UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 11, 2024

ACELYRIN, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-41696**	**85-2406735**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

4149 Liberty Canyon Road	
Agoura Hills, California	**91301**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (805) 730-0360

N/A
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.00001 par value per share	SLRN	Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure

On March 11, 2024, ACELYRIN, INC. (the "Company") issued two press releases, entitled "ACELYRIN, INC. Announces Positive Top-line Results from Its Global Phase 2b/3 Clinical Trial of Izokibep in Psoriatic Arthritis" and "ACELYRIN, INC. Announces Long-Term 32-Week Data from the Phase 2b Trial of Izokibep in Hidradenitis Suppurativa Demonstrating Sustained Responses and Deepening Clinical Benefit – Improving Quality of Life for Patients". The Company also released a presentation related to and intended to be read together with the foregoing press releases. A copy of the press releases and the presentation slides are furnished herewith as Exhibits 99.1 to 99.3 and are incorporated herein by reference.

In Q4 2023, we disclosed a vendor programming error caused a dose-sequencing error in the 160 mg every other week (Q2W) and 80mg every four weeks (Q4W) dosing arms of our Phase 2b/3 trial in Psoriatic Arthritis ("PsA Trial"), and that we would conduct an independent audit of this and certain other trials. We have completed our audits of the PsA Trial and our Phase 2b trial in Hidradenitis Suppurativa (HS). We appreciate Fortrea's commitment to working together and the attention their leadership has given to this matter so that we could together determine the best path forward.

Given the dose-sequencing error and audit findings, we plan to remediate certain findings in the PsA trial to enable this study as the first of two registrational trials in PsA. We expect to work with Fortrea on certain ongoing studies while transitioning other services. Upon completion of that work, the parties have mutually agreed to part ways. We anticipate the majority of services will be transitioned by the end of Q1 2024 and we expect to continue to cooperate together to complete the ongoing remediation efforts. We are pleased that we have ultimately been able to address this challenge and move forward with the izokibep clinical development program.

The information disclosed under this Item 7.01 and in the related exhibits hereto is being furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 and shall not be deemed incorporated by reference into any filing made under the Securities Act of 1933, except as expressly set forth by specific reference in such filing. The furnishing of information pursuant to this Item 7.01 will not be deemed an admission that any information in this report is material or required to be disclosed by Regulation FD.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Press release, titled "ACELYRIN, INC. Announces Positive Top-line Results from Its Global Phase 2b/3 Clinical Trial of Izokibep in Psoriatic Arthritis", dated March 11, 2024
99.2	Press release, titled "ACELYRIN, INC. Announces Long-Term 32-Week Data from the Phase 2b Trial of Izokibep in Hidradenitis Suppurativa Demonstrating Sustained Responses and Deepening Clinical Benefit – Improving Quality of Life for Patients", dated March 11, 2024
99.3	Presentation, titled "Izokibep Psoriatic Arthritis Global Phase 2b/3 TopLine Results; Izokibep Hidradenitis Suppurativa Phase 2b Long Term 32 Week Data", dated March 11, 2024
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

ACELYRIN, INC.

Dated: March 11, 2023

By: */s/ Gil M. Labrucherie*
Gil M. Labrucherie
Chief Financial Officer

Exhibit 99.1

ACELYRIN, INC. Announces Positive Top-line Results from Its Global Phase 2b/3 Clinical Trial of Izokibep in Psoriatic Arthritis

Study met primary endpoint of ACR50 at 16 weeks versus placebo with high statistical significance and is expected to be the first of two registrational trials in psoriatic arthritis

Robust clinical responses achieved for the high hurdles of ACR70, PASI100, as well as composite endpoints ACR50/PASI100 and Minimal Disease Activity

Favorable safety profile consistent with the IL-17A class and previous izokibep experience

LOS ANGELES, March 11, 2024 (GLOBE NEWSWIRE) – ACELYRIN, INC. (Nasdaq: SLRN), a late-stage clinical biopharma company focused on accelerating the development and delivery of transformative medicines in immunology, today announced its global Phase 2b/3 clinical trial of izokibep in psoriatic arthritis (PsA) met the primary endpoint of ACR50 at week 16 with high statistical significance. Results from the 160 mg weekly (QW) and every other week (Q2W) arms showed improved magnitude of responses on higher hurdle endpoints such as ACR70, PASI100, and Minimal Disease Activity relative to the Phase 2 80 mg Q2W dose. This is notable given a higher baseline disease burden in the Phase 2b/3 trial population relative to the Phase 2 trial.

Izokibep was well-tolerated with a favorable safety profile consistent with previous experience and the IL-17A class, without evidence of the safety liabilities observed with targeting IL-17A&F. The trial had a low study discontinuation rate of < 3%. Mild-to-moderate injection site reactions (ISRs) were observed with discontinuations due to ISR < 2%. There were two cases of mild candida – one in the placebo arm and one in the 160 mg QW arm – and no cases of suicidal ideation/behavior.

Pre-specified analyses continue to support the potential for differentiation in enthesitis resolution. Consistent high magnitude absolute responses were demonstrated in the Phase 2-comparable population (baseline Leeds Enthesitis Index (LEI) 1 or 2) although enthesitis resolution overall was not statistically significant due to high placebo response. Izokibep achieved clinically meaningful resolution in patients with the highest burden of enthesitis (baseline LEI 3-6) relative to placebo an effect not previously reported by other agents.

Additional information about these results can be found at ACELYRIN.com. Further data from this trial will be presented at future scientific meetings.

“These positive Phase 2b/3 data reinforce the potential demonstrated in Phase 2 for izokibep to provide meaningful benefit in treating the debilitating signs and symptoms of active psoriatic arthritis in the joints and skin, as well as enthesitis where the results in the most severe patients are encouraging and warrant further study,” said Philip Mease, MD, MACR, Director of Rheumatology Research at Swedish Medical Center. “We have observed from the Phase 2 46-week data that there is no safety limitation to long-term treatment with izokibep and that longer duration of therapy demonstrated the potential for even further improvements over time.”

“We are excited about our continued progress with izokibep in both PsA and HS,” said Shao-Lee Lin, MD, PhD, Founder and CEO of ACELYRIN. “The positive PsA study results at week 16 and the magnitude of responses give us conviction that 160 mg Q2W delivers higher clinical responses than those reported by the approved IL-17A agents, and responses comparable to those reported by the IL-17A&F agents without the associated safety liabilities. Across indications, we have observed clinically meaningful and potentially differentiated benefit from izokibep. We have consistently seen

responses in high order efficacy measures such as ACR70 and PASI100 in PsA and HiSCR100 in HS that move patients toward disease resolution. This reinforces our enthusiasm for developing izokibep as an important potential new medicine for patients."

About the Phase 2b/3 Psoriatic Arthritis clinical trial
The Phase 2b/3 clinical trial (NCT05623345) is a global, multi center, randomized double-blind, placebo-controlled, trial evaluating the safety and efficacy of izokibep dosed subcutaneously 160 mg every week (QW) or every two weeks (Q2W) and 80 mg every four weeks (Q4W) versus placebo. 351 adult patients with active PsA were enrolled across 71 sites in the United States and Europe and randomized across the four arms. Dose sequencing in the 160 mg Q2W and 80 mg Q4W arms was impacted by a third-party programming error. The range of pharmacokinetic data from both the 160 mg QW and Q2W arms in PsA demonstrated comparable exposures to the same dose levels from the Phase 2b HS study.

For more information about the Phase 2b/3 PsA clinical trial, please visit www.clinicaltrials.gov.

