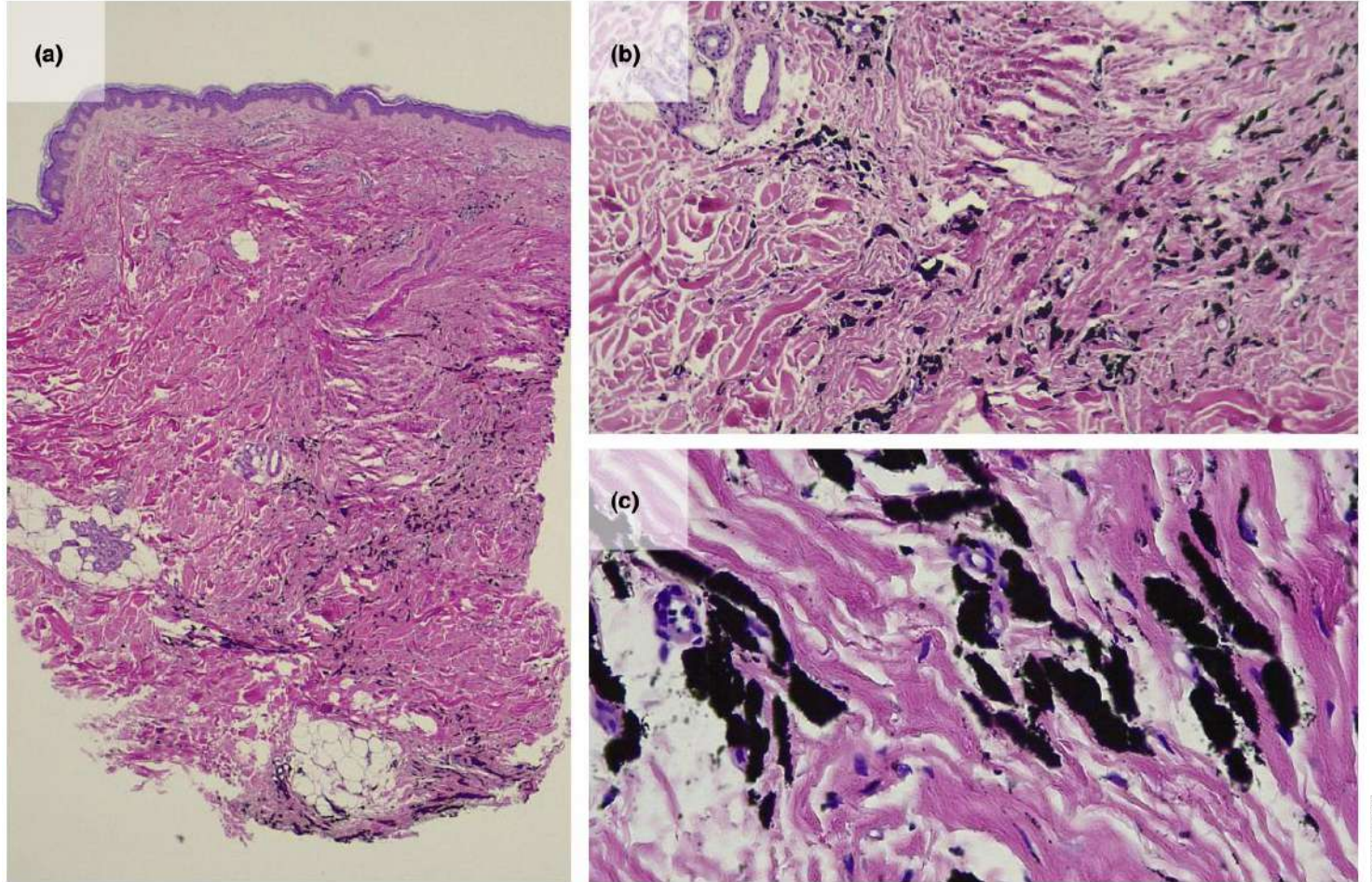
## Metalosis Cutánea: Características Histopatológicas

- Gránulos de pigmento exógeno negro
- Intra y extracelular
- Infiltrado linfohistiocítico
- Posible formación de granulomas



# Metallosis cutánea

- Rare manifestation of metallosis complicating joint arthroplasty
- 13 case reports of skin involvement
- Fracture of ceramic liner
- Deposits of titanium alloy or cobalt-chromium alloy



**Figure 2** (a–c) Punch biopsy sample from the blue–grey skin over the the replaced joint, showing (a) black pigment in reticular dermis and subcutaneous tissues, and (b,c) interstitial black pigment with minimal inflammatory infiltrate. Haematoxylin and eosin, original magnification (a)  $\times 2.5$ ; (b)  $\times 10$ ; (c)  $\times 40$ .

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**¡Muchas gracias!**

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