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): April 19, 2023

MOONLAKE IMMUNOTHERAPEUTICS
(Exact name of registrant as specified in its charter)

Cayman Islands	**001-39630**	**98-1711963**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

Dorfstrasse 29 Zug, Switzerland	**6300**
(Address of principal executive offices)	(Zip Code)

41 415108022
(Registrant's telephone number, including area code)

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 Securities Exchange Act of 1934:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Class A ordinary share, par value $0.0001 per share	MLTX	The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company 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 April 19, 2023, MoonLake Immunotherapeutics (the "Company") will be posting to its website an investor presentation to be used in the Company's April 19, 2023 Capital Markets Day event, including information regarding the Company's financial position, near-term catalysts and publication roadmap. A copy of the presentation is included with this Form 8-K for convenience and attached hereto as Exhibit 99.1. The investor presentation and replays of the webcast will be available on the Company's website at https://ir.moonlaketx.com.

The information in this current report on Form 8-K and the exhibit attached hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filing, unless specifically so incorporated.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	**Description**
99.1	MoonLake Immunotherapeutics Capital Markets Day Presentation dated April 19, 2023
104	Cover Page Interactive Data File-the cover page XBRL tags are embedded within the Inline XBRL document

Signature

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

MoonLake Immunotherapeutics

Date: April 19, 2023

By: /s/ Matthias Bodenstedt
Name: Matthias Bodenstedt
Title: Chief Financial Officer


MoonLake
MoonLake Immunotherapeutics
Capital Markets Day
New York, NASDAQ
April 19th 2023
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W: moonlaketx.com | E: info@moonlaketx.com

Disclaimer

MoonLake

Forward Looking Statements

Certain statements in this presentation may constitute "forward-looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements include, but are not limited to, statements regarding our expectations, hopes, beliefs, intentions or strategies regarding the future including, without limitation, statements regarding: plans for preclinical studies, clinical trials and research and development programs; the anticipated timing of the results from those studies and trials; and expectations regarding the time period over which our capital resources will be sufficient to fund our anticipated operations. In addition, any statements that refer to projections, forecasts, or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words "anticipate", "believe", continue", "could", "estimate", "expect", "intend", "may", "might", "plan", "possible", "potential", "predict", "project", "should", " strive", "would" and similar expressions may identify forward-looking statements, but the absence of these words does not mean that such statement is not forward looking. Forward-looking statements are based on current expectations and assumptions that, while we and our management consider reasonable, as the case may be, are inherently uncertain. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Factors that may cause actual results to differ materially from current expectations include, but are not limited to, various factors beyond management's control including general economic conditions and other risks, uncertainties and factors set forth in the section entitled "Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements" in our Annual Report on Form 10-K that was filed with the U.S. Securities and Exchange Commission (the "SEC") on March 20, 2023 (the "Proxy Statement"), as well as factors associated with companies, such as MoonLake Immunotherapeutics, that operate in the biopharma industry. Nothing in this presentation should be regarded as a representation by any person that the forward-looking statements set forth herein will be achieved or that any of the contemplated results of such forward-looking statements will be achieved. You should not place undue reliance on forward-looking statements in this presentation, which speak only as of the date they are made and are qualified in their entirety by reference to the cautionary statements herein. We neither undertake nor accept any duty to release publicly any updates or revisions to any forward-looking statements to reflect any change in our expectations or in the events, conditions or circumstances on which any such statement is based. This presentation does not purport to summarize all of the conditions, risks and other attributes of MoonLake Immunotherapeutics.

Industry and Market Data

Certain information contained in this presentation relates to or is based on studies, publications, surveys and our own internal estimates and research. In this presentation, we rely on, and refer to, publicly available information and statistics regarding market participants in the sector in which we compete and other industry data. Any comparison of us to any other entity assumes the reliability of the information available to us. We obtained this information and statistics from third-party sources, including reports by market research firms and company filings. In addition, all of the market data included in this presentation involve a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Finally, while we believe our internal research is reliable, such research has not been verified by any independent source and we have not independently verified the information.

Trademarks

This presentation may contain trademarks, service marks, trade names and copyrights of other companies, which are the property of their respective owners. Solely for convenience, some of the trademarks, service marks, trade names and copyrights referred to in this presentation may be listed without the TM, SM © or ® symbols, but we will assert, to the fullest extent under applicable law, the rights of the applicable owners, if any, to these trademarks, service marks, trade names and copyrights.

Welcome to our Capital Markets Day

MoonLake

Cowen conference (March 6-8) · AAD (March 18) · 10-K filing (March 20) · HCW & Guggenheim meetings (Mar 30/Apr 5-6) · **Capital Markets Day (April 19)** · Kempen conference (April 25-26) · 10-Q + S3 filing (Mid- May) · EULAR (May 31-Jun 3) · **AGM** (Jun 7) · Jefferies conference (Jun 7-9) · **HS data R&D Day** (end Jun)

Date: April 19th, 2023
Time: 10:30-12:30 EDT
Location: The Astoria Hub, Convene, 151 West 42rd Street, New York *(Webcast also available)*

Topic	Sub-topics	Speaker	Timing
Intro	- Overview of MLTX and catalysts - Focus on HS: differentiation and market opportunity	Jorge Santos da Silva	20 mins
AAD Reflections & Treatment Landscape	- Recap of HS landscape & pipeline - Reflections on data released at AAD & remaining unmet needs - Reflections on HS study designs	Prof. Kenneth B. Gordon	30 mins
MoonLake R&D Update	- SLK positioning within the emerging HS treatment landscape - Clinical trial update for HS (and PsA) - Deep-dive on ML proprietary R&D	Prof. Kristian Reich	30 mins
Financial Update & Path Forward	- 10-K take aways & March 31st cash-cash runway - Path forward	Matthias Bodenstedt	10 mins
Q&A session			30 mins

Source: MoonLake Corporate

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Introduction

MoonLake

- **Founded in 2021** in Switzerland
- **Nanobody® technology** licensed in initial private round
- **Unique molecule with sonelokimab**, tri-specific IL-17A & IL-17F Nanobody® to elevate treatment in inflammation in a **$40bn+ market**
- **Public on Nasdaq** in April 2022, with a raise of gross proceeds of $150m
- **Nearly $200m raised** to date
- **Clinical phase company** – concluded phase 2 in psoriasis, additional phase 2 trials now, in HS ("MIRA") and PsA ("ARGO")
- Driven by a top-tier team, target is to unlock a **pipeline-in-a-product across large indications** from 2023 (>$3bn in HS & PsA alone)

Source: MoonLake Corporate

MoonLake is led and supported by a highly experienced group

MoonLake

Leadership team


Jorge Santos da Silva
(CEO, Founder, Board Director)


Prof. Kristian Reich
(CSO, Founder)


Matthias Bodenstedt
(CFO)


Nuala Brennan
(CCDO)


Oliver Daltrop
(CTO)

Plus, 25 FTE at MoonLake today

Board of Directors


Kara Lassen
(Roche)


Catherine Moukheibir
(e.g., Oxford Biomedica)


Simon Sturge – Chair
(e.g., Kymab, Merck)


Spike Loy
(BVF)


Andrew Phillips
(Cormorant)


Ramnik Xavier
(Harvard)

Investors

BVF PARTNERS L.P.

CORMORANT ASSET MANAGEMENT

SURVEYOR

Merck

BLACKROCK

Fidelity

RTW Investments

TCGX

T.RowePrice

AXA Investment Managers

POLAR CAPITAL

BRAIDWELL

TANG CAPITAL MANAGEMENT, LLC

Great Point Partners

ACUTA CAPITAL PARTNERS, LLC

TEKLA Capital Management LLC

B.A.M.

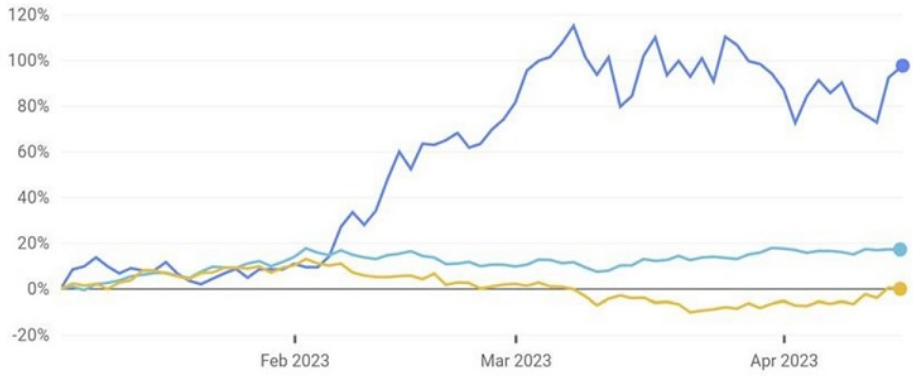
Note: Investors mentioned based on Schedule 13F filings for December 31, 2022 shareholdings

Source: MoonLake Corporate

Our share price has picked up as we move closer to data

MoonLake

Share price/index variation (%, YTD, to Apr 18th)



MLTX	$21.78	+$10.75	↑97.46%
Nasdaq Composite	12,153.41	+1,766.42	↑17.01%
Nasdaq XBI	$81.33	-$0.20	↓0.25%

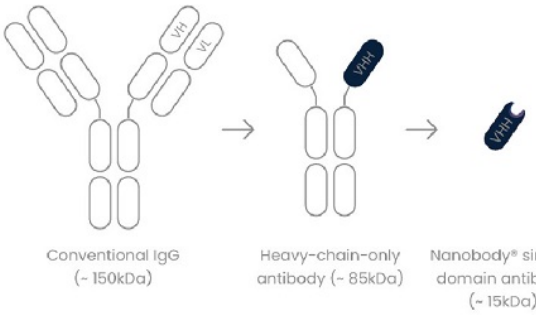
- **~100% YTD increase** (max over $25/share)
- **Volumes increased significantly**
- **Nine equity analysts now covering MLTX** (frequent dialogue ongoing with others)

Source: ML Finance

High interest in a differentiated molecule – Do you still Antibody?

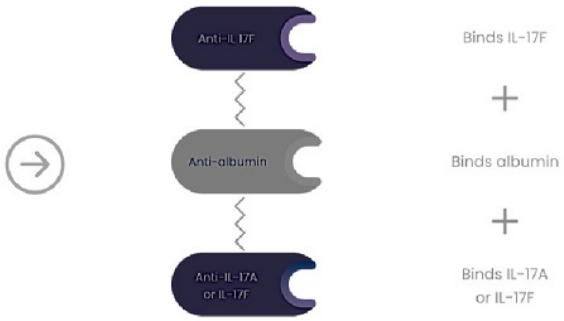
MoonLake

Nanobodies® are much smaller than traditional antibodies



Conventional IgG (~ 150kDa) | Heavy-chain-only antibody (~ 85kDa) | Nanobody® single-domain antibody (~ 15kDa)

They can be designed to have multiple and different binding domains



IL-17A & IL-17F

Sonelokimab is a ~40kDa humanized Nanobody® consisting of three VHH domains covalently linked by flexible spacers - around a quarter of the size of traditional antibodies

With 2 domains, it binds with high affinity to IL-17A and IL-17F – a third domain binds human albumin

Subcutaneous administration, Q4W

Source: MoonLake Research

It's all about the dimers

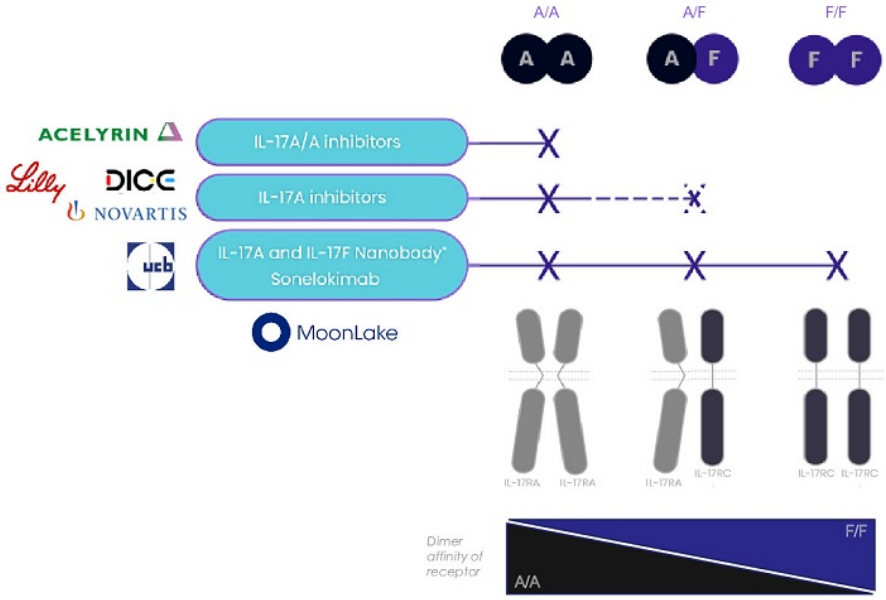
MoonLake

Illustrative

IL-17A and IL-17F function as **dimers** to drive inflammation, through activation of IL-17RA & RC receptor complexes

Different IL-17RA & RC chains combine to form complexes, and those have **different affinity for different dimers**[1,2]

Not all IL-17-targeting therapeutics **can inhibit** IL-17A/A, IL-17A/F and IL-17F/F dimers



1 Liu S, et al. Nat Commun. 2013;4:1888; 2 Goepfert A, et al. Immunity. 2020 Mar 17;52(3):499-512

Source: MoonLake Research

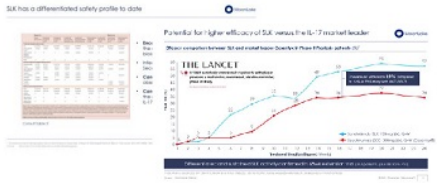
Sonelokimab has an established "next gen IL-17" profile by now

MoonLake

Phase 2 clinical data

THE LANCET

IL17A/F nanobody sonelokimab in patients with plaque psoriasis: a multicentre, randomised, placebo-controlled, phase 2b study



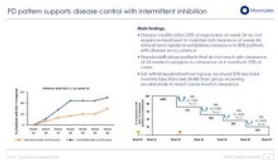
- **Leading efficacy** in Inflammation (PASI 100 for most patients)
- **IL-17F adds to IL-17A** inhibition (vs. Cosentyx)
- **Clean profile** following historical IL-17 safety

BJD British Journal of Dermatology
IMPROVING PATIENT OUTCOMES IN SKIN DISEASE WORLDWIDE

RESEARCH LETTER

Maintenance of response in moderate-to-severe psoriasis after withdrawal of the IL-17A and IL-17F nanobody sonelokimab – Is there a role for IL-17F in disease reoccurrence?