About Psoriatic Arthritis
Psoriatic arthritis (PsA) is a chronic immune-mediated inflammatory disease characterized by multiple manifestations including joint inflammation, skin lesions consistent with psoriasis, and enthesitis (painful inflammation of the small, dense tissues that connect ligament and tendons to bone), all contributing to reduced quality of life. It is estimated that approximately 30% of the 125 million people living with psoriasis worldwide will also develop PsA over time. There remains a large unmet need for more effective therapies to treat PsA across all disease manifestations.

About Izokibep
Izokibep is a small protein therapeutic designed to inhibit IL-17A with high potency through tight binding affinity, the potential for robust tissue penetration due to its small molecular size, about one-tenth the size of a monoclonal antibody, and an albumin binding domain that extends half-life. Clinical trial data supports the hypothesis that these unique characteristics of izokibep may provide clinically meaningful and differentiated benefits for patients, including resolution of key manifestations of disease. Izokibep is being evaluated in multiple late-stage trials in moderate-to-severe hidradenitis suppurativa (HS), psoriatic arthritis (PsA), and uveitis, with plans to initiate an additional Phase 3 program in axial spondyloarthritis (AxSpA).

About ACELYRIN, INC.
ACELYRIN, INC. (Nasdaq: SLRN) is a Los Angeles area-based late-stage clinical biopharma company – with additional operations in the San Francisco Bay area – focused on providing patients life-changing new treatment options by identifying, acquiring, and accelerating the development and commercialization of transformative medicines.

For more information about ACELYRIN, visit us at www.acelyrin.com or follow us on LinkedIn and X.
Forward Looking Statements
This press release contains forward-looking statements including, but not limited to, statements related to the overall advancement of ACELYRIN's programs and ability to accelerate the development and delivery of transformative medicines; anticipated development activities including the planned initiation of a clinical program in AxSpA; the therapeutic potential of ACELYRIN's product candidates including its ability to offer clinically meaningful, differentiated benefits for patients that may improve over time, move patients towards disease resolution and limit safety liability versus other treatment and potential treatment options; ACELYRIN's ability to include the ongoing Phase 2b/3 trial in psoriatic arthritis in any registrational package for such indication, which is subject to remediation and regulatory agency review amongst other factors; and other statements that are not historical fact. These forward-looking statements are based on ACELYRIN's current plans, objectives

and projections, and are inherently subject to risks and uncertainties that may cause ACELYRIN's actual results to materially differ from those anticipated in such forward-looking statements. Such risks and uncertainties include, without limitation, those associated with the successful completion of development and regulatory activities with respect to ACELYRIN's product candidates and other risks and uncertainties affecting ACELYRIN including those described from time to time under the caption "Risk Factors" and elsewhere in ACELYRIN's current and future reports filed with the Securities and Exchange Commission, including its Quarterly Report on Form 10-Q for the quarter ended September 30, 2023. Forward-looking statements contained in this press release are made as of this date, and ACELYRIN undertakes no duty to update such information except as required under applicable law.

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Exhibit 99.2

ACELYRIN, INC. Announces Long-term 32-Week Data from the Phase 2b Trial of Izokibep in Hidradenitis Suppurativa Demonstrating Sustained Responses and Deepening Clinical Benefit - Improving Quality of Life for Patients

Dose ordered and robust HiSCRs were rapidly demonstrated with about a third of patients achieving HiSCR100, or resolution of abscesses and nodules, by week 16 and through week 32

Deep and consistent HiSCR responses were observed for placebo patients switching to active treatment

Marked reductions in draining tunnels and skin pain also contributed to clinically meaningful improvements in quality of life

Potential for differentiation was demonstrated with both high clinical responses as well as a favorable safety profile consistent with the IL-17A class and previous izokibep experience

LOS ANGELES, March 11, 2024 (GLOBE NEWSWIRE) – ACELYRIN, INC. (Nasdaq: SLRN), a late-stage clinical biopharma company focused on accelerating the development and delivery of transformative medicines in immunology, today announced long-term data from a Phase 2b clinical trial of izokibep in hidradenitis suppurativa (HS). These data demonstrated no evidence of increased safety liability with longer-term treatment and increased duration of therapy was associated with further clinical improvements over time.

Patients who switched from placebo to izokibep at week 16 achieved a similar speed and magnitude of response as those who began treatment with izokibep at baseline for HiSCRs, draining tunnels, skin pain and Dermatology Life Quality Index (DLQI). High orders of HiSCR were achieved with the majority of patients achieving HiSCR75 and about a third achieving HiSCR100 by week 16 and through 32 weeks.

These results are from an open label extension with all subjects through week 32. Additional information can be found at ACELYRIN.com. Further data from this trial will be presented at future scientific meetings.
"The magnitude and depth of responses for signs and symptoms of Hidradenitis Suppurativa in this long-term study are consistent with izokibep's mechanism of action. These results are corroborated by the appreciable clinical responses observed in the placebo cross-over cohort, which demonstrate rapid, HiSCR response," said Kim Papp MD, PhD, President and Director of Research, Probity Medical Research, Inc. "We believe that these consistent and robust results in HS point to the future potential for izokibep to deliver differentiated clinical benefits for patients."

"It's heartening to see the exciting results from this longer term follow up across all of the important manifestations of this debilitating disease, despite the initial primary endpoint of this study not meeting statistical significance," said Shao-Lee Lin, MD, PhD, Founder and CEO of ACELYRIN. "Across indications, we have observed clinically meaningful and potentially differentiated benefit from izokibep. We have consistently seen responses in high order efficacy measures such as HiSCR100 in HS and ACR70 and PASI100 in PsA, that move patients toward disease resolution. This reinforces our enthusiasm for developing izokibep as an important potential new medicine for patients."

Izokibep was well-tolerated with a favorable safety profile consistent with previous experience and the IL-17A class. Potential for differentiation was demonstrated with higher clinical responses achieved earlier than reported by other IL-17A agents and the IL-17A&F agents without evidence to

date for increased risk of infection, especially fungal or suicidal ideation and behavior, in a patient population predisposed to infection and clinical depression.

"The pain and discomfort that people living with HS experience on a daily basis is extremely debilitating," said Falk Bechara MD, Clinical Professor in the Department of Dermatology at the Ruhr-University Bochum. “These data are impressive, showing izokibep dose ordered, fast speed of onset across endpoints. The consistency and magnitude of responses in resolution of abscesses and nodules, reduction in draining tunnels, and improvement in pain, impact overall quality of life and suggest that izokibep could be a significant therapeutic for HS, with a positive benefit risk in addressing an unmet need.”

Topline data from an ongoing phase 3 trial in HS is expected by the end of 2024. A confirmatory phase 3 trial of approximately 400 patients is planned to address guidance on size of safety database given the FDA no longer considers moderate-to-severe HS an orphan disease.

About the Phase 2b Hidradenitis Suppurativa clinical trial
The Phase 2b clinical trial (NCT05355805) is a global, multi center, randomized double-blind, placebo-controlled, trial evaluating the safety and efficacy of izokibep dosed 160 mg every week (QW) or every two weeks (Q2W) versus placebo. At week 16, patients who received placebo were randomized to either the weekly or every two week active treatment arm and all patients were assessed through week 32. The objective of the study was to determine the effect of izokibep versus placebo on various measures of clinical impact and determine the appropriate dose(s) for further clinical development in hidradenitis suppurativa.

For more information about the Phase 2b HS clinical trial, please visit www.clinicaltrials.gov.