Kristian Reich, Eva Cullen, Mark Weinberg

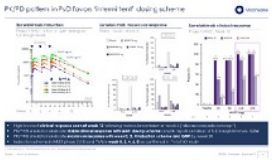


- **Duration of IL-17A & F** response over time
- **Long-term anti-inflammatory** effect of SLK even after withdrawal
- **Continued dosing benefit** in non-/slow responders

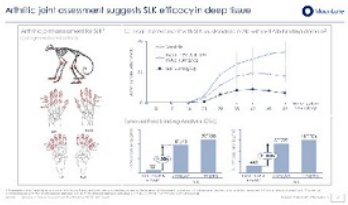
Phase 1 & Preclinical data

J Am Acad Dermatol
Volume 81, Number 1

A randomized, double-blind, placebo-controlled phase 1 study of multiple ascending doses of subcutaneous M1095, an anti–interleukin 17A/F nanobody, in moderate-to-severe psoriasis



- **PK determined** for all testing doses (incl. 120 and 240mg)
- Stable clinical response with **Q4W dosing**
- **Molecular remission** & high **clinical response** over time



- SLK better than mAb in **deep-tissue inflammation**
- SLK travels **into deep tissue more efficiently** than mAb
- SLK binds IL-17A and F in deep tissue **more efficiently** than mAb

Source: MoonLake

IL-17 F inhibition is differentiating across inflammatory diseases

MoonLake

	Trials	Ph 3 patients (n)	Leading MoA
 **HS**[1]	BE HEARD I & II	1,014	IL-17F inhibition doubles IL-17A-only inhibition & shows higher efficacy versus TNF on HiSCR75
 **PsA**[2]	BE COMPLETE, BE OPTIMAL	1,252	IL-17F & A inhibition shows best ACR50/PASI90 composite score, response in TNF-IR pts
 **AxSpA**[3]	BE MOBILE I & II	586	IL-17 F & A inhibition shows best ASAS40, incl. in TNF-IR pts
 **PsO**[4]	BE VIVID, BE READY, BE SURE, BE RADIANT	2,223	IL-17F inhibition brings 40%+ more pts to PASI100 than 17A-only, also superior to TNF

Only SLK and Bimekizumab inhibit IL-17A and F – *SLK has own differentiating features*

1 Late breaking session, Kimball et al., 2023 AAD 2023 2 Merola et al., Lancet 2023 (400 pts) ; McInnes et al., Lancet 2023 (852 pts) 3 van der Heijde et al., 2023 (BE MOBILE 1, nr-axSpA, 254 pts; BE MOBILE 2, r-axSpA, 332 pts) 4 Reich et al., Lancet 2021 (567 pts), Gordon et al., Lancet 2021 (435 pts), Warren et al., 2021 NEJM (478 pts) , Reich et al., NEJM 2021 (743 pts)

Source: MoonLake Corporate

IL-17 inhibition is expected to lead in a growing $50bn+ market

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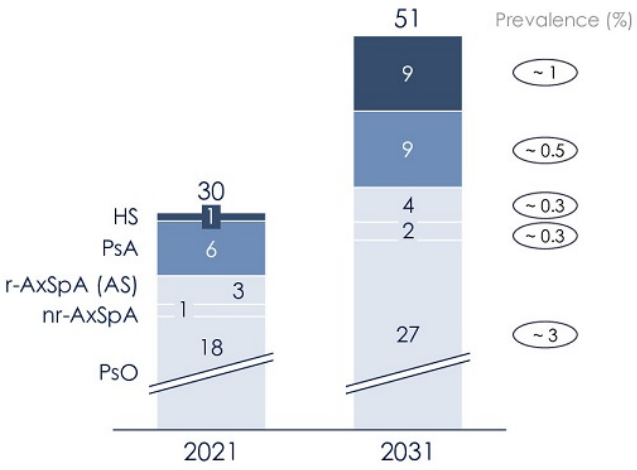
Global sales, USD Bn



IL-17 and other innovative biologics are expected to grow at CAGR 2-3x the rate of the market overall, to 2031

Hidradenitis Suppurativa (HS)

- **Driven by IL-17s** (60%) on base built by Humira™ as only therapy
- Several failures (e.g., IL-23, IL-36, TYK-2, IRAK, IL-1)

Psoriatic Arthritis (PsA)

- **Driven by IL-17s** with rates of 11%+ growth (1/3 market)
- Mostly IL-17 (incl. IZO) and some IL-23 but with latter not adding to joint treatment, (and JAKs)

Other: e.g., Axial Spondylarthritis *(r-axSpA and nr-axSpA)*

- **Driven by IL-17s** (20%+ growth) on base built by TNFs
- IL-23s failed

Other: *e.g., Psoriasis* *(PsO)*

- **Driven by newest IL-17** and IL-23 classes, eroding TNFs as the traditional class

IL-17A & F inhibition with further opportunity in many other disease areas across other Derm indications, Rheumatology, Ophthalmology, Hepatology, Nephrology, Oncology, and others

Source: Clarivate's Disease Landscape & Forecast 2021-2031 (last update: PsO (moderate to severe), PsA in December 2022; SpA in September 2022). HS 2031 projections based on LifeSci MLTX initiation report (assuming SLK value share identical to volume share)

Five reasons why we chose to focus now on HS and PsA

Hidradenitis Suppurativa

Psoriatic Arthritis

IL-17 is a key pathway and clinical results indicate it may be the only (HS) or one of the few (PsA) that is potentially a better treatment option

IL-17F is most abundant pro-inflammatory cytokine involved in driving the disease

Inflammation is deep with albumin-rich oedemas and tissue damage siting in deeper, little vascularized tissues, ideal for a Nanobody™

There are significant unmet needs, with decades old treatment goals, no satisfactory therapeutic solutions and low QoL for patients

The markets are large at $ multiple billion ranges, with high prevalence for each disease, robust growth rates and less competition

Source: MoonLake

We set out a large global Phase 2 program in HS and PsA

MoonLake

Approach to clinical design

- Trials started for **Hidradenitis Suppurativa (HS)** and **Psoriatic Arthritis (PsA)**, high unmet need diseases
- Trials illustrate our **pivotal design approach**:
  - **Larger size** than usual with **several arms**, incl. placebo and active reference **cross-overs**
  - Double-blinded, controlled trials, blinded post-cross over – **no open-labels, uncontrolled trials**
  - "Pivotal" designs to **accelerate** for well-planned superiority Phase 3s, including **dosing options**
  - Always **inclusive of Placebo AND active reference** (namely Humira) to plan Phase 3 and already mark differences to a "soon-to-be" global biosimilar
  - **Higher treatment goal as Primary Endpoint** vs standards (HiSCR75, ACR 50) to distinguish SLK, increase delta to placebo
- Anticipated read outs in 2023

Global Phase 2 program

Hidradenitis suppurativa

MIRA
NCT05322473

- Start date: **May 2022**
- End of screening: **Jan 2023**
- LP randomized: **Feb 2023**
- **234 patients** (vs. 210 target)
- **Fastest** recruitment in HS
- **57 activated sites** (US and Europe)
- **On-target baseline** comparable with main competitor pivotal trials
- PE read-out: **End June 2023 (R&D Day)**
- **24-wk read-out** expected: Oct 2023

Psoriatic Arthritis

ARGO
NCT05640245

- Start date: **Dec 2022**
- Predicted LP randomized: **Sep 2023**
- Trial recruiting **well ahead of plan**
- **5 arms:** 3 doses, placebo & Humira
- **200 patients**
- **~65 sites activated** (US and Europe)
- PE read-out: **Dec 2023**
- **24-wk read-out** expected: Mar 2024

Source: MoonLake Clinical Development

HS: IL-17F dependent deep tissue inflammation with high unmet need

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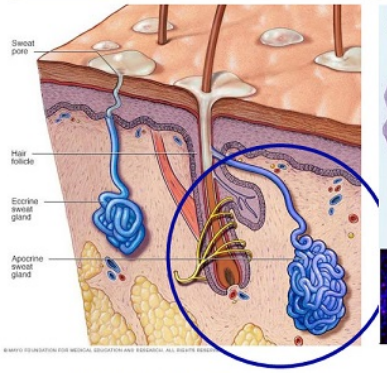
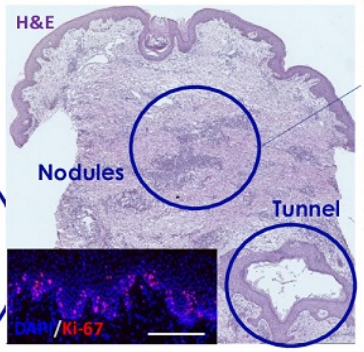
Blockage of Aprocrine glands…



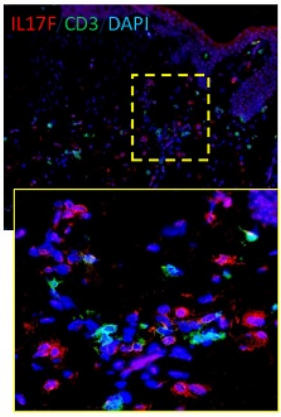
(essentially an "apocrinitis")

…creates deep tissue lesions…

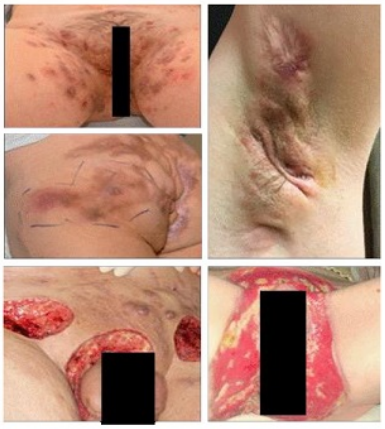


(vicious circle between IL-17 release and keratinocyte proliferation and activation)

…rich in IL-17F…



…and causing devastating damage



Market size

1-4% Global prevalence

7 avg # of years to diagnostic, globally

10+ USD billion sales by 2035

Unmet Needs

1 Drug approved (Humira)

50% Improvement for pts for 1 yr with ADA

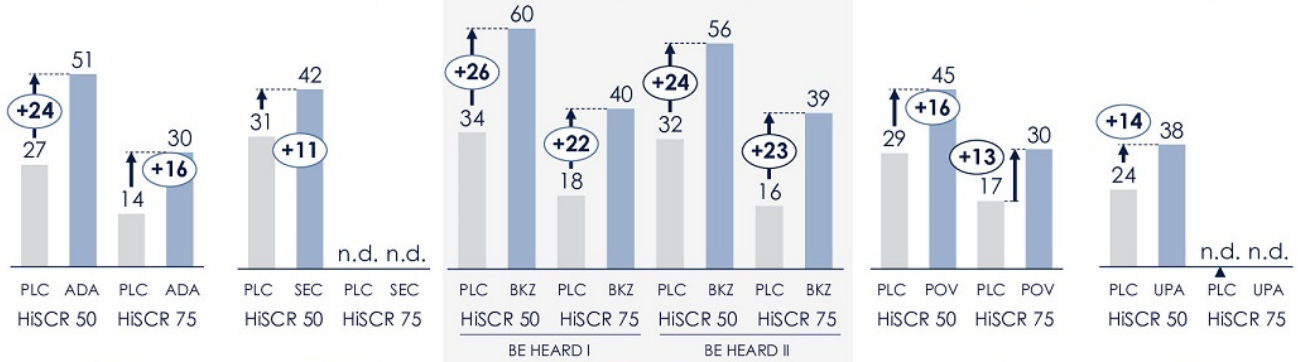
Picture from https://plasticsurgerykey.com/the-folliculopilosebaceous-unit-the-normal-fpsu/; Accessed December 2022; von Laffert M et al. Br J Dermatol 164:367-71, 2011; Navrazhina K, et al. J Allergy Clin Immunol 2021;147:2213–24

Source: MoonLake Medical

HS: Recent data underscores SLK potential in HS & HiSCR75 as new bar

MoonLake

Adalimumab (Humira)	**Secukinumab** (Cosentyx)	**Bimekizumab** (Bimzelx)	**Povorcitinib** (n/a)	**Upadacitinib** (Rinvoq)
▪ **TNFa inhibitor** ▪ Traditional mAb (~148kDa)	▪ **IL-17A only inhibitor** ▪ Traditional mAb (~151kDa)	▪ **IL-17A and IL-F inhibitor,** only other molecule in same MoA as SLK ▪ Traditional mAb (~150kDa), 3x larger than SLK (no Alb-domain)	▪ **JAK 1 inhibitor** ▪ Small molecule	▪ **JAK 1 inhibitor** ▪ Small molecule
PIONEER I and II[1] (Ph 3)	SUNRISE[2] (Ph 3)	BE HEARD I & BE HEARD II (Ph 3)[3]	NCT04476043 (Ph 2)	NCT04430855 (Ph 2)



40mg **Q1W, 12 weeks**	**300mg** **Q2W, 16 weeks**	**320mg** **Q2W, 16 weeks** (mNRI HS-ABX)	**75mg** **QD, 16 weeks**	**30mg** **QD, 12 weeks**

Leader is now Bimekizumab, followed by Humira and then Cosentyx (JAKs as a last line option)

Note: Data is not based on Head-to-Head comparisons. 1 Blend of PIONEER I and II, named "Integrated" (Porter et al., 2022, poster at SHSA 2022) 2 Kimball et al., 2022, presentation at EADV 2022 (SUNRISE, used as SUNSHNE did not produce consistent results across doses (Q2W chosen as reference as only dose with significance vs. Placebo across trials) 3 Late-breaking presentation; Kimball A, et al. AAD, 2023

Source: MoonLake

HS: Recent data underscores SLK potential in HS & HiSCR75 as new bar

MoonLake

Adalimumab (Humira)

- **TNFa inhibitor**
- Traditional mAb (~148kDa)

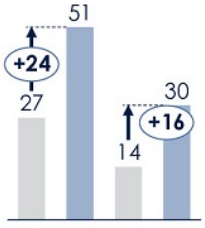
Secukinumab (Cosentyx)

- **IL-17A only inhibitor**
- Traditional mAb (~151kDa)

Bimekizumab (Bimzelx)

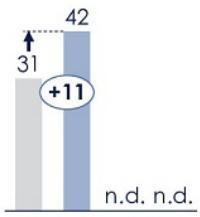
- **IL-17A and IL-F inhibitor,** only other molecule in same MoA as SLK
- Traditional mAb (~150kDa), 3x larger than SLK (no Alb-domain)

PIONEER I and II[1] (Ph 3)



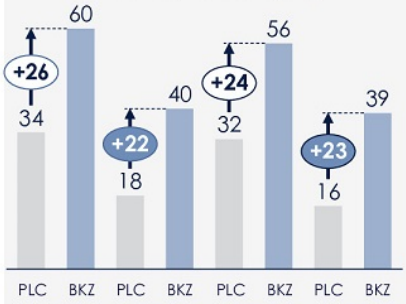
40mg
Q1W, 12 weeks

SUNRISE[2] (Ph 3)



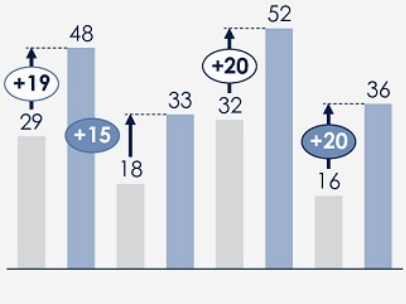
300mg
Q2W, 16 weeks

BE HEARD I & BE HEARD II (Ph 3)[3]



320mg
Q2W, 16 weeks (mNRI HS-ABX)

BE HEARD I & BE HEARD II (Ph 3)[3]



320mg
Q2W, 16 weeks (mNRI All-ABX)

Leader is now Bimekizumab, followed by Humira and then Cosentyx (JAKs as a last line option)

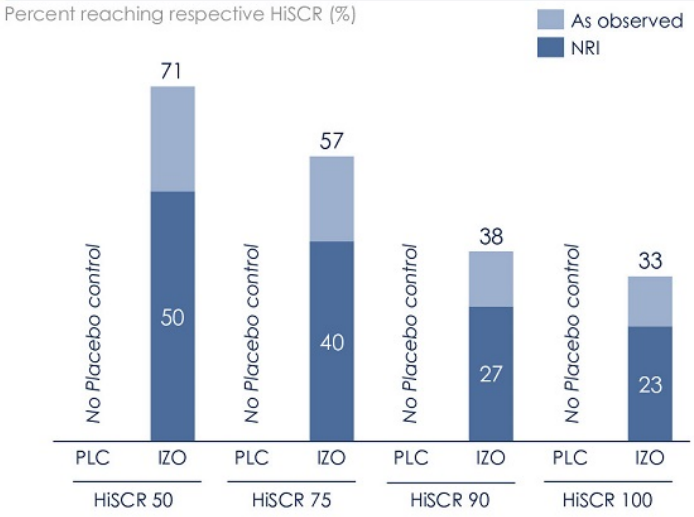
Note: Data is not based on Head-to-Head comparisons. 1 Blend of PIONEER I and II, named "Integrated" (Porter et al., 2022, poster at SHSA 2022) 2 Kimball et al., 2022, presentation at EADV 2022 (SUNRISE, used as SUNSHNE did not produce consistent results across doses (Q2W chosen as reference as only dose with significance vs. Placebo across trials) 3 Late-breaking presentation; Kimball A, et al. AAD, 2023

Source: MoonLake

HS: Izokibep data from an open-label, uncontrolled trial hard to read

MoonLake

Week 12 data



Key Notes

- Trial is an **open label, non-placebo controlled** with 30 patients
- Such trials are a known **"failure mode" in HS**, with different drugs failing to reproduce scores when trial is controlled and blinded (e.g., secukinumab, guselkumab show **-20% responses**)
- Other **important concerns**:
  - Low **lesion number** (~1/2 those in our trial)
  - 40% **site reaction** (indicative of low tolerance)
  - 80% **TEAE** (versus our 60-65%, with ~5 events per patient which is deemed high)
- Generally, **cautious view** by KOLs at AAD '23

Still, a positive readthrough for SLK as a **small molecule** with **albumin-binding** domain, in HS

Source: Papp et al, AAD 2023, S-1 Preliminary prospectus Acelyrin Inc., April 13th 2023, MoonLake

Guidance: Meet or beat Bimekizumab on HiSCR75 end of June

MoonLake

	Primary Analysis	HiSCR75 (Delta of best dose to PLC, ppt)[1]		
		Trial A		Trial B
1 **Bimekizumab** (Bimzelx)	ITT-NRI (mNRI-HS-ABX)	15 (22) BE HEARD I	17.5 (22.5)	20 (23) BE HEARD II
2 **Adalimumab** (Humira)	ITT-NRI	11 PIONEER I	16	21 PIONEER II
3 **Secukinumab** (Cosentyx)	ITT-mNRI	- SUNSHINE	-	- SUNRISE
Sonelokimab (SLK)	ITT-NRI (+ITT-mNRI)		> 20	

Other expectations:

- ⊕ Monthly Dosing
- ⊕ Higher Primary Endpoint
- ? No new safety signals
- ? Lower Thrush (*Candida*)

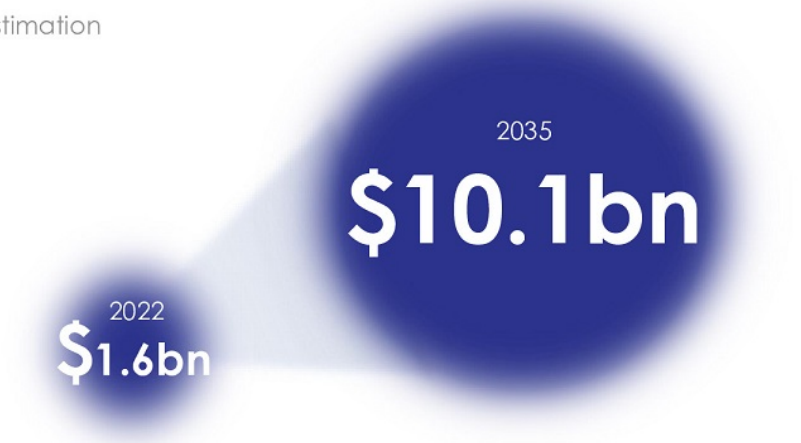
Note: Data is not based on Head-to-Head comparisons. 1 HiSCR75 response for best dose and placebo, respectively: Bimekizumab, 40% and 18% (Be Heard I), 39% and 16% (Be Heard II); Adalimumab, 25% and 14% (Pioneer I), 35% and 14% (Pioneer II); Secukinumab, no hiSCR75 responses available

Source: MoonLake Corporate

We predict the HS biologics market to be USD 10bn+ in the US alone

MoonLake

US HS Biologics Market estimation



Key drivers			
Overall HS True Prevalence	2.1%	2.1%	*(can be up to 4%, esp. in the US)*
Proportion with Mod-to-Severe disease	~55%	~55%	*(as per literature)*
Proportion of Mod-to-Severe with HS Diagnosis	~7%	~19%	*(growth as per current US claims)*
Biologics Use	~7%	~13%	*(as psoriasis over the last 12 years)*

1 "Hurley III Hidradenitis Suppurativa Has an Aggressive Disease Course", Annika et al., Dermatology 2018, doi: 10.1159/000491547

Source: MoonLake, DRG/Clarivate, academic journals, CBO

Backup: HS Market calculation details

MoonLake

Biologics only	**Current state (2023, ranges)**	**Future state (2035, ranges)**	**Future state (2035, MLTX model values)**	**Rationale & sources**
Total US population	336,000,000	355,000,000	355,000,000	CBO data The Demographic Outlook: 2023 to 2053 | Congressional Budget Office (cbo.gov)
Estimated US prevalence	5-8 million (~1.5-2.5%)	5-9 million (~1.5-2.5%)	7,455,000 **(2.1%)**	Based on Prens et al., 2022, BJD, doi: 10.1111/bjd.20954; some sources indicate prevalence closer to 4%, e.g., Jemec et al., 1996, doi: 10.1016/s0190-9622(96)90321-7
Proportion with moderate-to-severe disease	3-5 million (~55%)	3-5 million (~55%)	4,100,250 **(55%)**	Defined as Hurley stage II and III. Based on Annika et al., Dermatology 2018, doi: 10.1159/000491547
Diagnosed prevalence of moderate-to-severe disease	140,000-320,000 (~5-7%)	440,000-1,230,000 (~15-25%)	793,097 **(~19%)**	Apply 9.9% linear growth rate per annum in diagnosis rate (based on US claims data analysis from 2008-2017); Garg et al., 2022, doi: 10.1007/s13555-022-00872-1
Proportion of mod-to-severe HS treated with biologics	~15,000-16,000 (~5%)[1]	60,000-160,000 (~13%)	101,694 **(~13%)**	Future state for HS is based on present-day injectable biologics penetration in psoriasis (~13% using DRG/Clarivate data, Dec 2022)
Avg. biologic annual price (gross)	USD 166,128	USD 166,128	USD 166,128	HS injectable biologic list price as of Feb 2023 (Reuters, US only)
Avg. biologic annual price (net)	USD 99,676 (~60%)	USD 99,676 (~60%)	USD 99,676 **(~60%)**	
Market size (US)	**USD 1.5-1.6 bn**	**USD 6-16 bn**	**USD ~10.1 bn**	Based on psoriasis, where ~70-75% of biologic sales are from the US (DRG/Clarivate data, Dec 2022)
Market potential (WW)		**USD 8-22 bn**	**USD ~14.1 bn**	

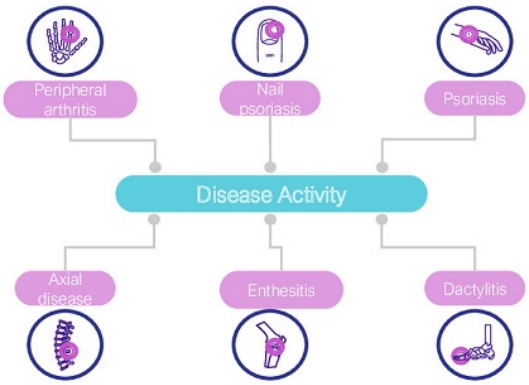
Humira has a 70-80 % drop rate/yr (sales are largely stable because it is mostly dynamic market every year) and works in an estimated 30% of patients only (yearly market could be 3x larger already at present) [1]

Source: MoonLake, DRG/Clarivate, academic journals, CBO, AbbVie's Humira gets a U.S. rival, but costs could stay high | Reuters

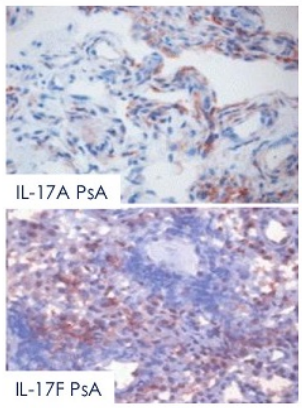
PsA: IL-17F dependent multi-domain disease in difficult-to-reach tissues

MoonLake

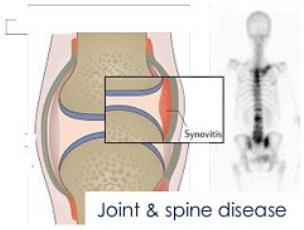
PsA is a multi-domain deep-tissue disease...

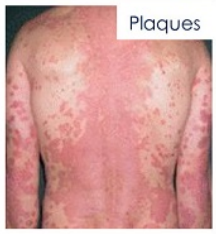


...with 3x IL-17F vs IL-17A[1]...

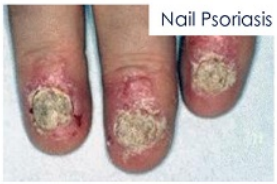


...and causing devastating damage





(PsA starts as enthesitis[2], with IL-17F producing cells in associated plaques[3] and axial disease[4-6], and with 80% of patients suffering from nail psoriasis[7])



Market size

.5% Global prevalence

10+ USD bn sales beyond 2030

Unmet Needs

20% ACR improvement achievable with current drugs

80% Pts with multiple disease domains (Psoriatic Disease Complex)

0 Drugs meet leading PASI100 & ACR50

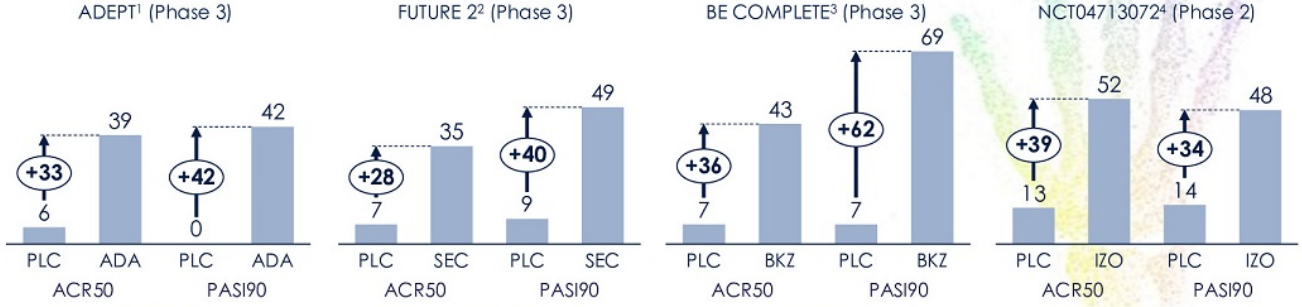
1 van Baarsen LG, et al. Arthritis Res Ther. 2014; 16:426-436; 2 Schett G, et al. Nature Reviews Rheumatology. 2017; 13:731-741; 3 Prinz JC, et al. J Exp Med. 2020 Jan 6;217(1):e20191397; 4 Sweet K, et al. RMD Open 2021;7e001679; 5 Shao M, et al. Clin Immunol 2020;213:108374; 6 Lories RJ and McInnes IB. Nature Medicine. 2012; 18:1018-1019; 7 Reich K. J Eur Acad Dermatol Venereol. 2009; 23 Suppl 1:15-21; Clinical pictures K. Reich

Source: MoonLake Medical, Clinical pictures K. Reich

PsA: Recent data underscores role of IL-17F inhibition & penetration

MoonLake

	Humira (Adalimumab)	**Cosentyx** (Secukinumab)	**Bimekizumab**	**Izokibep**
Molecule characteristics	▪ **TNFa inhibitor** ▪ Traditional monoclonal antibody (~148kDa)	▪ **IL-17A only inhibitor** ▪ Traditional monoclonal antibody (~151kDa)	▪ **IL-17A and IL-F inhibitor** ▪ Traditional monoclonal antibody (~150kDa)	▪ **IL-17A/A inhibitor** ▪ Antibody Mimetic (~18 kDa) ▪ Albumin binding domain
ACR and PASI response rates in %	ADEPT[1] (Phase 3)	FUTURE 2[2] (Phase 3)	BE COMPLETE[3] (Phase 3)	NCT04713072[4] (Phase 2)



40mg / Q2W, 24 weeks	**300mg / Q4W, 24 weeks**	**160mg/ Q4W, 16 weeks**	**80mg / Q2W, 16 weeks**

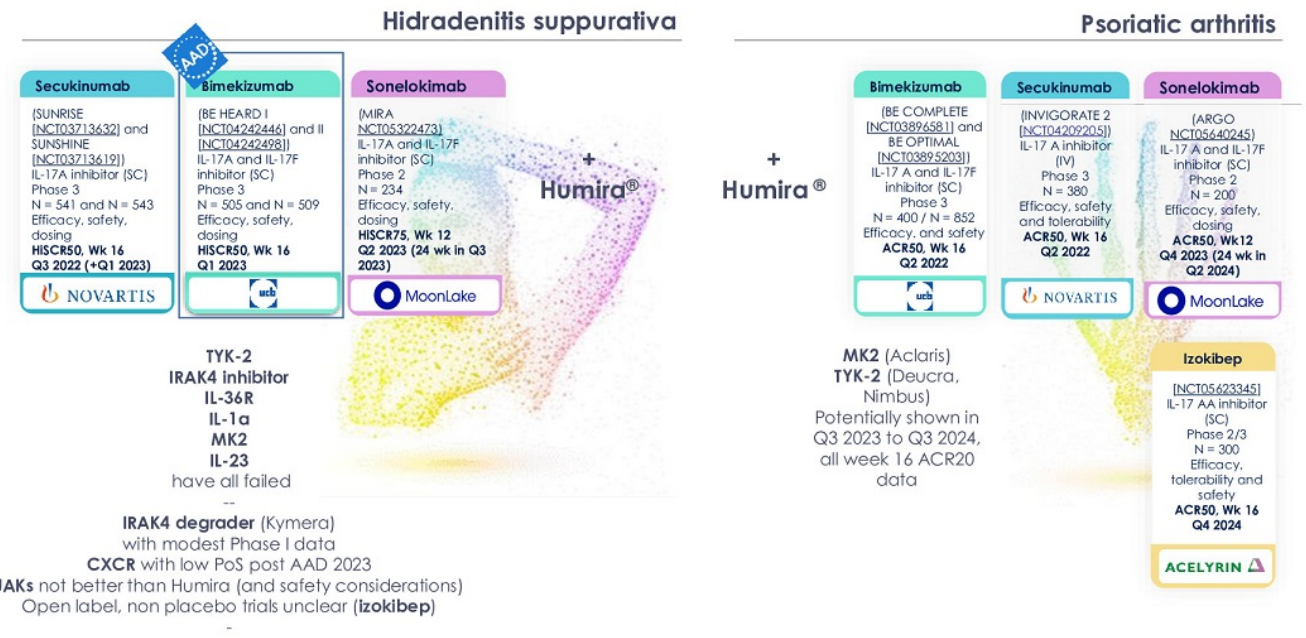
SLK has both the right MoA (IL-17F) & the molecular characteristics (small size, albumin-binding) to succeed (ACR50 & PASI100)

Note: Data is not based on Head-to-Head comparisons. 1 Mease PJ, et al. Arthritis Rheum 2005;52:3279–89; 2 McInnes IB, et al. Lancet 2015;386:1137–46; 3 Merola JF, McInnes I, Ritchlin CT, et al. BE COMPLETE Abstract presented at EULAR 2022. 4 Behrens F, Taylor PC, Wetzel D, et al. Abstract presented at EULAR 2022