About Hidradenitis Suppurativa
Hidradenitis Suppurativa (HS) is a chronic Inflammatory skin disease causing scarring, abscesses, malodor and pain. HS typically occurs in areas with high concentrations of sweat glands and is typically accompanied by pain, malodor, drainage, and disfigurement that contribute to disability and a devastating impact on quality of life. Patients with HS miss a greater number of days of work and have increased disability compared to the average population. In 2019, there were an estimated 317,000 HS patients in the U.S., of which 50-60% were moderate-to-severe HS patients.

About Izokibep
Izokibep is a small protein therapeutic designed to inhibit IL-17A with high potency through tight binding affinity, the potential for robust tissue penetration due to its small molecular size, about one-tenth the size of a monoclonal antibody, and an albumin binding domain that extends half-life. Clinical trial data supports the hypothesis that these unique characteristics of izokibep may provide clinically meaningful and differentiated benefits for patients, including resolution of key manifestations of disease. Izokibep is being evaluated in multiple late-stage trials in moderate-to-severe hidradenitis suppurativa (HS), psoriatic arthritis (PsA), and uveitis, with plans to initiate an additional Phase 3 program in axial spondyloarthritis (AxSpA).

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Exhibit 99.3

ACELYRIN

Izokibep

Psoriatic Arthritis

Global Phase 2b/3 Topline Results

March 11, 2024

Forward Looking Statements And Disclaimer

This presentation contains statements that are not of historical facts, considered forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include, but are not limited to, statements about the therapeutic potential of our product candidate izokibep, including with respect to the potential for longer-term treatment with izokibep to provide for continued improvement over time; the long-term safety profile of izokibep; the timing and availability of data from clinical trials; the potential market size and size of the potential patient populations for certain indications we are pursuing, and our product candidates.

These forward-looking statements are based on ACELYRIN's current plans, objectives and projections, and are inherently subject to risks and uncertainties that may cause our actual results to differ materially and adversely from those anticipated in such forward-looking statements. Such risks and uncertainties include, without limitation, those associated with the successful completion of development and regulatory activities with respect to our product candidates; the timing and results of our clinical trials, including the potential that future results could differ adversely from prior results, where applicable; our ability to timely secure adequate supply of our product candidates; sufficient funding; legal proceedings and the outcome thereof; competitive risks; market volatility; macroeconomic conditions and other risks and uncertainties affecting ACELYRIN including those described from time to time under the heading "Risk Factors" and elsewhere in our current and future periodic and other reports filed with the Securities and Exchange Commission ("SEC"), including our most recent Quarterly Report on Form 10-Q for the quarter ended September 30, 2023. These filings are available on the SEC's website www.sec.gov. In addition, new risks may occur at any time, and we anticipate that subsequent developments could cause our views to change. Forward-looking statements herein are made of the date of this presentation, and ACELYRIN undertakes no duty to update them in the event of new information, future developments, or otherwise, except as required under applicable law. Any reader of this presentation is cautioned not to place undue reliance on these forward-looking statements.

Izokibep is currently under clinical investigation, and no representation is made as of the safety or efficacy of our product candidates.

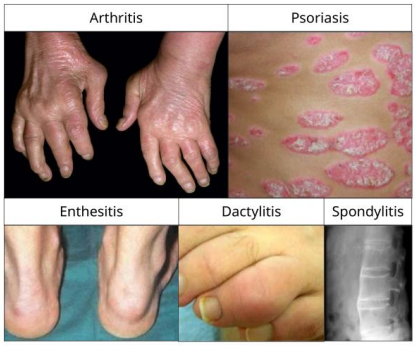
In addition to our own internal research, this presentation contains information related to or based on studies and other data obtained from third-party sources. While we believe these third-party sources to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness thereof. In addition, market data (e.g., market size) involves a number of projections, assumptions and estimates of our future performance and future performance of the markets in which we operate. There can be no guarantee of the accuracy or reliability thereof, as they are necessarily subject to a high degree of uncertainty and risk.

The information in this presentation is as of the date of this presentation, and is subject to change without notice.

Izokibep PsA

PsA Is A Disease With Multiple Manifestations

Addressing Totality Of Manifestations Is Necessary To Achieve Disease Control & Restore Quality of Life



- Psoriatic arthritis (PsA) is **a chronic, inflammatory disease with multiple clinical manifestations** including arthritis, psoriasis, enthesitis (inflammation of dense, non-vascular tissues that connect ligaments and tendons to bone), spondylitis, and dactylitis
- **~1.6M PsA patients in the U.S.**
- Among moderate-to-severe PsA patients, **over a third fail non-biologic therapy**
- **More complete and faster resolution of disease symptoms** manifesting in dense tissues (e.g., enthesitis) remain an unmet need
- **Addressing totality of manifestations is the goal** for patients

Izokibep PsA

Positive Results For Izokibep Global Phase 2b/3 In PsA

Positive topline results

- Study met primary endpoint of ACR50 at 16 weeks with high statistical significance
- Significant, multidomain responses achieved for the high hurdles of ACR70, PASI90, PASI100 and MDA
- Improvement in magnitude of responses relative to Phase 2 notable given higher burden of disease in Phase 2b/3
- Expected to be the first of two registrational trials in psoriatic arthritis; 160mg Q2W appears to be optimal dose

Differentiated profile

- Izokibep IL-17A inhibition alone achieves rapid improvement in resolution across manifestations of disease
- Pre-specified analyses support the potential for differentiation in enthesitis resolution
- Higher clinical responses than reported by the IL-17A agents
- Results comparable to those reported by the IL-17A&F agents but without the associated safety liabilities

Deep and durable responses

- Robust clinical responses in high hurdle composite endpoints (ACR50/PASI100 and MDA)
- No safety limitation to long term treatment seen to date
- Longer duration of therapy has previously demonstrated the potential for even further improvements over time

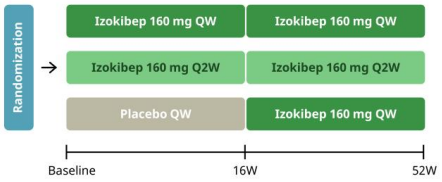
Izokibep PsA

Phase 2b/3 Evaluating Izokibep In PsA

Global Study Across 40 U.S. & 31 International Sites

Screening/ Eligibility

- Moderate-Active PsA (CASPAR criteria)
- > 3 TJC68 and > 3 SJC66
- RF and anti-CCP negative at screening
- Previous failure to NSAID or csDMARD or TNFi



Efficacy Endpoints

Primary & secondary endpoints, all week 16

- ACR50 (primary)
- PASI90
- Resolution of enthesitis (LEI=0)
- MDA
- ACR20
- PsAID response
- HAQ-DI change from baseline

Safety Endpoints

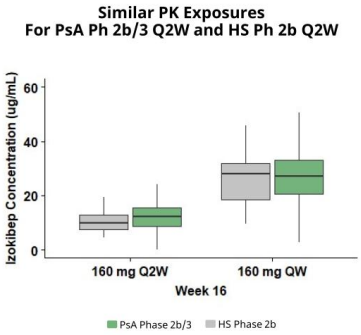
All secondary endpoints

- TEAEs, events of interest, and SAEs
- Laboratory values and vital signs at collected timepoints
- Treatment-emergent ADAs