Source: MoonLake

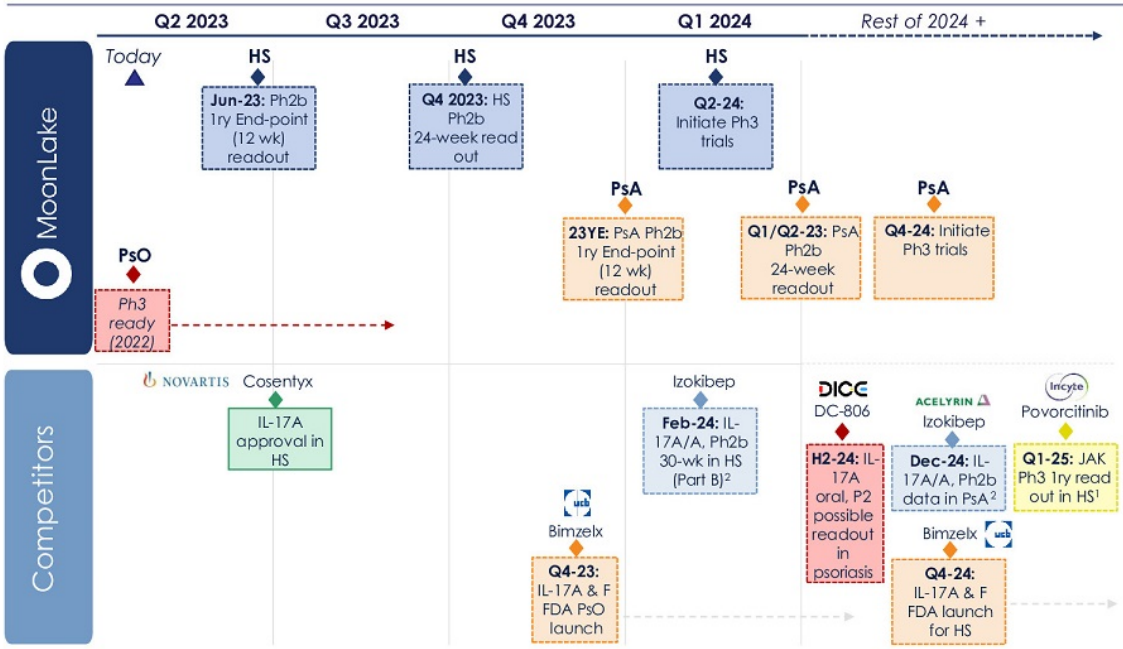
Competitors: Focus on Bimekizumab

MoonLake



Source: MoonLake Clinical Development, Press releases, ClinicalTrials.gov

Our time: Important anticipated catalysts in the short-term



Key Notes

- Thus far, all MLTX trials delivered **on or ahead** of schedule
- All planned MLTX trials are **pivotal designs**
- Expect **three Phase 3 options** at end of 2023 (excl. "direct to Ph3" options)
- Cosentyx expected to launch in H2 2023 to drive **market formation**
- BKZ launches depending on **FDA approval PSO and sBLA filing**
- Next **Izokibep data on HS in 2024** and PsA data later on (same launch timeline)
- **DICE not a competitor** and proceeding with PsO

1 INCB054707 2 NCT05355805

Source: MoonLake, Competitor corporate announcements

Differentiation: SLK combines properties like no other asset

MoonLake

A winning MoA…

- **Highest efficacy**

  *IL-17A & F inhibition showed **highest durable HiSCR in HS** (BKZ)*

- **Safer inhibition**

  ***Long history of safety** for IL-17, where Candida ("thrush") is most complicated adverse event – vs. TB, cancer, infections, CV events, death… (with TNFa or JAK1)*

- **Only 2 molecules**

  SLK & BKZ – top 2 typically get 2/3 of indication bio sales (avg. $4bn +)[1]

… and a differentiated molecule

- **Improved convenience**

  *Candida ("thrush") at **lower rates** vs BKZ and **monthly injections** vs. biweekly BKZ*

- **Higher goals**

  *Highest primary clinical endpoint with **HiSCR75**, with comparisons with gold-standard Humira™*

- **Elevated Efficacy ?**

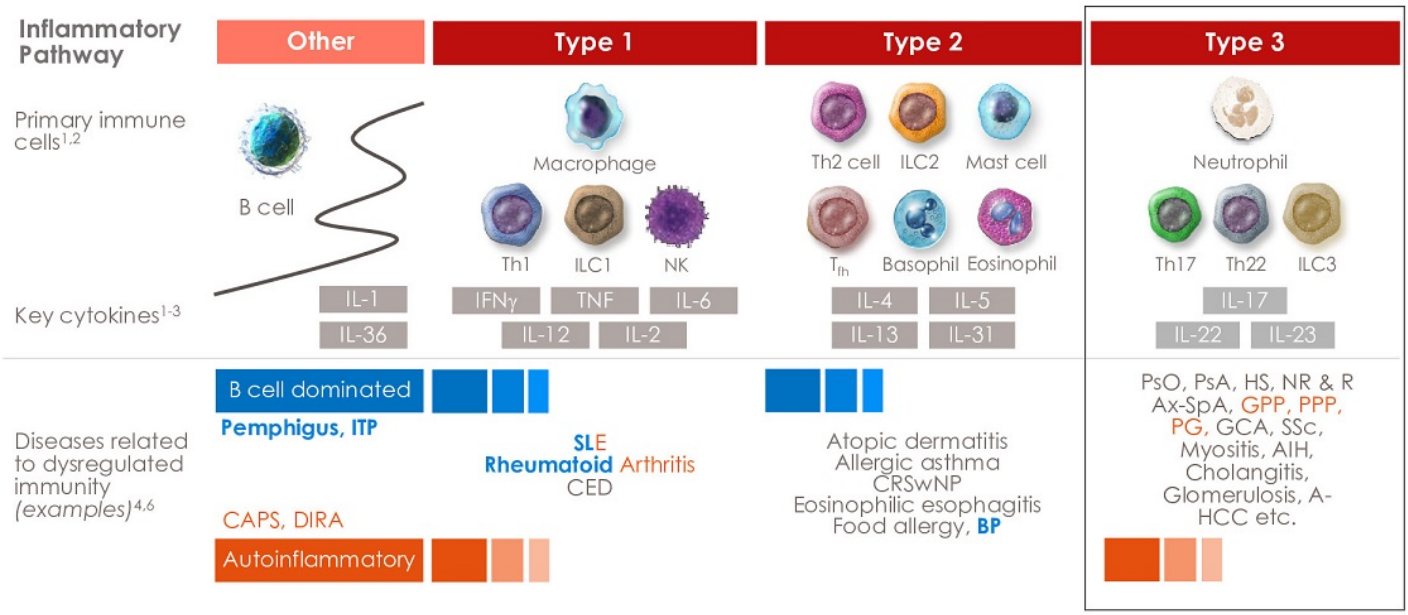
  TBD – around end of June but multiple "shots-at-goal" vs BKZ – smaller (5-6x more penetration), albumin-binding (targeting to inflammation), unique binding properties (affinity, potency)

1 Based on analysis of 2023 sales of 11 indications (PsO, RA, Asthma, AD, AxSpA, CU, SLE, PsA, COPD, CD, UC) – 2030 ranges are even higher

Source: DRG, MoonLake

SLK is a potential leader in different Type 3 inflammatory diseases

MoonLake



Note: Simplified depiction based on key published information, not meant to be exhaustive in nature. AD, atopic dermatitis; IFNγ, interferon gamma; IL, interleukin; ILC, innate lymphoid cell; NK, natural killer; Tfh, follicular helper; Th, T helper.

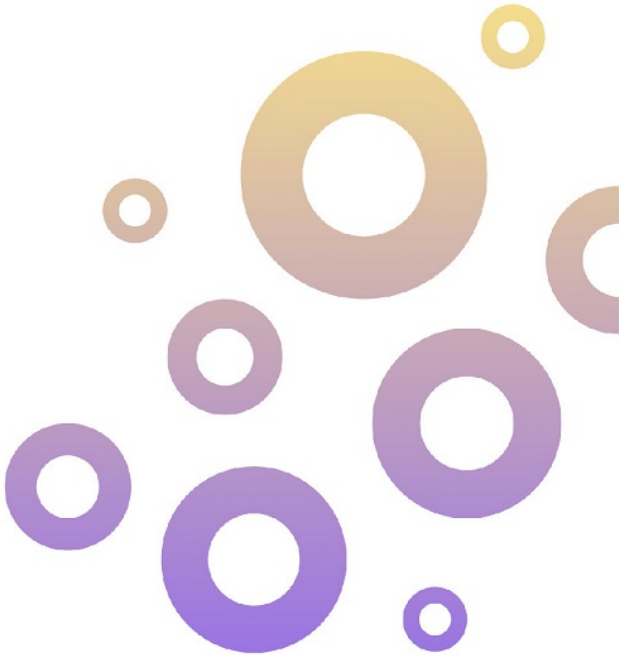
1. Kaiko GE, et al. *Immunology*. 2008;123:326-338. 2. Eyerich K, Eyerich S. *J Eur Acad Dermatol Venereol*. 2018;32:692-703. 3. Raphael I, et al. Cytokine. 2015;74:5-17. 4. Nakayama T, et al. *Annu Rev Immunol*. 2017;35:53-84. 5. Coates LC, et al. *Semin Arthritis Rheum*. 2016;46:291-304. 6. Gandhi NA, et al. *Expert Rev Clin Immunol*. 2017;13(5):425-437.

Source: MoonLake Corporate

Key points

MoonLake

- **"Best in class potential"** – SLK is a unique molecule among all "next gen IL-17s"
- **"Rarefied air"** – only two molecules can inhibit all IL-17 pro-inflammatory dimers, only SLK combines that MoA with unique molecular characteristics
- **"MLTX = Robust trials"** – comparing apples-to-apples is critical, esp. in diseases like HS and PsA, and only pivotal-like designs provide differentiating insight
- **"Potential Multi Bn drug"** – SLK may impact very large markets that are growing fast now, with potential over $50bn, as a leading asset in Type inflammation
- **"Our year"** –MLTX has all key readouts among "next gen IL-17s" to end of 2023, and operates from a position of financial stability and strength



Source: MoonLake

MoonLake

AAD Reflections & Treatment Landscape

Prof. Kenneth B. Gordon

Chair of Dermatology at the Medical College of Wisconsin

Disclosures

AbbVie, Amgen, Arcutis, Bristol Myers Squibb, Boehringer Ingelheim, Dermavant, Incyte, Janssen, Lilly, MoonLake, UCB, UNION Therapeutics

Source: Prof. Kenneth B. Gordon

Hidradenitis suppurativa: a challenge and opportunity

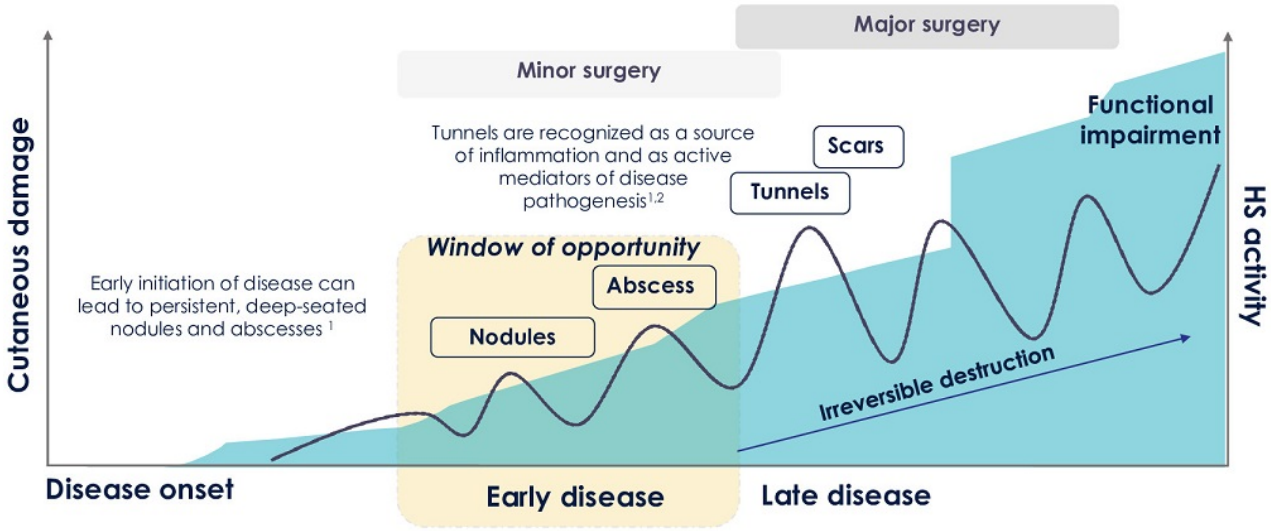
MoonLake

- HS poses a **formidable challenge**
- HS is **progressive** and results in **irreversible tissue destruction** over time
- **Delayed diagnosis** and the subsequent **delay to effective therapy** is a critical gap in the management of HS
- Prevalence likely to be **underreported** and further hindered by underdiagnosis and delayed diagnosis (estimated prevalence > 2%)
- Patient and societal **burden is profound** with extensive unmet medical need
- **Only 1 biologic** approved to date
- Options for therapy are **currently insufficient**

HS, hidradenitis suppurativa

Source: Prof. Kenneth B. Gordon

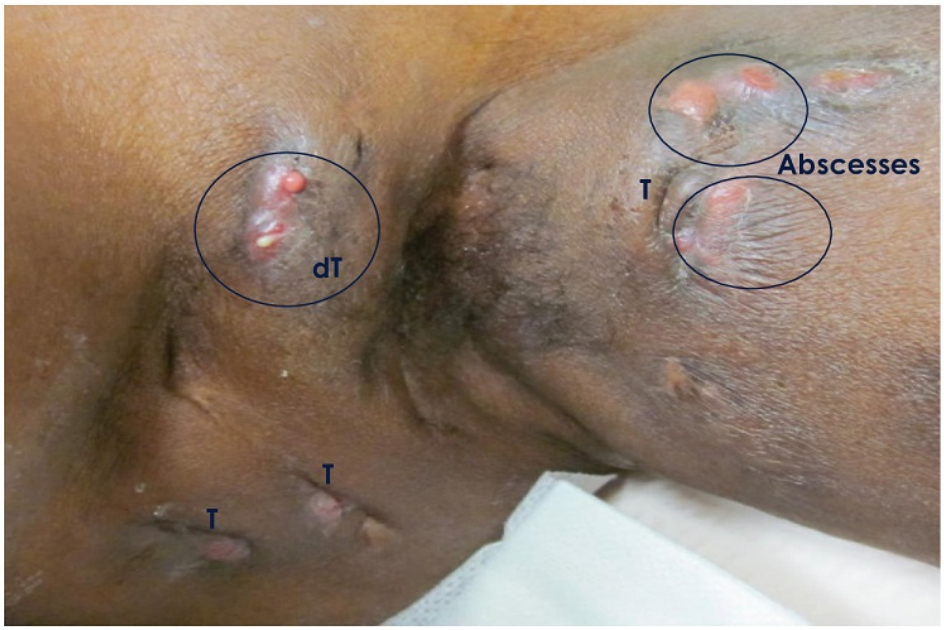
HS results in irreversible tissue destruction over time



Over time, chronic, untreated inflammation progresses to irreversible tissue destruction and scarring[1]

Figure adapted from Martorell A, *et al. Actas Dermosifiliogr.* 2016; 107(Suppl 2):32–42.
1. Sabat R, *et al. Nat Rev Dis Primers.* 2020; 6:18; 2. Navrazhina K, *et al. J Allergy Clin Immunol.* 2021; 147:2213–2224.
Source: Prof. Kenneth B. Gordon, MoonLake

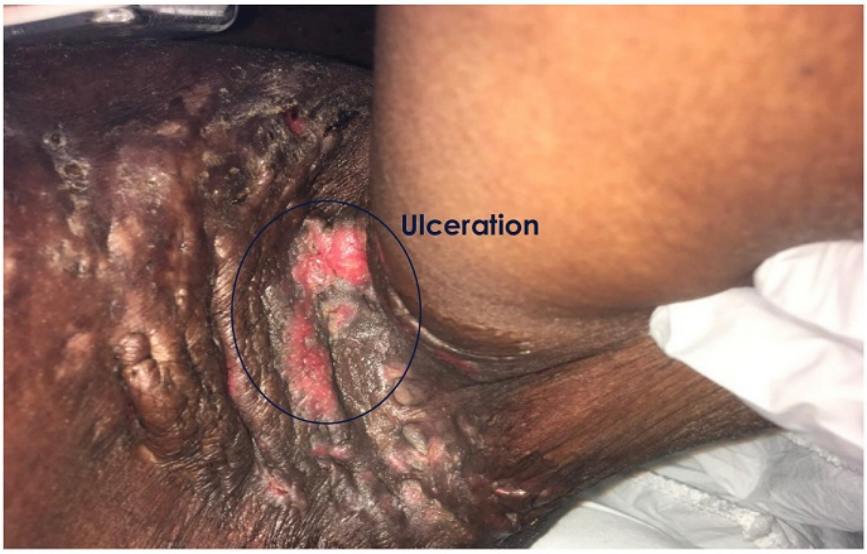
Advanced disease with deep abscesses and tunnels



dT, draining tunnel; T, tunnel

Source: Pictures courtesy of Prof. Kenneth B. Gordon and Dr Gretchen M. Roth

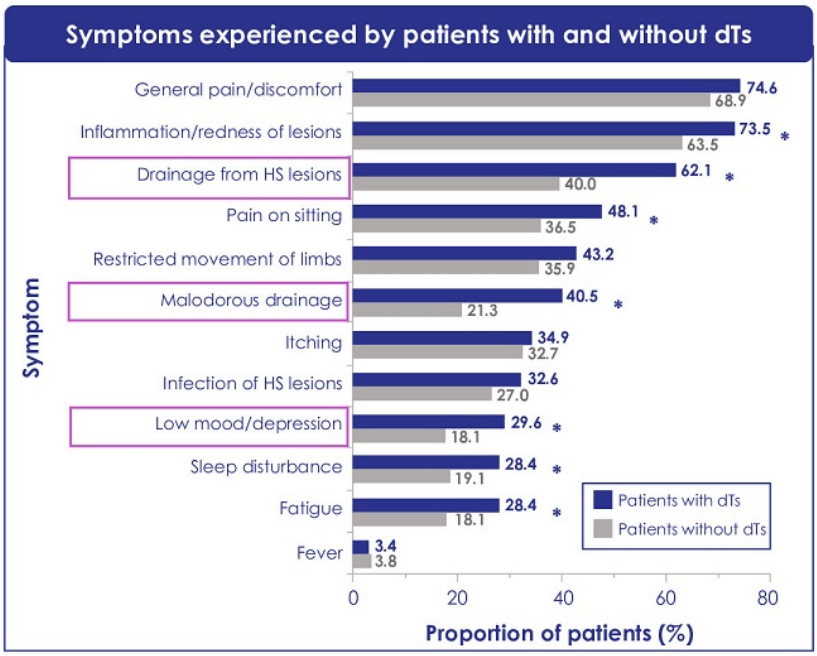
Late stage disease with extensive scarring and ulceration