Note: A fourth trial arm evaluating izokibep at 80 mg Q4W (equivalent to ~20 mg Q2W) was also included in study design to enable dose modeling but not shown here due to small sample size, n=8
CASPAR, ClASsification criteria for Psoriatic Arthritis; **QW**, Every Week; **Q2W**, Every Two Weeks; ; **SJC/66**, swollen joint count, assessing 66 joints; **TJC/68**, tender joint count, assessing 68 joints; **RF**, Rheumatoid Factor; **CCP**, Cyclic Citrullinated Peptide; **NSAID**, non-steroidal anti-inflammatory drugs; **csDMARD**, conventional synthetic disease modifying anti-rheumatic drug; **TNFi**, TNF inhibitor; **ACR50**, ≥50% improvement based on American College of Rheumatology criteria; **PASI90**, ≥90% improvement based on Psoriasis Area and Severity Index; **LEI**, Leeds Enthesitis Index; **MDA**, minimal disease activity; **ACR20**, ≥50% improvement based on American College of Rheumatology criteria; **PsAID**, PsA Impact of Disease; **HAQ-DI**, Health Assessment Questionnaire Disability Index; **TEAE**, treatment-emergent adverse event; **SAE**, serious adverse event; **ADA**, anti-drug antibodies

Izokibep PsA

160mg Q2W PsA PK Exposure Comparable To 160mg Q2W HS PK



- All patients received correct aggregate amount of drug and placebo
- PK samples collected at every visit demonstrated:
  - 160mg Q2W PsA PK Exposure Comparable to 160mg Q2W HS PK
  - 160 mg Q2W PK is much lower than 160 mg QW as expected per dose level
  - Low overlap provides confidence in interpretability

PK, pharmacokinetic; HS, Hidradenitis Suppurativa

Izokibep PsA

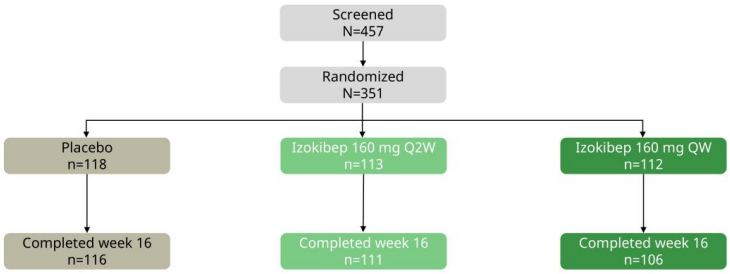
Patient Demographics And Baseline Characteristics

	Placebo n=118	Izokibep 160 mg Q2W n=113	Izokibep 160 mg QW n=112
Age, mean (SD), years	52.6 (11.7)	49.5 (13.3)	51.8 (12.2)
Male, n (%)	51 (43.2)	67 (59.3)	64 (57.1)
White, n (%)	110 (93.2)	108 (95.6)	109 (97.3)
BMI, mean (SD), kg/m^2	29.7 (6.0)	30.5 (6.6)	29.1 (5.9)
PsO, n (%)	106 (89.8)	105 (92.9)	103 (92.0)
PsA duration, mean (SD), years	7.3 (7.0)	6.5 (7.0)	7.2 (8.2)
Any csDMARD, %	45.8	48.7	52.7
Prior TNFi, %	23.7	21.2	24.1
TJC/68, mean (SD)	16.4 (12.4)	16.4 (13.0)	16.8 (13.0)
SJC/66, mean (SD)	9.3 (6.9)	8.1 (5.8)	9.3 (6.9)
DAPSA, mean (SD)[b]	38.3 (18.2)	37.3 (18.1)	39.4 (17.8)
LEI enthesitis, %/LEI, mean[a] (SD)	63.6 / 2.9 (1.6)	60.2 / 2.8 (1.7)	58.9 / 2.9 (1.6)
SPARCC enthesitis, %/SPARCC, mean[a] (SD)	66.9 / 5.5 (3.7)	70.8 / 5.0 (3.9)	66.1 / 5.0 (3.9)
PsO BSA ≥3%, %/PASI, mean[a] (SD)	50.8 / 6.7 (5.6)	56.6 / 6.9 (6.5)	52.7 / 8.4 (8.8)
PsAID, mean (SD)	5.2 (2.1)	5.5 (2.0)	5.6 (1.9)
HAQ-DI, mean (SD)	1.0 (0.6)	0.9 (0.6)	1.0 (0.6)

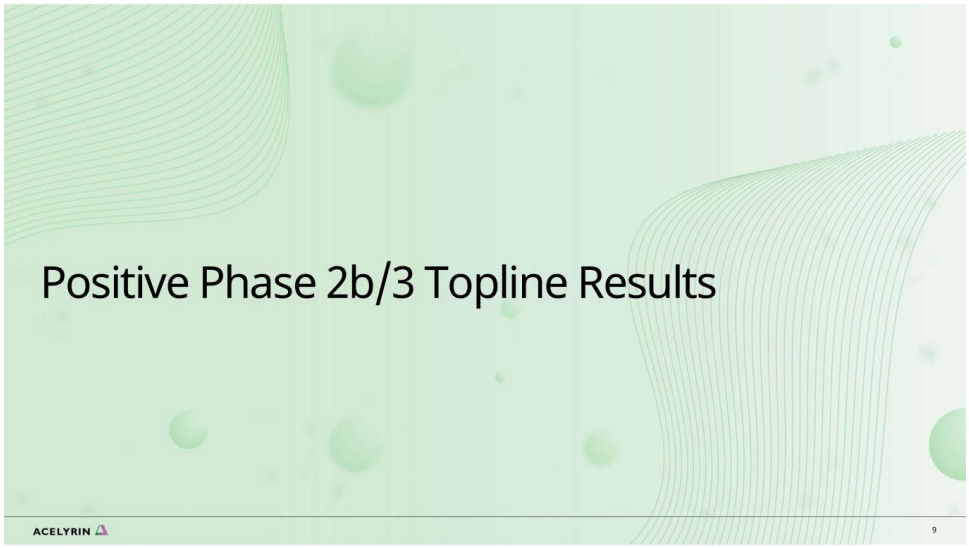
Full analysis set. [a]Mean (SD) of subpopulation (LEI >0, SPARCC >0, PsO-BSA ≥3% at baseline).
SD, standard deviation; **BMI**, body mass index; **PsO**, psoriasis; **BSA**, body surface area; **csDMARD**, conventional synthetic disease-modifying anti-rheumatic drug; **DAPSA**, Disease Activity in PsA; **SPARCC**, Spondyloarthritis Research Consortium of Canada; PASI, **PASI90**,Psoriasis Area and Severity Index; **PsAID**, PsA Impact of Disease

Izokibep PsA

Patient Disposition Through Week 16



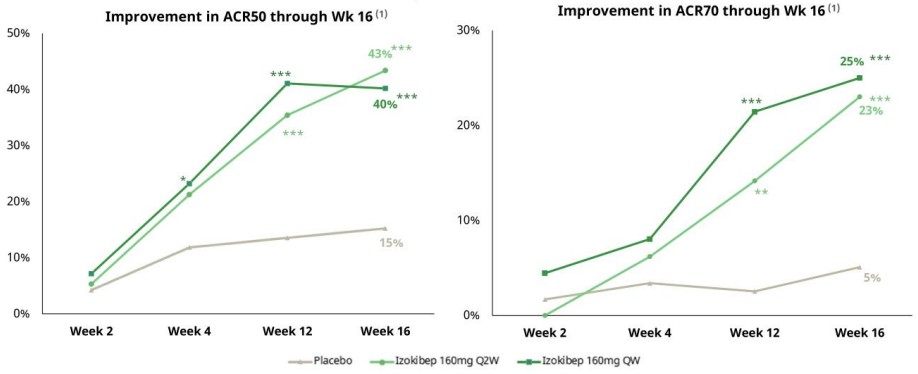
Note: A fourth trial arm evaluating izokibep at 80 mg Q4W (equivalent to ~20 mg Q2W) was also included in study design to enable dose modeling but not shown here due to small sample size, n = 8
There were two patients that discontinued treatment on the Placebo arm, two patients that discontinued treatment on the IZO 160mg Q2W arm, and six patients that discontinued treatment on the IZO 160mg QW arm.