Source: Pictures courtesy of Prof. Kenneth B. Gordon and Dr Gretchen M. Roth

Draining tunnels (dTs) cause significant pain and morbidity for patients

MoonLake



Patients with draining tunnels experience more inflammation, malodorous drainage from lesions, pain on sitting, and low mood/depression compared with those without draining tunnels

dT, draining tunnel; Symptoms were reported by physicians using a patient record form; 1 patient with dT and 2 patients without dT had no symptoms; 1 patient with dT and 2 patients without dT had other symptoms. *p<0.05, calculated using Fisher's exact test.
Ingram JR, *et al.*. Presented at the 12th European Hidradenitis Suppurativa Foundation (EHSF) Conference, Florence, Italy, February 8–10, 2023. Poster P139.

Source: Prof. Kenneth B. Gordon

HS is characterized by a profound burden for patients and society

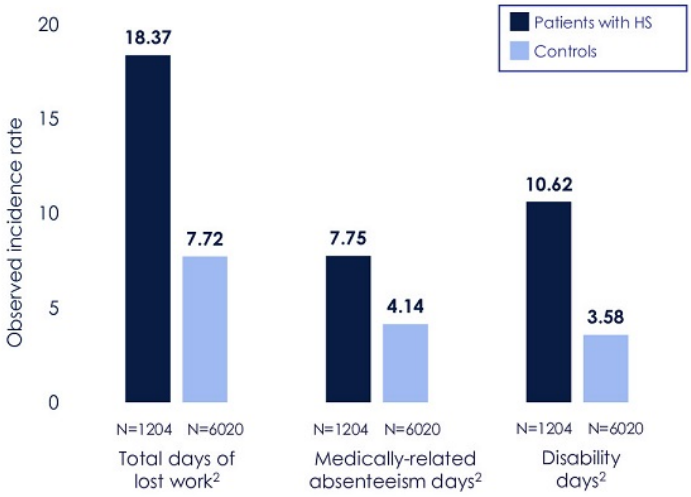
MoonLake

HS has a high disease burden with wide- ranging and negative consequences for patients[1]

In a global survey (VOICE, n=1299) evaluating unmet needs from the perspectives of patients with HS:

- 43% of participants reported an **extreme impact of HS** on their lives in the past week[1]
- 61% of participants rated **HS-related pain** over the past week as moderate or higher (NRS ≥5)[1]
- 61% of participants of participants reported experiencing **fatigue** in the past week[1]
- **Anxiety** (36%) and **depression** (36%) were frequently reported[1]

HS also has a high associated economic and productivity burden[2,3]



1. Garg A, *et al. J Am Acad Dermatol.* 2020; 82:366–376; 2. Tzellos T, *et al. Br J Dermatol.* 2019; 181:147–154; 3. Schneider-Burrus S, *et al. Br J Dermatol* 2023; 188:122–130

Source: Prof. Kenneth B. Gordon

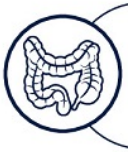
More severe HS is associated with an increased burden of comorbidities

MoonLake

Metabolic syndrome is observed in ~40% of patients with HS from an early age[6]

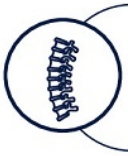
Patients with HS frequently have **endocrine disorders**, including type 2 diabetes and polycystic ovary syndrome[1,7]

Depression and anxiety are highly prevalent among patients with HS, with patients having an elevated risk of suicide compared with the general population[8–10]



IBD is observed in 0.3–3% of patients with HS, which is estimated to be up to 8 times higher than in the general population globally[11,12]

Increased risk of **CV morbidity**:[13]
CV death (95%)
Myocardial infarction (57%)
Ischemic stroke (33%)
MACE (53%)



Spondyloarthritis is more prevalent in patients with HS compared with the general population[14]

HS is a complex disease with contributory lifestyle factors, such as obesity and smoking[1–5]

CV, cardiovascular; IBD, inflammatory bowel disease; MACE, major adverse cardiovascular events

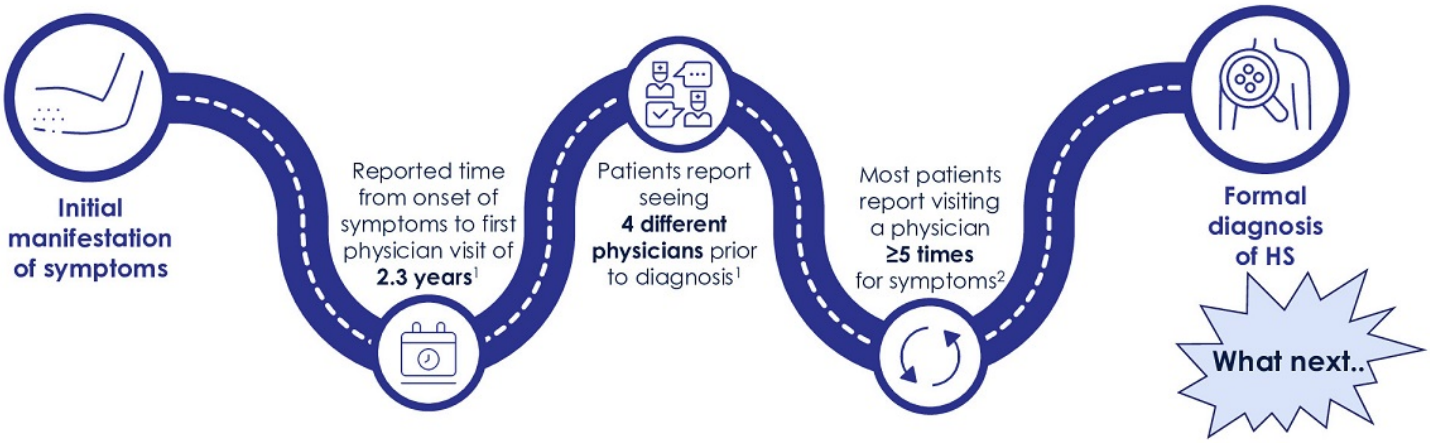
1. Sabat R, *et al. Nat Rev Dis Primers.* 2020; 6:18; 2. Wolk K, *et al. Br J Dermatol.* 2020; 183:999–1010; 3. Rosi E, *et al. Biomedicines.* 2021; 9:1168; 4. Boer J, Jemec GBE. *Exp Dermatol.* 2021; 30:212–215; 5. Abu Rached N, *et al. Int J Mol Sci.* 2022; 23:15250; 6. Sabat R, *et al. PLoS One.* 2012; 7:e31810; 7. Garg A, *et al. J Invest Dermatol.* 2018; 138:1288–1292; 8. Garg A, *et al. J Am Acad Dermatol.* 2020; 82:366–376; 9. Kurek A, *et al. J Dtsch Dermatol Ges.* 2013; 11:743–750; 10. Thorlacius L, *et al. J Invest Dermatol.* 2018; 138:52–57; 11. Ng SC, *et al. Lancet.* 2017; 390:2769–2778; 12. Deckers IE, *et al. J Am Acad Dermatol.* 2017; 76:49–53; 13. Egeberg A, *et al. JAMA Dermatol.* 2016; 152:429–434; 14. Rondags A, *et al. Semin Arthritis Rheum.* 2019; 48:611–617.

Source: Prof. Kenneth B. Gordon

Delay in diagnosis and delay to effective therapy is a critical gap

MoonLake

Mean delay to diagnosis of 7–10 years[1–3]



The prevalence of HS is likely to be underreported and further hindered by underdiagnosis and delayed diagnosis[4,5]

Estimated prevalence >2%[4,5]

1. Saunte DM, *et al. Br J Dermatol.* 2015; 173:1546–1549; 2. Garg A, *et al. J Am Acad Dermatol.* 2020; 82:366–376; 3. Kokolakis G, *et al. Dermatology.* 2020; 236:421–430; 4. Prens LM, *et al. Br J Dermatol.* 2022; 186:814-822; 5. Kearney N, *et al. Br J Dermatol.* 2022; 186:767-768.

Source: Prof. Kenneth B. Gordon

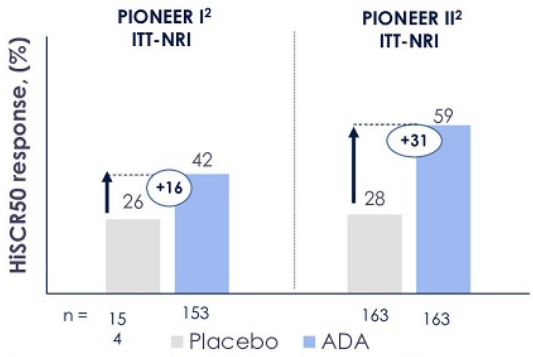
Adalimumab (Humira®) is the only approved biologic for HS

MoonLake

Adalimumab (Humira®[1])- **approved for HS by FDA 2015**

- **TNFa inhibitor**
- Traditional mAb(~148kDa)

No new FDA approved biologic or small molecule therapy for HS since Humira® approval 2015



50% improvement (HiSCR50) in approx. 50% of patients

1

HS

8

FDA approved systemic therapies since 2015[3-5]

PsO

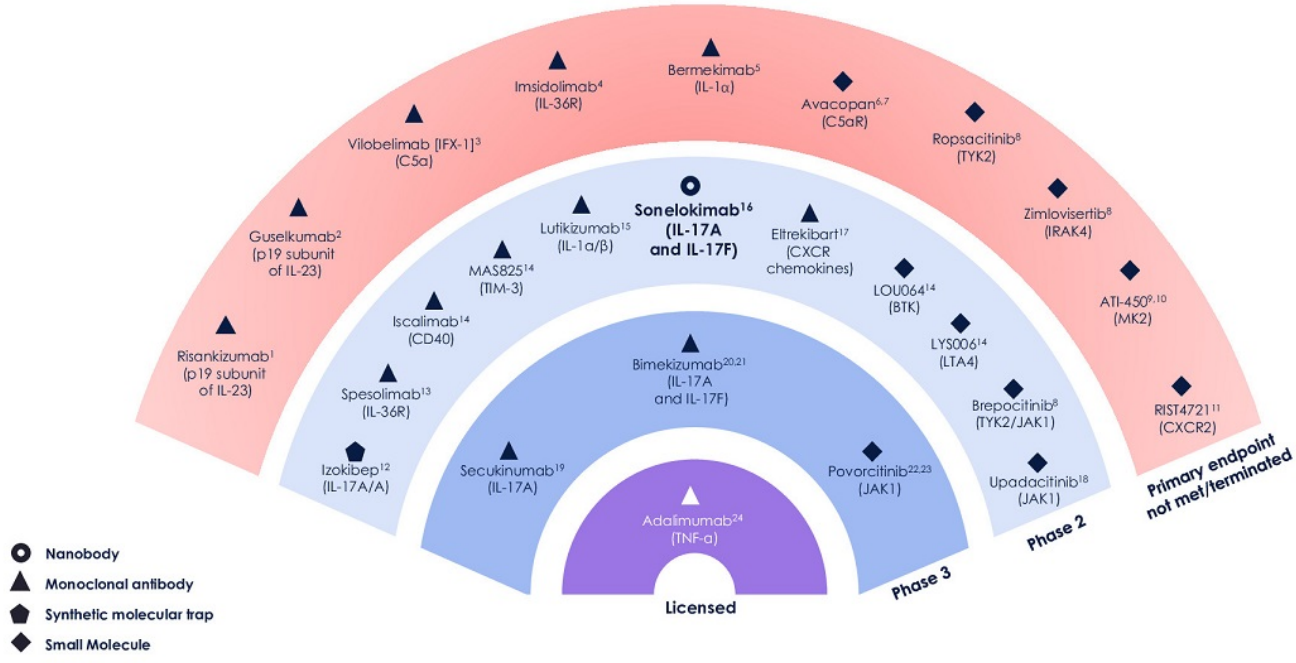
Additional therapeutics with alternative mechanisms of action and greater depth of response urgently needed

ADA, adalimumab; HS, hidradenitis suppurativa; TNF-α, tumor necrosis factor α; ITT, intention-to-treat; NRI, non-responder imputation; PsO, psoriasis; 1. HUMIRA prescribing information. Available at humira (rxabbvie.com) Last accessed: April 2023; 2. Kimball AB, *et al. N Engl J Med.* 2016; 375:422-434; 3. Strychalski ML, *et al. JAAD Int.* 2022; 27:92-91; 4. Menter A, *J Am Acad Dermatol.* 2019; 80:1029-1072; 5. Sheridan M. *Drugs* 2022; 82:1671-1679.

Source: Prof. Kenneth B. Gordon

The fast-evolving HS clinical development landscape

MoonLake



1. NCT03926169; 2. NCT03628924; 3. NCT03487276; 4. Anaptysbio Reports HARP Phase 2 Top-Line Data of Imsidolimab in Moderate-to-Severe Hidradenitis Suppurativa | AnaptysBio, Inc.; 5. NCT04988308; 6. NCT03852472; 7. BioSpace press release 2020; 8. Kimball A, et al. *European Academy of Dermatology and Venereology* 2022; Abstract 3497; 9. NCT05216224; 10. Biospace press release 2023; 11. NCT05348681; 12. NCT05355805; 13. NCT04876391; 14. NCT03827798; 15. NCT05139602; 16. NCT05322473; 17. NCT04493502; 18. NCT04430855; 19. Kimball AB, et al. *Lancet*. 2023; 401:747–761; 20. NCT04242446; 21. NCT04242498; 22. NCT05620823; 23. NCT05620836; 24. HUMIRA prescribing information. Available at humira.rxabbvie.com[Last accessed: April 2023

Source: Prof. Kenneth B. Gordon, MoonLake

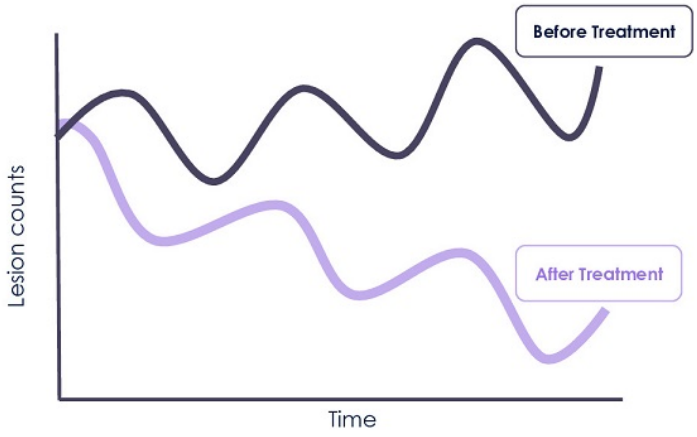
Insights and learnings from the clinical development landscape

MoonLake

Key insights

- **Disease pathways**; Therapeutic successes and failures (e.g., IL-23p19[1,2] , TYK2[3], MK2[4,5], IL-1α[6]) are helping decipher key pathways underpinning disease
- IL-17 inhibition furthest advanced from a clinical perspective (IL-17A[7], IL-17A and IL-17F[8,9])
- **Disease activity**; There is natural waxing and waning of HS disease activity [10, 11]
- Placebo variation can be high in trials due to the HiSCR50 treatment bar being low and further fueled by underlying variation in disease
- **Treatment goals; Need to evolve from HiSCR 50 to HiSCR 75**
- **Critical to have sufficient baseline disease severity going into trials; ≥ 5 AN Count, Hurley II/III**

Waxing and waning of disease activity [10,11]



1. NCT03926169; 2. NCT03628924 ; 3. Kimball A, *et al. European Academy of Dermatology and Venereology* 2022; Abstract 3497; 4. NCT05216224; 5. Biospace press release 2023; 6. NCT04988308 ; 7. Kimball AB, *et al. Lancet.* 2023; 401:747–761; 8. NCT04242446; 9. NCT04242498; 10. Micheletti, RG. Semin Cutan Med Surg 2014; 33.3 suppl: S51-S53. 11. Frew JW. JAAD Int. 2020;1(2):208-221.