Positive Phase 2b/3 Topline Results
ACELYRIN
9

Izokibep PsA

ACR50 and ACR70 at Primary Endpoint

Registrational Endpoint Of ACR50 In Joints Showed Rapid And Robust Improvement;
Achievement Of ACR70 Demonstrates Even Deeper Levels Of Response



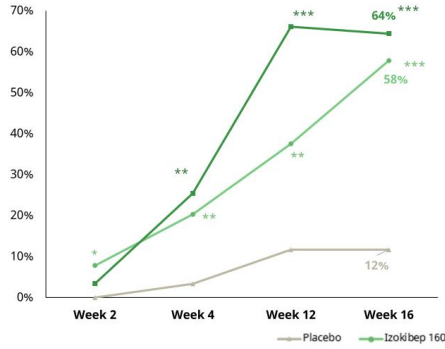
(1) Week 16 data are from the full analysis set using prespecified non-responder imputation (NRI). *P<0.05; **P<0.01; ***P<0.0001 (stratified test of risk differences)

Izokibep PsA

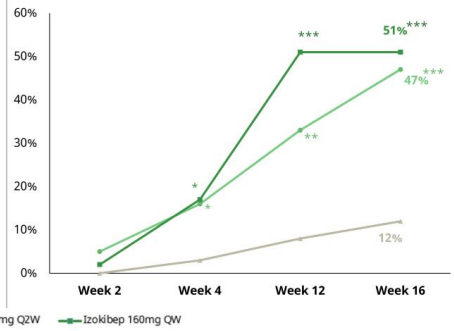
PASI90 and PASI100 at Primary Endpoint

Rapid and Robust Achievement of All-Clear Skin

Improvement in PASI90 through Wk 16 (1)



Improvement in PASI100 through Wk 16 (1)



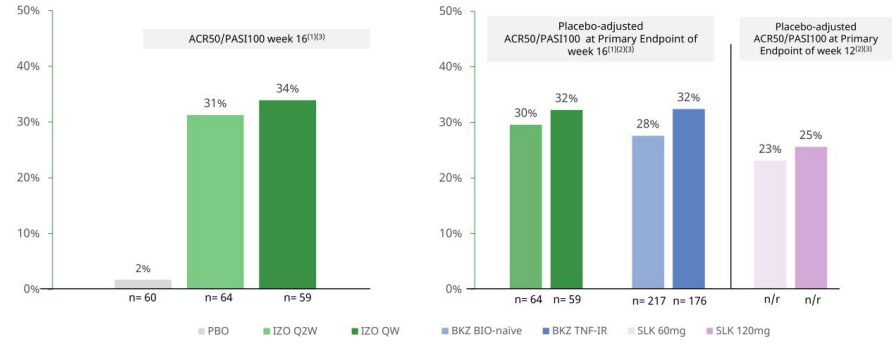
Placebo — Izokibep 160mg Q2W — Izokibep 160mg QW

(1) Week 16 data are from the full analysis set using prespecified non-responder imputation (NRI). *P<0.05; **P<0.01; ***P<0.0001 (stratified test of risk differences)

Izokibep PsA

ACR50 and PASI100 Composite at Primary Endpoint

Robust Composite Responses of Joint and Skin Without The Safety Liabilities of IL-17 A&F Inhibition

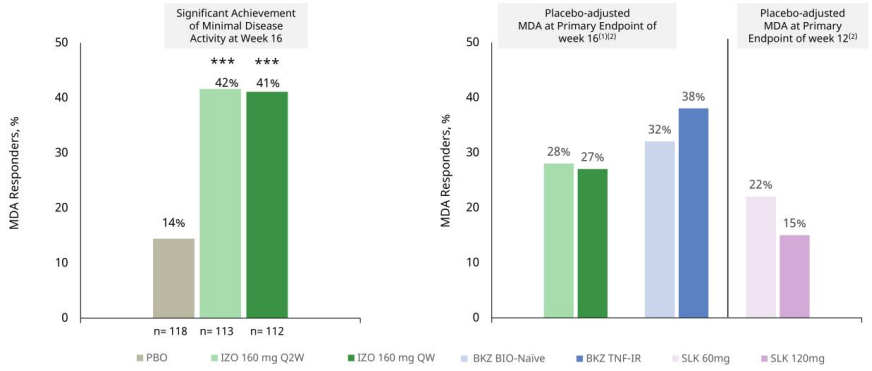


(1) Week 16 data are from the full analysis set using prespecified non-responder imputation (NRI).
(2) Comparisons across trials, with inherent limitations. Not head-to-head trials. Bimekizumab and Sonelokimab data from public source: Ritchlin CT, Coates LC, McInnes IB, et al. Ann Rheum Dis 2023;82:1404-1414 BE OPTIMAL; Merola et al Lancet 2023 401: 38-48 BE COMPLETE. Moonlake R&D day November 6, 2023 ARGO Part A week 12.
(3) In patients with psoriasis involving at least 3% body surface area at baseline

Izokibep PsA

Minimal Disease Activity at Primary Endpoint

Improving The Totality of Manifestations Is The Goal for Minimizing Disease Activity for Patients

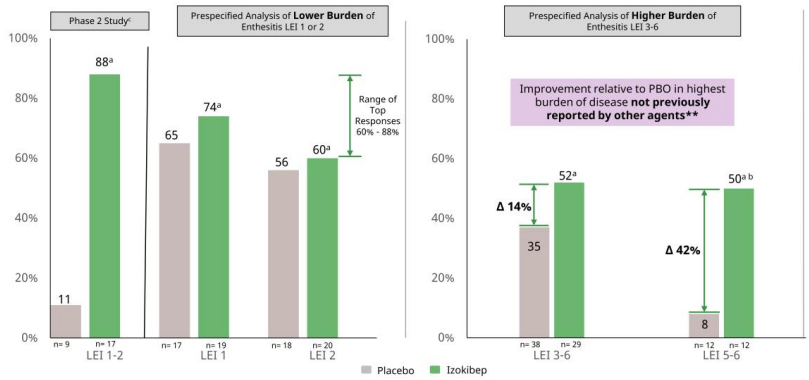


(1) Week 16 data are from the full analysis set using prespecified non-responder imputation (NRI). }***P<0.0001 (stratified test of risk differences)
(2) Comparisons across trials, with inherent limitations. Not head-to-head trials. Bimekizumab and Sonelokimab data from public source: Ritchlin CT, Coates LC, McInnes IB, et al. Ann Rheum Dis 2023;82:1404–1414 BE OPTIMAL; Merola et al Lancet 2023 401: 38–48 BE COMPLETE. Moonlake R&D day November 6, 2023 ARGO Part A week 12.

Izokibep PsA

Izokibep Demonstrated Resolution Despite Highest Burden Of Enthesitis*

Consistent High Magnitude Enthesitis Responses In Phase 2-comparable Population Were Observed



*Enthesitis resolution overall in Phase 2b/3 was not statistically significant due to high placebo response: PBO: 47% Q2W: 56% QW: 45%.
[a] Represents best responses across doses – observed data. For 2b/3 LEI 1 = 160mg Q2W, LEI 2 = 160mg QW, LEI 3-6 = 160mg Q2W, LEI 5-6 = 160mg Q2W; For 2b LEI = 80mg Q2W; [b] Post Hoc Analysis [c] LEI enthesitis resolution in LEI 1-2 at baseline, post hoc analysis, as observed data
** Coates et al. Arthritis Research & Therapy (2019) 21:266 - Secukinumab demonstrated no difference between placebo and active in higher burden enthesitis subgroups. Data for Bimekizumab not available.