Source: Prof. Kenneth B. Gordon

Designing a robust clinical trial in HS: Integrating learnings from psoriasis

MoonLake

DESIGN	• Double-blind, **placebo-controlled**, randomized clinical trial
COMPARATOR	• Inclusion of **active comparator or reference arm** • **Multiple dose regimens**, with "anchor dose"
SIZE/CENTER EXPERIENCE	• **Multi-center study, n ≥ 200** • Selection of sites with relevant experience and training
ENDPOINT SELECTION	• **Primary outcomes accepted by the FDA for pivotal trials; HiSCR** • **High-threshold primary endpoints accepted by FDA; HiSCR 75** • Primary outcomes **not accepted** in pivotal trials by FDA (e.g. change from baseline AN count, IHS4)
PATIENT POPULATION	• **Standardized** inclusion and exclusion criteria • **Sufficiently severe;** AN count ≥ 5, Hurley II & III
STATISTICAL ANALYSES	• **Robust statistical analyses:** Primary analysis ITT-NRI/ITT-LOCF with sensitivity analysis, primary and key secondary endpoints multiplicity controlled, stratification by disease severity and patient interventions

FDA, Food and Drug Administration; ITT-LOCF, intention to treat-last observation carried forward; ITT-NRI, intention to treat-non-responder imputation.

Source: Prof. Kenneth B. Gordon

Key study design elements of Phase 3 trials

MoonLake

AAD

Study element	PIONEER I / II[a]	SUNSHINE / SUNRISE[b]	BE HEARD I / II[c]
Stage	Phase 3	Phase 3	Phase 3
Size	n=307 / n=326	n=541 / n=543	n=505 / n=509
Design	R, DB, PC	R, DB, PC	R, DB, PC
Dose arms	1 ADA, placebo	2 SEC, placebo	3 BKZ, placebo
Key inclusion criteria - Baseline AN count - Hurley stage	 ≥3 II and III	 ≥5 I, II and III	 ≥5 II and III
Primary endpoint	HiSCR50 W12	HiSCR50 W16	HiSCR50 W16
Stratification	Hurley stage and concomitant ABX (PII)	Region, concomitant ABX, and body weight	Hurley stage and concomitant ABX
Primary analysis	ITT-NRI Cochran-Mantel-Haenszel[1]	ITT-mNRI (MI) Logistic regression[2] (Hurley stage, baseline AN)	ITT-mNRI (MI) Logistic regression[1]
Previous biologic use	not allowed	allowed	allowed
Concomitant ABX	not allowed / allowed	allowed	allowed
Handling of new ABX - any ABX - for HS	 included NRI	 included Data handling rules[3]	 mNRI (2° included)[4] mNRI

[1]including the stratification factors; [2]including the stratification factors and other covariates; [3]only NRI if AN count ≥50% compared to baseline; [4]primary analysis mNRI ALL-ABX, secondary analysis mNRI HS-ABX; A=abscess, ABX=antibiotics, AR=active reference, DB=double-blind, DT=draining tunnel, IIT=intention-to-treat, PC=placebo-controlled, N=nodule, NRI=non-responder imputation, mNRI=modified NRI (only patients with missing data due to lack of efficacy or safety), R=randomized

[a]Kimball AB, *et al. N Engl J Med*. 2016; 375:422-34; [b]Kimball AB, *et al. Lancet*. 2023; 401:747-761; [c]Kimball AB, *et al. AAD* 2023; Late-breaker

Source: Prof. Kenneth B. Gordon

Phase 3: Inhibition of IL-17A and IL-17F with bimekizumab demonstrates elevated treatment outcomes as measured by HiSCR75

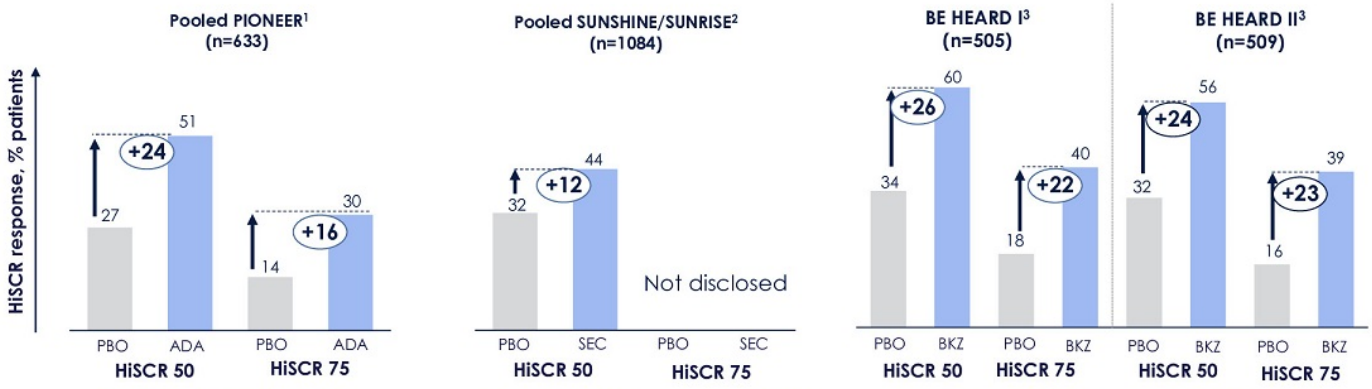
MoonLake

AAD

Adalimumab (Humira)
- **TNFa inhibitor**
- Traditional mAb(~148kDa)

Secukinumab (Cosentyx)
- **IL-17A only inhibitor**
- Traditional mAb (~151kDa)

Bimekizumab (Bimzelx)
- **IL-17A and IL-F inhibitor**
- Traditional mAb (~150kDa)



40mg Q1W, 12 weeks, ITT-NRI

300mg Q2W, 16 weeks, ITT-mNRI (MI)

320mg Q2W, 16 weeks, mNRI HS-ABX

Baseline AN Count[a]	10.7 – 14.4	12.6 – 13.9	16 (BE HEARD I), 16.5 (BE HEARD II)
Safety	Infection risk, cancer	No unexpected findings (Candida, IBD)	No unexpected findings (Candida, IBD)

a. Mean AN count; ABX, antibiotics; ADA, adalimumab; BKZ, bimekizumab; ITT, intention-to-treat; NRI, non-responder imputation; mNRI; modified NRI; MI, multiple imputation; SEC, secukinumab;
1. Porter M, *et al. SHSA* 2022; P3814; 2. Kimball AB, *et al. Lancet*. 2023; 401:747-761; 3. Kimball AB, *et al. AAD* 2023; Late-breaker.

Source: Prof. Kenneth B. Gordon, MoonLake

Phase 3: Emerging evidence of improved overall outcomes

MoonLake

Secukinumab (Cosentyx)

- **IL-17A only inhibitor**
- Traditional mAb (~151kDa)

Can you alter tunnel development?

Patients with no increase in draining tunnels, %[1]
(Observed)

Can you prevent hospitalizations and surgical interventions?

Patients with any rescue surgical intervention, n (%) [2]
(Observed)

Week 16, n (%)	**PBO N= 363**	**SECQ2W N = 361**
Any rescue surgical intervention	19 (5.2)	8 (2.2)
Incision and drainage	17 (4.7)	7 (1.9)
Excision	2 (0.6)	1 (0.3)

EHSF, European Hidradenitis Suppurativa Foundation; SEC, secukinumab
1. Bechara FG, *et al. EHSF 2023*; P144; 2. Van der Zee, *et al. EHSF 2023*; S-0905.

Source: Prof. Kenneth B. Gordon

Phase 2: Several JAK-1 inhibitors under investigation for HS

MoonLake

AAD

Povorcitinib

- **JAK-1 inhibitor**
- Small molecule

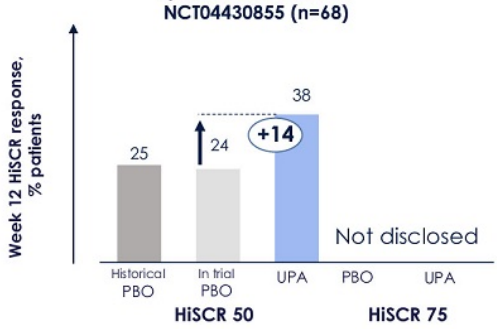
Povorcitinib Phase 2[1]
NCT04476043 (n=209)

75mg QD, 16 weeks, NRI

Upadacitinib (Rinvoq)

- **JAK-1 inhibitor**
- Small molecule

Upadacitinib Phase 2[2]
NCT04430855 (n=68)



30mg QD, 12 weeks, NRI-C

Safety

Potential for significant monitoring and cancer risk

Real question is the therapeutic window?

NRI-C, non-responder imputation incorporating multiple imputation for missing data due to COVID-19
1. Kirby JS, *et al.* EADV 2022. P0004; 2. Kimball AB, *et al.* AAD 2023. P43799.

Source: Prof. Kenneth B. Gordon, MoonLake

Open label: Izokibep HiSCR data "open" to interpretation

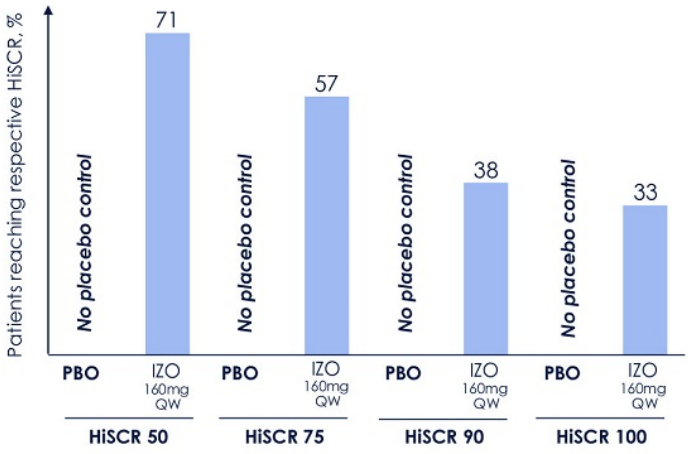
MoonLake

Izokibep

- **Synthetic ligand trap targeting the IL-17A/A homodimer**
- Small size and albumin binding domain

AAD

Week 12 (Observed data, Study Part A)[1]



Considerations

- **Open label, non-placebo-controlled**
- **HiSCR response rates in open label studies typically do not translate in randomized placebo-controlled trials**[2-5]

Other observations:

- One dose, n= 30 patients;
- Low AN count at baseline (mean 9.7);
- Predominantly moderate population AN count ⩾3 for enrollment;
- Draining tunnel count not disclosed;
- 80% TEAEs; 40% injection site reactions; 1 case IBD
- As observed analysis

IBD, inflammatory bowel disease; IZO, Izokibep; AN Count, total number of abscess and inflammatory nodules

1. Papp K, *et al. AAD* 2023: Late-breaker; 2. Casseres RG, *et al. J Am Acad Dermatol.* 2020; 82:1524-1526; 3. Kimball AB, *et al. Lancet*. 2023; 401:747-761; 4. Gottlieb A, et al. Journal of Investigative Dermatology 2020;140, 1538e1545; 5. NCT04988308

Source: Prof. Kenneth B. Gordon

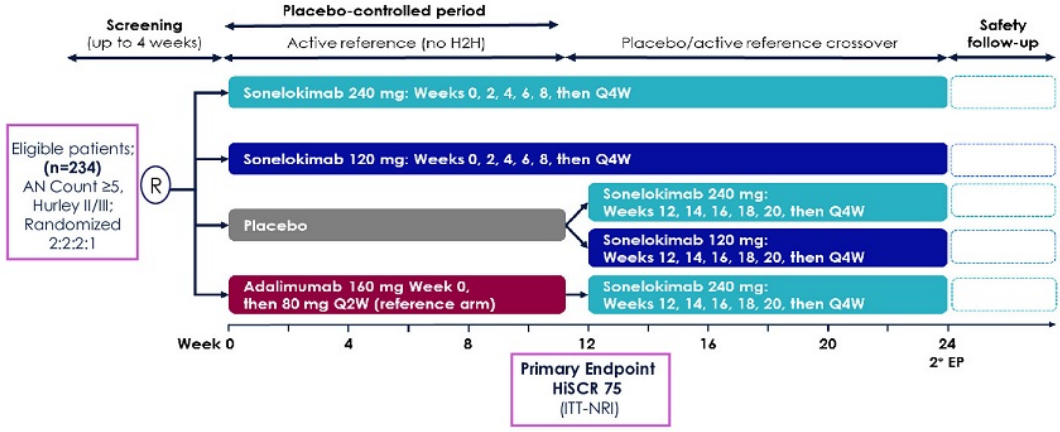
MIRA trial with the IL-17A and IL-17F inhibiting nanobody sonelokimab reading out June 2023

MoonLake

Sonelokimab

- IL-17A and IL-17F inhibiting nanobody
- Small size (40 kDa)
- Albumin binding domain

MIRA Trial Design



Source: Prof. Kenneth B. Gordon, MoonLake

Key study design elements of the MIRA trial are comparable to pivotal Phase 3 HS trials

MoonLake

Study element	PIONEER I / II[a]	SUNSHINE / SUNRISE[b]	BE HEARD I / II[c]	MIRA
Stage	Phase 3	Phase 3	Phase 3	Phase 2
Size	n=307 / n=326	n=541 / n=543	n=505 / n=509	n=234
Design	R, DB, PC	R, DB, PC	R, DB, PC	R, DB, PC (AR)
Dose arms	1 ADA, placebo	2 SEC, placebo	3 BKZ, placebo	2 SLK, 1 ADA, placebo
Key inclusion criteria - Baseline AN count - Hurley stage	≥3 II and III	≥5 I, II and III	≥5 II and III	≥5 II and III
Primary endpoint	HiSCR50 W12	HiSCR50 W16	HiSCR50 W16	HiSCR75 W12
Stratification	Hurley stage and concomitant ABX (PII)	Region, concomitant ABX, and body weight	Hurley stage and concomitant ABX	Hurley stage and prior biologic use
Primary analysis	ITT-NRI Cochran-Mantel-Haenszel[1]	ITT-mNRI (MI) Logistic regression[2] (Hurley stage, baseline AN)	ITT-mNRI (MI) Logistic regression[1]	ITT-NRI Cochran-Mantel-Haenszel[1]
Previous biologic use	not allowed	allowed	allowed	allowed
Concomitant ABX	not allowed / allowed	allowed	allowed	allowed
Handling of new ABX - any ABX - for HS	included NRI	included Data handling rules[3]	mNRI (2° included)[4] mNRI	incl. NRI

[1]including the stratification factors; [2]including the stratification factors and other covariates; [3]only NRI if AN count ≥50% compared to baseline; [4]primary analysis mNRI ALL-ABX, secondary analysis mNRI HS-ABX; A=abscess, ABX=antibiotics, AR=active reference, DB=double-blind, DT=draining tunnel, ITT=intention-to-treat, PC=placebo-controlled, N=nodule, NRI=non-responder imputation, mNRI=modified NRI (only patients with missing data due to lack of efficacy or safety), R=randomized

[a]Kimball AB, *et al. N Engl J Med*. 2016; 375:422-34; [b]Kimball AB, *et al. Lancet*. 2023; 401:747-761; [c]Kimball AB, *et al. AAD* 2023; Late-breaker

Source: Prof. Kenneth B. Gordon, MoonLake

What about the future of HS management?