Izokibep PsA

Summary Of Safety Through Week 16

n (%)	Placebo n=118	Izokibep 160 mg Q2W n=113	Izokibep 160 mg QW n=112
Any TEAEs	48 (40.7)	75 (66.4)	81 (72.3)
Serious	1 (0.8)	2 (1.8)	3 (2.7)
TEAEs leading to study discontinuation	0	5 (4.4)	8 (7.1)
General disorders and administration site conditions leading to study discontinuation[a]	0	1 (0.9)	5 (4.5)
Deaths	0	0	0
Preferred Term (≥5%)[b]			
Injection site erythema	0	44 (38.9)	60 (53.6)
Injection site pruritus	1 (0.8)	19 (16.8)	24 (21.4)
Injection site swelling	0	8 (7.1)	9 (8.0)
Injection site pain	1 (0.8)	6 (5.3)	7 (6.3)
Upper respiratory tract infection	4 (3.4)	3 (2.7)	6 (5.4)
Injection site rash	0	7 (6.2)	2 (1.8)
Injection site reaction	1 (0.8)	2 (1.8)	6 (5.4)
Fatigue	0	7 (6.2)	2 (1.8)
Any TEAEs of special interest[c]	2 (1.7)	5 (4.4)	6 (5.4)
Oral candidiasis	0	0	1 (0.9)
Skin candidiasis	1 (0.8)	0	0
Colitis ulcerative	0	1 (0.9)	1 (0.9)

Safety Set. [a] Include Injection site reaction, erythema, and pruritus. [b] Most commonly reported TEAEs occurring in ≥5.0% of patients in any group to week 16. [c] Only select TEAEs of special interest are shown.

Izokibep PsA

Positive Results For Izokibep Global Phase 2b/3 In PsA

Positive topline results

- Study met primary endpoint of ACR50 at 16 weeks with high statistical significance
- Significant, multidomain responses achieved for the high hurdles of ACR70, PASI90, PASI100 and MDA
- Improvement in magnitude of responses relative to Phase 2 notable given higher burden of disease in Phase 2b/3
- Expected to be the first of two registrational trials in psoriatic arthritis; 160mg Q2W appears to be optimal dose

Differentiated profile

- Izokibep IL-17A inhibition alone achieves rapid improvement in resolution across manifestations of disease
- Pre-specified analyses support the potential for differentiation in enthesitis resolution
- Higher clinical responses than reported by the IL-17A agents
- Results comparable to those reported by the IL-17A&F agents but without the associated safety liabilities

Deep and durable responses

- Robust clinical responses in high hurdle composite endpoints (ACR50/PASI100 and MDA)
- No safety limitation to long term treatment seen to date
- Longer duration of therapy has previously demonstrated the potential for even further improvements over time

ACELYRIN

Izokibep

Hidradenitis Suppurativa

Phase 2b Long Term 32-Week Data

March 11, 2024

Forward Looking Statements And Disclaimer

This presentation contains statements that are not of historical facts, considered forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include, but are not limited to, statements about the therapeutic potential of our product candidate izokibep, including with respect to izokibep's ability to offer clinically meaningful, differentiated benefits for patients, and that longer-term treatment with izokibep may provide for deepening of response over time without the important safety considerations emerging for agents targeting sub-units beyond IL-17A; the long-term safety profile of izokibep; the timing and availability of data from clinical trials; the potential market size and size of the potential patient populations for certain indications we are pursuing, and other statements that are not historical fact. These forward-looking statements are based on ACELYRIN's current plans, objectives and projections, and are inherently subject to risks and uncertainties that may cause our actual results to differ materially and adversely from those anticipated in such forward-looking statements. Such risks and uncertainties include, without limitation, those associated with the successful completion of development and regulatory activities with respect to our product candidates; the timing and results of our clinical trials, including the potential that future results could differ adversely from prior results, where applicable; our ability to timely secure adequate supply of our product candidates; sufficient funding; legal proceedings and the outcome thereof; competitive risks; market volatility; macroeconomic conditions and other risks and uncertainties affecting ACELYRIN including those described from time to time under the heading "Risk Factors" and elsewhere in our current and future periodic and other reports filed with the Securities and Exchange Commission ("SEC"), including our most recent Quarterly Report on Form 10-Q for the quarter ended September 30, 2023. These filings are available on the SEC's website www.sec.gov. In addition, new risks may occur at any time, and we anticipate that subsequent developments could cause our views to change. Forward-looking statements herein are made of the date of this presentation, and ACELYRIN undertakes no duty to update them in the event of new information, future developments, or otherwise, except as required under applicable law. Any reader of this presentation is cautioned not to place undue reliance on these forward-looking statements.

Izokibep is currently under clinical investigation, and no representation is made as of the safety or efficacy of our product candidates.

In addition to our own internal research, this presentation contains information related to or based on studies and other data obtained from third-party sources. While we believe these third-party sources to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness thereof. In addition, market data (e.g., market size) involves a number of projections, assumptions and estimates of our future performance and future performance of the markets in which we operate. There can be no guarantee of the accuracy or reliability thereof, as they are necessarily subject to a high degree of uncertainty and risk.

The information in this presentation is as of the date of this presentation, and is subject to change without notice.

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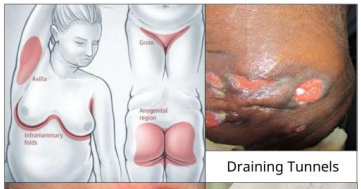
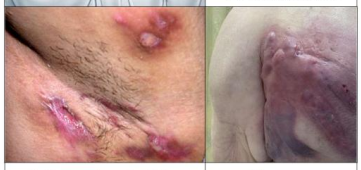
Izokibep HS

Hidradenitis Suppurativa Is A Devastating Disease Where Exposures Matter

High Potency And Small Size of Izokibep Could Improve Patient Outcomes



Draining Tunnels



Inflammatory Nodules

Abscesses

- Hidradenitis Suppurativa (HS) is a chronic Inflammatory disease characterized by skin abscesses, inflammatory nodules, fistulae, scar tissue, malodor and pain, often resulting in permanent disfigurement and social stigma negatively impacting quality of life
- **~370,000 HS patients in the U.S.**; approximately half of patients are considered to have moderate-to-severe disease
- Diagnosis rates are estimated to **increase 1-3% annually**
- **Current therapy options are limited**; more complete and faster resolution of disease symptoms remain an unmet need for patients

Izokibep HS

HS 32-Week Data Demonstrate Sustained & Deepening Responses

Improvements across manifestations of disease

- Rapid, dose ordered improvement across manifestations through week 32
- HiSCR100 consistently achieved in about 1/3 of patients on 160mg QW including in pbo switch from week 16
- Consistent improvement in resolution of abscesses, nodules, and draining tunnels
- Robust reduction in skin pain and remarkable improvement in overall quality of life

Differentiated profile

- Magnitude and depth of responses support hypothesis that the characteristics of izokibep – including small size and highly potent inhibition of IL-17A alone – could deliver differentiated clinical benefit
- Resolution of abscesses and nodules (HiSCR100) achieved more rapidly than the other IL-17A agents and than the IL-17A&F agents without the associated safety liabilities such as dose-dependent increased risk of fungal infection, for which HS patients are predisposed