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- Need to think **long-term, consistent disease control**
- **Intervening early** to prevent permanent adverse impact of disease
- Need to get to **higher levels of response without compromising safety**

Source: Prof. Kenneth B. Gordon

MoonLake

MoonLake R&D Update

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Key learnings from Prof. Gordon

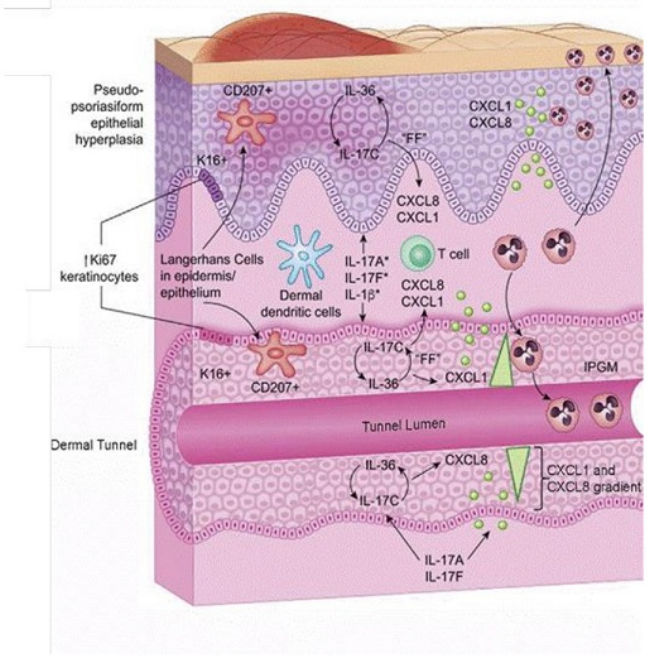
- HS is **more frequent** than previously thought, with prevalence **~2%** and **high unmet need**
- HS has **low diagnostic and treatment rates** – but inflammation needs to be addressed early (**"window of opportunity"**), ideally with an asset that can impact on tunnels
- IL-17 emerging as the key therapeutic MoA, and **IL-17 A & F as the leading option** for patients – hope with SLK
- ***"Apples-to-Apples"*:** High-quality, pivotal-like trial designs are critical – attention to detail needed to compare data

Key discussion points

1. IL-17F is a **unique target** in HS and other inflammatory diseases
2. A **unique molecule** & binding characteristics of SLK
3. MLTX **pivotal-like study designs** with read-out end of June & beyond

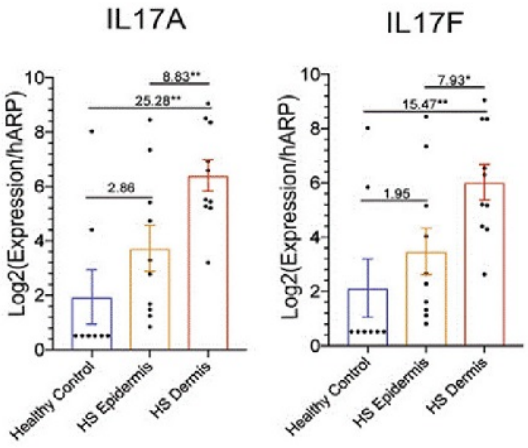
Source: MoonLake Clinical

1. Vicious circle in HS with crosstalk of immune cells with keratinocytes



mRNA expression levels

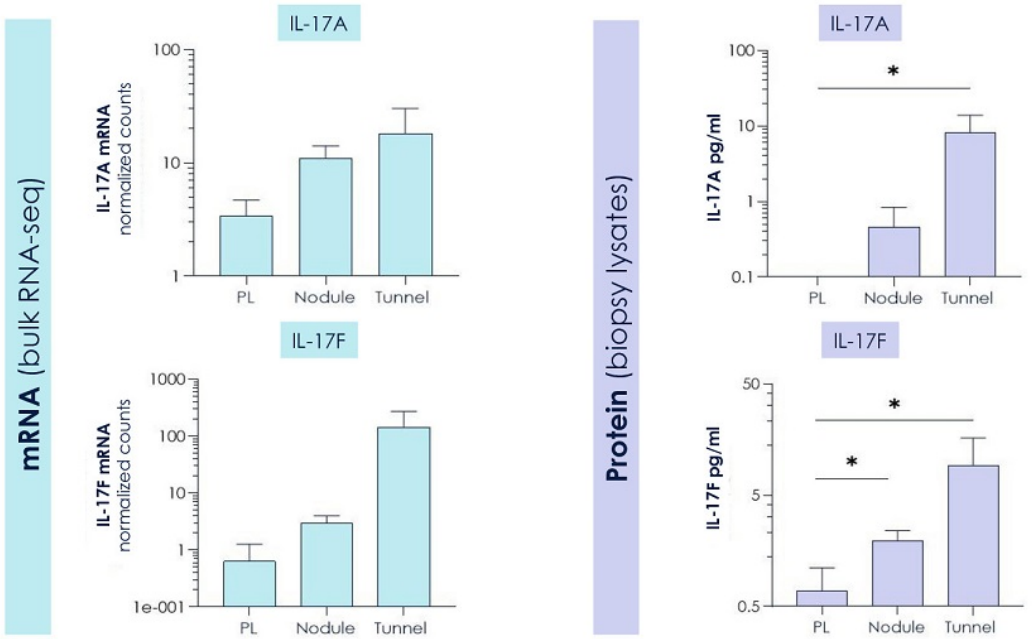
by anatomical compartment



Source: Navrazhina K, et al. J Allergy Clin Immunol 2021;147:2213–24

1. IL-17F is specifically upregulated in HS lesions

MoonLake



PL = perilesional skin

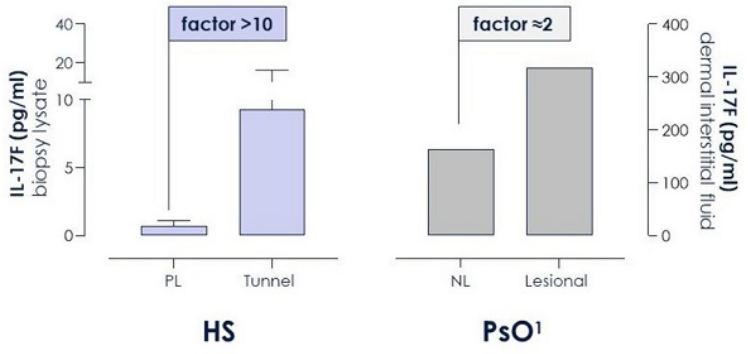
Note: Mean±SEM of cytokine protein levels in lysates from perilesional and lesional punch biopsies (n=7 independent patients with two technical replicate measurements. mRNA data is represented as normalized raw counts in the respective donors as well as respective skin compartments (n=4). Kruskal-Wallis test and uncorrected Dunn's test. *p<0.05

Source: MoonLake Research, Monasterium

1. IL-17F is the dominant IL-17 cytokine in HS lesions

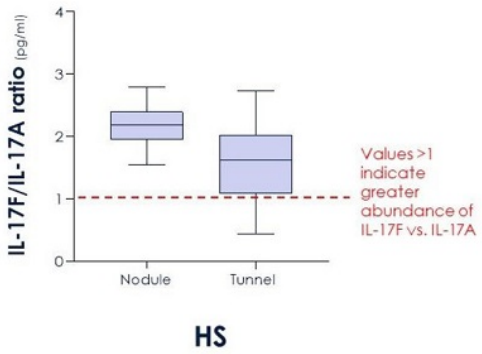
MoonLake

Upregulation of IL-17F in HS vs. PsO



(PL = perilesional skin)

Abundance of IL-17F vs. IL-17A in lesions



In HS inflammatory lesions, IL-17F protein levels are between **1.5 and 2.2 x** higher than IL-17A

Notes: Mean±SEM of cytokine protein expression levels in lysates from perilesional (PL) and lesional HS punch biopsies (n=7 independent patients with two technical replicate measurements). Differences in IL-17F protein levels were significantly different between peri-lesional and nodules and tunnels, respectively (Mann-Whitney test p<0.05). 1 Data from Kolbinger et al. J Allergy Clin Immunol 2017;139:923–932: differences between lesional and non-lesional (NL) PsO were not significant (p=0.11)

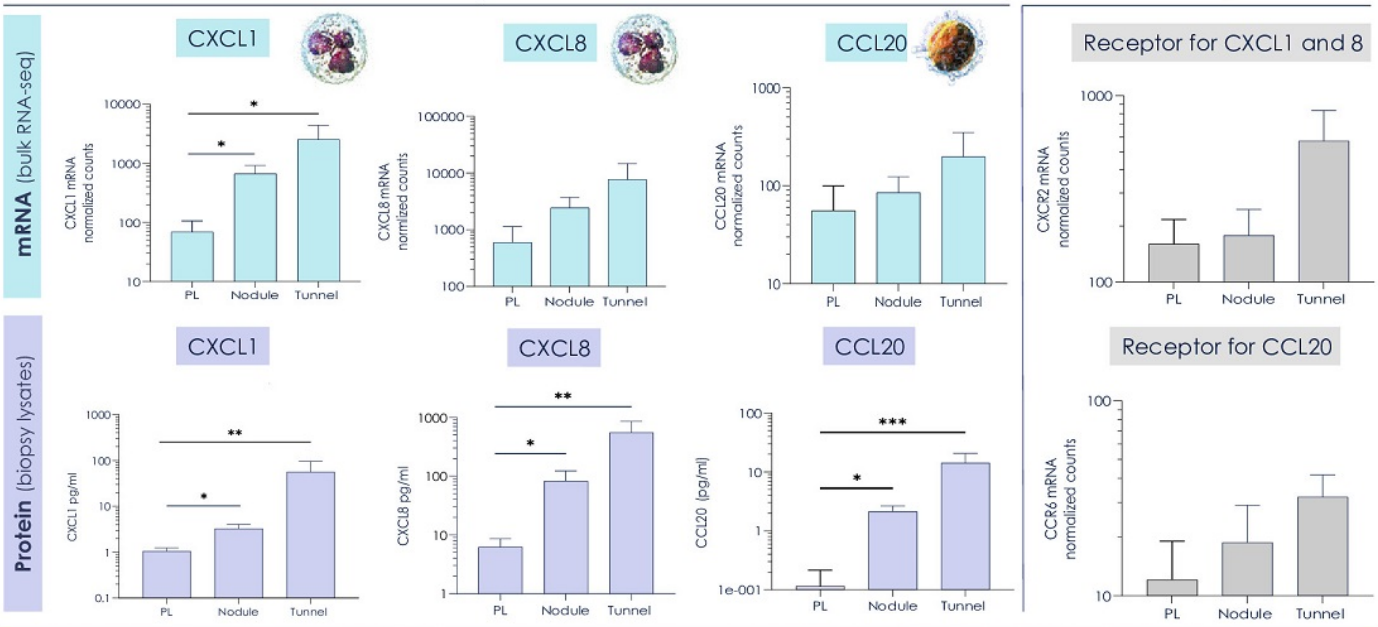
Source: MoonLake Research, Monasterium

1. Upregulation of key IL-17-induced chemo-attractants in HS lesions

MoonLake

Chemo-attractive mediators for neutrophils and Th17 cells

...and their receptors



Notes: Mean ± SEM of cytokine levels in tissue lysates from n=7 independent patients, mRNA data shown as normalized raw counts in the respective donors as well as respective skin compartments; |. Kruskal-Wallis test and uncorrected Dunn's test, *p<0.05, **p<0.01, ***p<0.001
CCL20 = MIP (macrophage inflammatory protein)-3α; CCR6 = receptor to CCL20; CXCL1 = GROα; CXCL8 = IL-8; CXCR2 = receptor to CXCL1 and CXCL8

Source: MoonLake Research, Monasterium

1. IL-17F potently activates human KCs, independently of IL-17A, to release the mediators that are upregulated in HS

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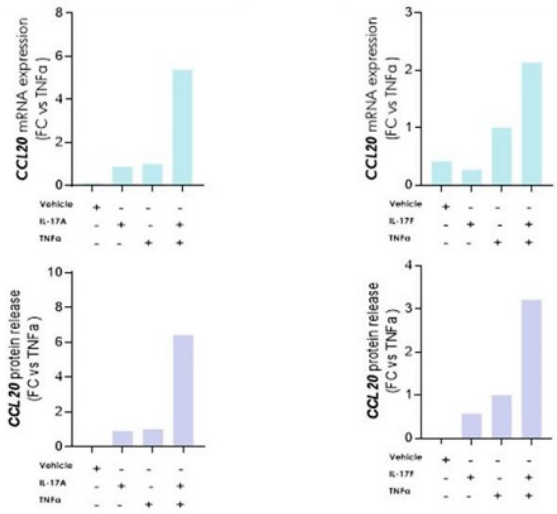
IL-17A pro-inflammatory effects in KCs

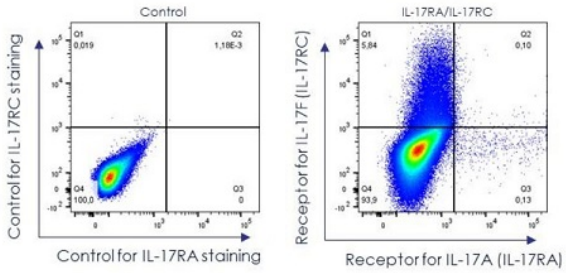
IL-17F pro-inflammatory effects in KCs

IL-17F receptor expression

mRNA (qRT-PCR)

Protein (ELISA)





IL-17F stimulates production of CCL20 in KCs, a major chemo-attractant for Th17 cells, **strongly up-regulated in HS**

Normal human **KCs express the receptors** for IL-17A (IL-17RA) and IL-17F (IL-17RC) on their surface

Evidence for a **higher and exclusive expression** of IL-17RC

Notes: mRNA data is shown as mean±SEM from n=3 independent experiments. Each dots represents the average of two technical replicate measurements. CCL20 gene expression as fold change versus TNFα (set at '1') after normalization to GAPDH. CCL20 protein data is from n=2 independent experiments. ELISA readouts are shown as mean±SD versus TNFα (set at '1'). Each dots represents the average of two technical replicate measurements

Source: MoonLake Research, Monasterium

1. Why IL-17A & F inhibition is the most attractive MoA in HS

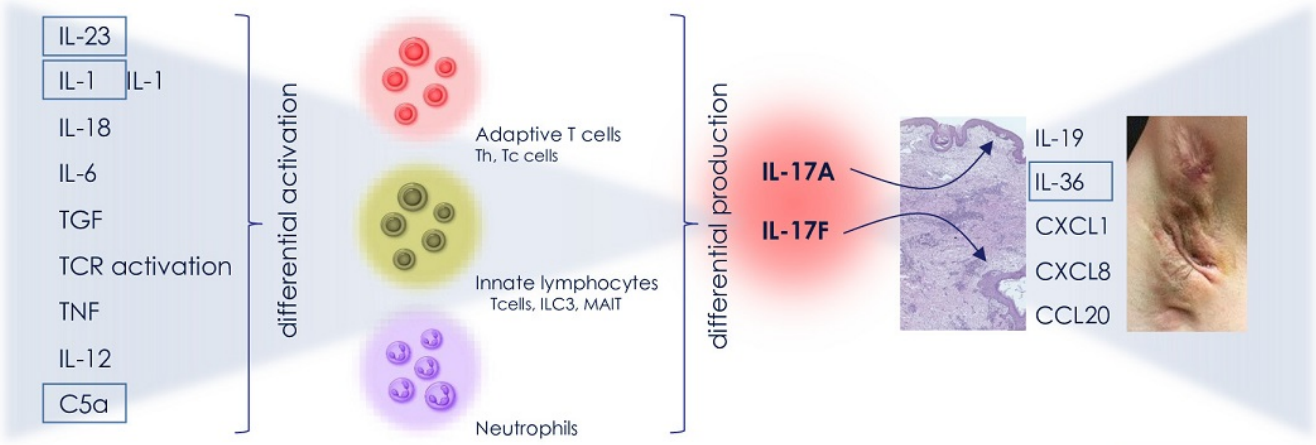
MoonLake

Multiple stimuli induce subsets of immune cells to produce IL-17A and F

Different cell types preferentially produce IL-17 A and/or F

IL-17A and F as "bottleneck" in HS pathology

IL-17A and F induce multiple pro-inflammatory effectors, e.g. activation of keratinocytes