Path forward

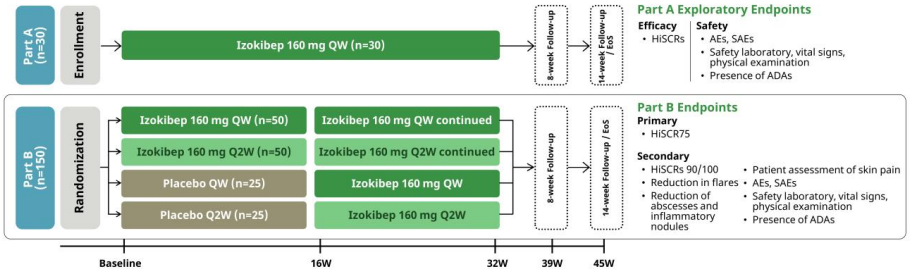
- A phase 3 trial in HS is ongoing and topline data is expected by end of 2024
- We are planning a confirmatory phase 3 trial of approximately 400 patients to address FDA guidance

Izokibep HS

Izokibep Phase 2b Hidradenitis Suppurativa Trial

Screening/ Eligibility

- Moderate-to-severe HS
- Diagnosis of HS for ≥ 1 year prior to first dose
- HS lesions present in ≥ 2 distinct anatomic areas, one of which is Hurley Stage II or III
- Minimum abscess/ nodule (AN) count of 3 (Part A) or 5 (Part B)
- Inadequate response, intolerance or contraindication to oral antibiotics



Part A Exploratory Endpoints

Efficacy
- HiSCRs

Safety
- AEs, SAEs
- Safety laboratory, vital signs, physical examination
- Presence of ADAs

Part B Endpoints

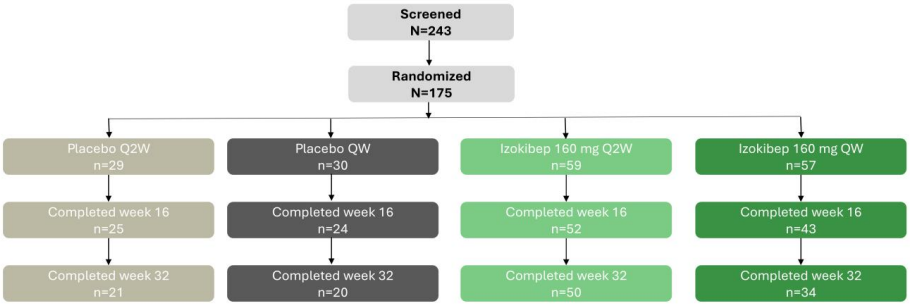
Primary
- HiSCR75

Secondary
- HiSCRs 90/100
- Reduction in flares
- Reduction of abscesses and inflammatory nodules
- Patient assessment of skin pain
- AEs, SAEs
- Safety laboratory, vital signs, physical examination
- Presence of ADAs

QW, once every week; **Q2W**, once every 2 weeks; **ADA**, anti-drug antibodies; **AE**, adverse event; **SAE**, serious adverse event; **AN**, total abscess and inflammatory nodule count; **EoS**, end of study; **HiSCR**, Hidradenitis Suppurativa Clinical Response; **HiSCR75**, ≥75% reduction in total abscess and inflammatory nodule (AN) count; **HiSCR90**, ≥90% reduction in total abscess and inflammatory nodule (AN) count; **HiSCR100**, 100% reduction in total abscess and inflammatory nodule (AN) count

Izokibep HS

Patient Disposition Through Week 32



Week 16 – Week 32 Summary of Safety*

- Izokibep was well-tolerated with a favorable safety profile consistent with previous experience and the IL-17A class
- There were no deaths and majority of adverse events (AE) were mild-to-moderate in each arm
- There were 5 discontinuations due to AE, 2 in placebo QW cross-over arm and 3 in QW arm
- There were 2 serious adverse events (SAE) reported related to treatment and 3 SAEs that were not related to treatment

Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented as observed. *Safety follow up visits remain ongoing.

Izokibep HS

Patient Demographics And Baseline Clinical Characteristics

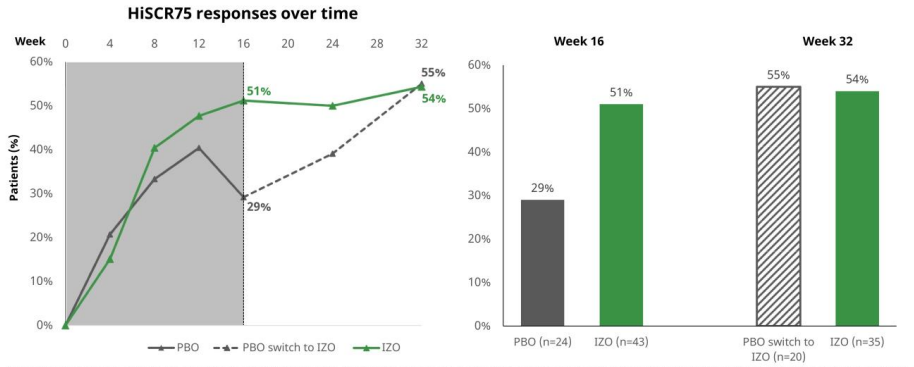
	Placebo n=59	Izokibep 160 mg Q2W n=59	Izokibep 160 mg QW n=57
Age, years, mean (SD)	37.2 (11.5)	40.3 (10.0)	35.3 (11.7)
Black, n (%)	9 (15.3)	6 (10.2)	7 (12.3)
Female, n (%)	40 (67.8)	36 (61.0)	39 (68.4)
Disease duration, years, mean (SD)	10.8 (9.4)	9.4 (7.1)	10.1 (7.0)
AN count, mean (SD)	9.0 (5.2)	9.3 (6.7)	11.2 (8.8)
Abscess count, mean (SD)	1.8 (2.1)	1.8 (4.8)	1.8 (3.5)
Inflammatory nodule count, mean (SD)	7.2 (5.1)	7.5 (4.1)	9.4 (7.9)
Draining tunnels, mean (SD)	3.2 (4.0)	2.5 (3.2)	2.8 (3.6)
≥1 draining tunnel, n (%)	44 (74.6)	44 (74.6)	39 (68.4)
≥1 draining tunnel, mean (SD)	4.3 (4.1)	3.4 (3.2)	4.1 (3.7)
DLQI, mean (SD)	12.1 (7.5)	12.8 (7.3)	11.1 (7.1)
Hurley stage, n (%)			
Stage II	34 (57.6)	36 (61.0)	35 (61.4)
Stage III	25 (42.4)	23 (39.0)	22 (38.6)
Pain NRS baseline score, mean (SD)			
Score ≥4	6.5 (1.6)	6.6 (1.5)	6.6 (1.5)

Source: Data are from the full analysis set.
SD, standard deviation; **NR**, not reported; **DLQI**, Dermatology Life Quality Index; **NRS**, numeric rating scale

Izokibep HS

HiSCR75 Response With 160 mg QW Sustained Through Week 32

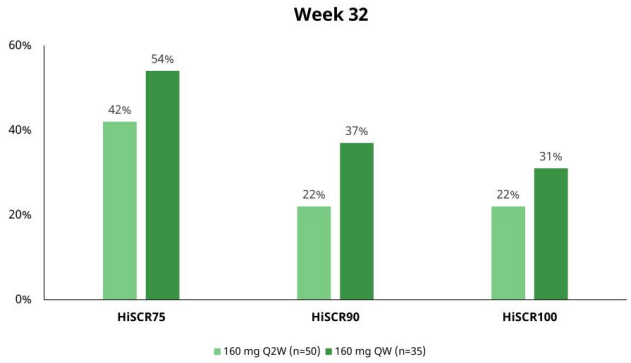
Placebo Switch Attained Clinically Meaningful Comparable Responses



Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented as observed. IZO week 16 data is also on an as-observed basis and differs from, and is not a substitute for, the week 16 topline results in the NRI primary analysis we announced in Q3 2023.
PBO, placebo; **IZO**, izokibep

Izokibep HS

HiSCR Responses Were Robust and Dose Ordered

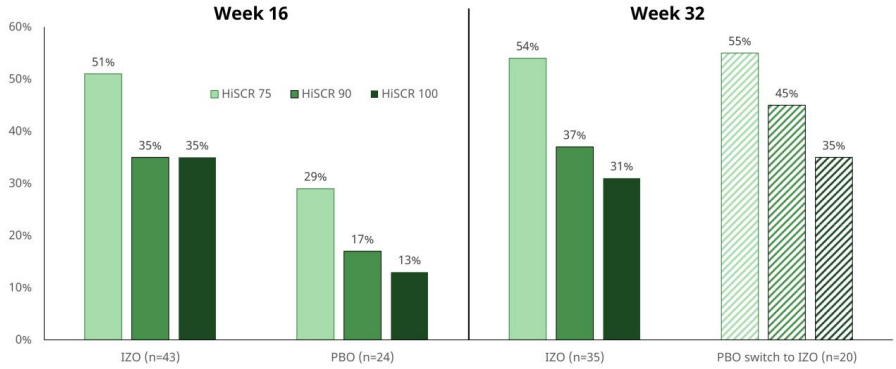


Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented as observed

Izokibep HS

High Order HiSCR Responses Sustained Through Week 32

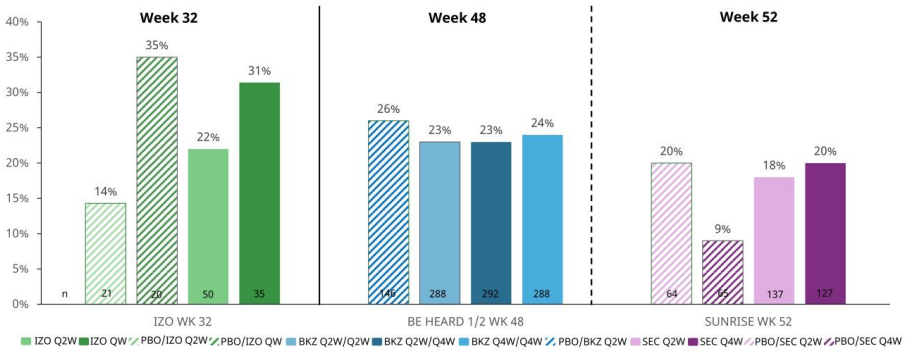
Rapid Achievement of HiSCR100 in ~1/3 of Patients On 160 mg QW, Including Placebo Switch To Active



Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented as observed. IZO week 16 data is also on an as-observed basis and differs from, and is not a substitute for, the week 16 topline results in the NRI primary analysis we announced in Q3 2023.

Izokibep HS

Izokibep Reaches Magnitudes Of HiSCR100 Other Agents Have Not Achieved Despite Longer Exposures



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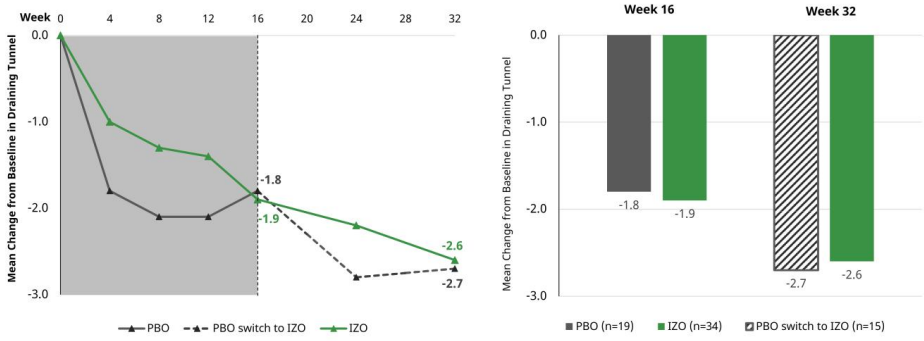
BKZ, bimekizumab; **SEC,** secukinumab; **Q4W,** every 4 weeks; **PBO/IZO**, placebo switch to izokibep; **PBO/BKZ**, placebo switch to bimekizumab; **PBO/SEC**, placebo switch to secukinumab
Comparisons across trials, with inherent limitations. Not head-to-head trials. BKZ data from Zoubouils CC, et al. EADV 2023, FC03.5 (modified-NRI). SEC data from EADV 2023 Ingram JR, et al. FC03.1 (MI data for SEC week 16 and as observed for week 52). As observed data for IZO.

Izokibep HS

Draining Tunnel Resolution With 160 mg QW Continued To Improve Through Week 32

(Patients With ≥1 Draining Tunnel at Baseline)

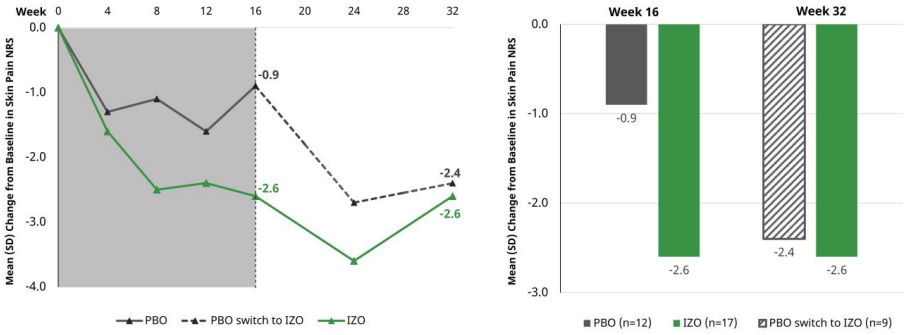


Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented on an as observed basis.
DT, draining tunnels

Izokibep HS

Reductions In Skin Pain With 160 mg QW Sustained Through Week 32

(Patients With NRS ≥4 at Baseline)

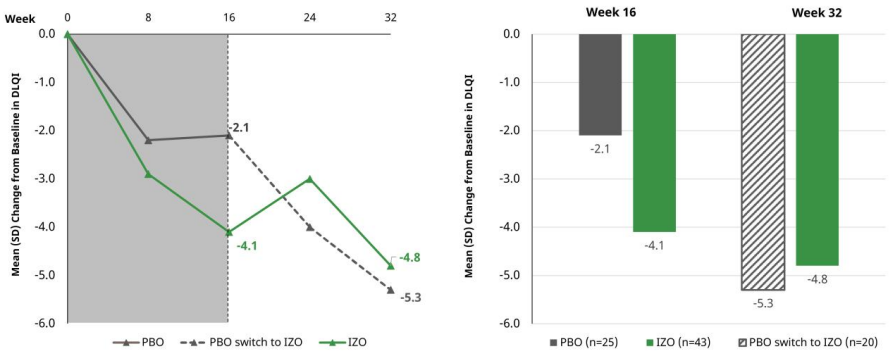


Source: Results from an open label extension and include all subjects through week 32. Data are from the full analysis set and presented on an as observed basis.

Izokibep HS

DLQI With 160 mg QW Continued To Improve Through Week 32

Responses Across Manifestations Drove Clinically Meaningful Improvement In QOL



Source: Results from an open label extension and include all subjects through week 32 Data are from the full analysis set and presented as observed.

Izokibep HS

HS 32-Week Data Demonstrate Sustained & Deepening Responses

Improvements across manifestations of disease

- Rapid, dose ordered improvement across manifestations through week 32
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- Robust reduction in skin pain and remarkable improvement in overall quality of life

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