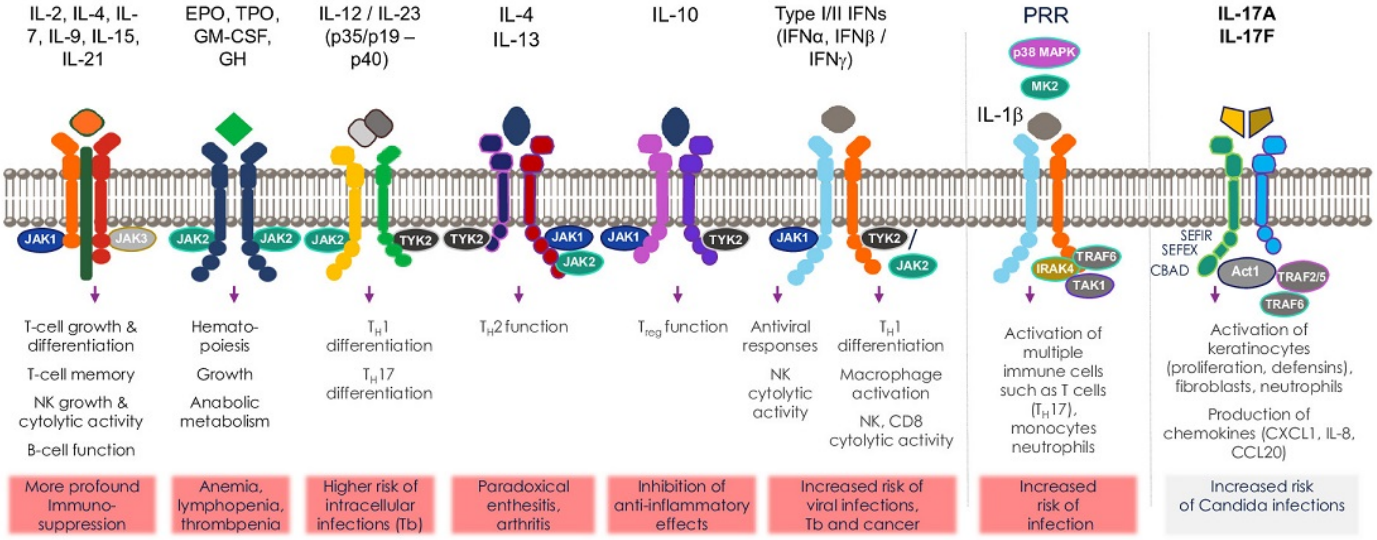
Failed clinical trials

Source: MoonLake Clinical

1. IL-17 represents a unique and potentially safer MoA vs. other options

MoonLake

- Jak/Tyk2 inhibitors affect multiple cytokine pathways explaining broad immunosuppressive and unwanted side effects
- MK2 and IRAK4 are involved in the epithelial reaction to danger signals



Act1, IL-17R adaptor protein; AP1, activator protein 1; Arid5a, AT-Rich interaction domain 5A; C/EBPβ, CCAAT/enhancer-binding protein β; CBAD, C/EBPβ activation domain; CD, cluster of differentiation; DDX3X, DEAD-box helicase family member; EPO, erythropoietin; GH, growth hormone; GM-CSF, granulocyte-macrophage colony-stimulating factor; HuR, human antigen R; IL, interleukin; IFN, interferon; JAK, Janus kinase; MAPK, mitogen-activated protein kinase; NF-κB, nuclear factor κB; NK, natural killer; PRR, pattern recognition receptor; SEFIR, similar expression of fibroblast growth factor and IL-17Rs; SEFEX, SEFIR extension; TAK1, TGFβ activated kinase 1; T_H, T-helper cell; TRAF, TNF-receptor associated factor; TPO, thrombopoietin; TYK, tyrosine kinase

Source: Modified from Gadina M, et al. Rheumatology 2019; 58:i4-i16; McGeachy MJ, et al. Immunity. 2019; 50:892-906. MoonLake Clinical

2. PK/PD pattern in PsO favors 'intermittent' dosing scheme

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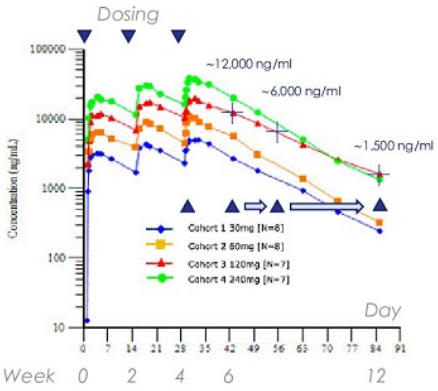
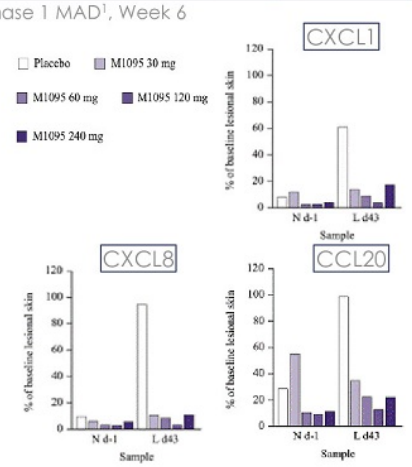
Sonelokimab induction

Phase 1 MAD[1], effect of Q4W dosing on SLK trough levels



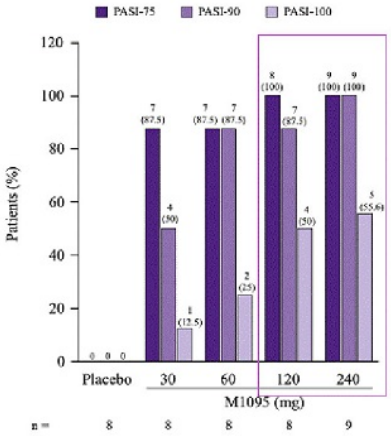
Sonelokimab molecular response

Phase 1 MAD[1], Week 6



Sonelokimab clinical response

Phase 1 MAD[1], Week 12



- High levels of **clinical response seen at week 12** following molecular remission at week 6 ('disease cascade concept')
- PK/PASI simulations indicate **stable clinical response with Q4W dosing scheme** despite significant drop of SLK trough levels vs. Q2W
- PK/PASI simulations indicate **maximum response with week 0, 2, 4 induction scheme and Q4W** by week 20
- Induction scheme in MLTX phase 2 (HS and PsA) is **week 0, 2, 4, 6, 8** as confirmed in PhIIb PsO study

1. Svekova D. et al. J Am Acad Dermatol 2019;81:196-203; Merck Quantimed data on file

Source: MoonLake Clinical

2. PD pattern supports disease control in PsO with intermittent inhibition

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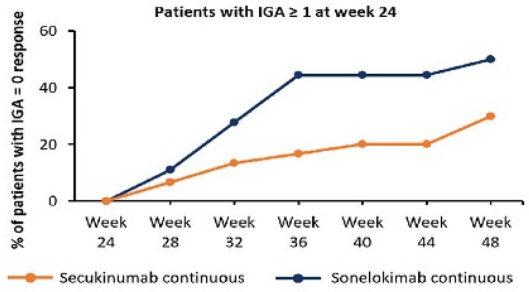
BJD British Journal of Dermatology
IMPROVING PATIENT OUTCOMES IN SKIN DISEASE WORLDWIDE

RESEARCH LETTER

Maintenance of response in moderate-to-severe psoriasis after withdrawal of the IL-17A and IL-17F nanobody sonelokimab – Is there a role for IL-17F in disease reoccurrence?

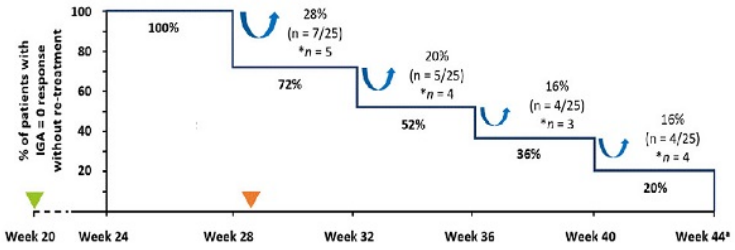
Kristian Reich, Eva Cullen, Mark Weinberg

First published: 20 April 2022 | https://doi.org/10.1111/bjd.21617



Main findings

- Disease modification: 20% of responders at week 24 do not require re-treatment to maintain full clearance at week 44, retreatment rapidly re-establishes clearance in 80% patients with disease re-occurrence
- Nanobody® allows patients that do not reach skin clearance at 24 weeks to progress to clearance at 6 months in 50% of cases
- SLK withdrawal/retreatment group received 50% less total monthly injections (wk 24-48) than group receiving secukinumab to reach same level of clearance



Source: MoonLake Clinical, BJD

2. SLK clinical data supports a superior safety profile vs BKZ

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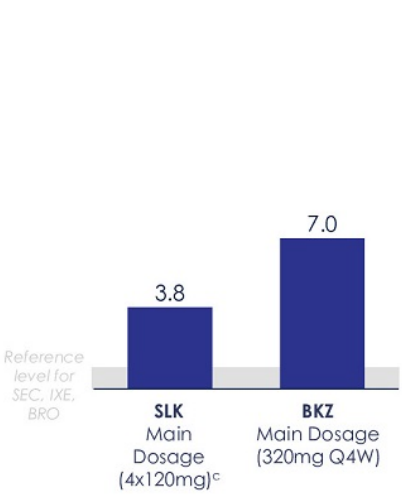
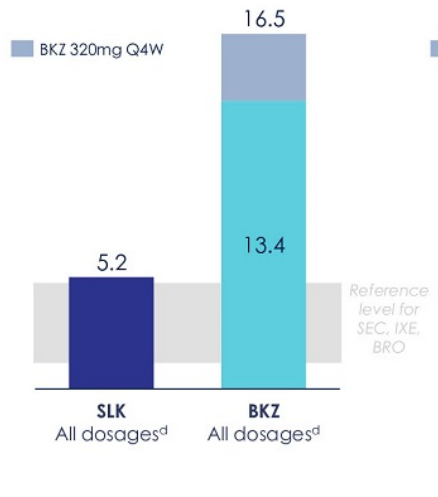
Incidence of oral Candida infections in Ph2 PsO (%)

Initial Period[a 1,2]



One year[b 1,3]



Incidence of oral Candida infections in Ph3 HS (%)

BE HEARD trials[e 4]

Note: Data is not based on Head-to-Head comparisons. a For SLK Phase II and BKZ Phase II (BE ABLE 1), "initial period" is Weeks 0–12; b For SLK Phase II, "1 year" is Weeks 12–52 for Week 12 completers; for BKZ Phase II extension (BE ABLE 2), "1 year" is Weeks 12–60 for PASI 75 responders at Week 12; c Main psoriasis dosage is 120 mg with normal load (Weeks 0, 2, 4, 8); d "All dosages" for SLK includes 30 mg and 60 mg for 1-year data; most patients were on continuous or intermittent 120 mg; "All dosages" for BKZ includes 64 mg and 160 mg (13.4%); incidence for 320 mg Q4W dosage is 16.5%; e Pooled data from 320 mg Q2W groups of Be Heard I and II; 1. Papp KA, et al. Lancet 2021;397:1564–75; 2. Papp KA, et al. J Am Acad Dermatol 2018;79:277–86; 3. Blauvelt A, et al. J Am Acad Dermatol 2020;83:1367–74; 4. Kimball A, et al. late breaker presentation at AAD march 2023, New Orleans

Source: Cited references, MoonLake Clinical

2. Unique binding characteristics of SLK optimises IL-17 inhibition

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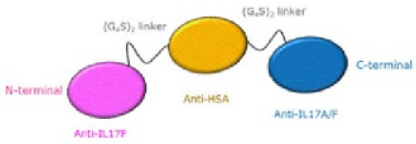
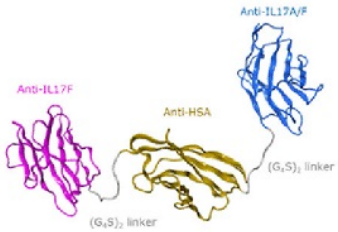
Representation of SLK

Schematic

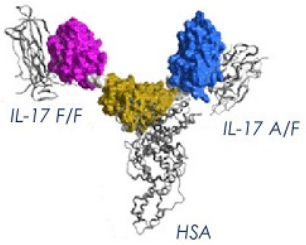


Chimeric homology

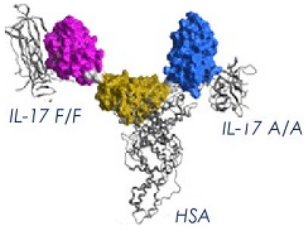


Best fit tetrameric models

Model 1



Model 2



Main findings

- 3D model indicates **simultaneous interaction** of SLK with two IL-17 **dimers** and human **albumin**
- **No issues** in terms of steric hindrance are present
- Binding epitopes for **dimer binding block receptor binding epitope residues**

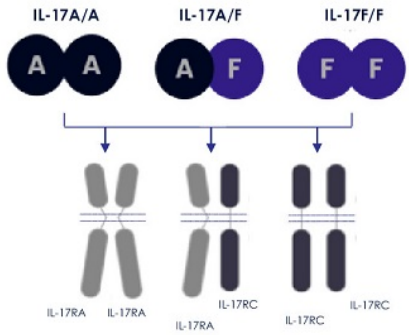
Note: Chimeric homology model of SLK was built using three X-ray structures of three VHH domains (PDB ID: 5L20, PDB ID: 5C3L, llama nanobody). The 3D structure of SLK, in complex with its antigens, was then used for the identification of putative binding epitopes via protein-protein docking, and the evaluation, via molecular dynamics (MD) simulations, of the possibility of the simultaneous binding to the three target proteins, was then performed. Structural superposition between the initial anti-IL17 nanobody model and the best poses obtained by docking and MD, was then created.

Source: MoonLake Research, Merck Serono S.p.A.

2. Potency of SLK is on the pM scale, much higher than Cosentyx™

The lower the value, the higher the inhibition

IC50 (nM) Methodology	Interaction tested	Sonelokimab	Secukinumab (Cosentyx™)	fold potency difference
Alphascreen (protein – protein interaction assay)	IL-17 **AA** with IL-17RA	0.039	5.23	134
	IL-17 **AF** with IL-17RA	0.066	4.978	75
	IL-17 **AF** with IL-17RC	0.026	10.40	400
	IL-17 **FF** with IL-17RC	0.013	n/a*	n/a*



Background knowledge: IL-17A primarily binds to IL-17RA, IL-17F primarily binds to IL-17RC[1]

Our main interpretation regarding expected optimized benefit-risk profile vs BKZ:

- Largely superior potency of SLK over current IL-17 inhibitor market leader secukinumab regarding IL-17AA and AF activity
- Inhibitory profile of SLK high potency across all dimers: IL-17AA, IL-17AF, IL-17FF
- *n/a, not applicable as SEC does not bind to IL-17F

1 Goepfert A, et al. Immunity. 2020; 52:499-512. Note: IC50 = concentration inhibiting interaction of dimers with receptor by 50%

Source: Merck KGaA, Darmstadt, Germany, MoonLake Clinical

2. SLK is a differentiated inhibitor of IL-17A and IL-17F

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Surface Plasma Resonance – K_D (normalized to SLK IL-17A/A affinity)

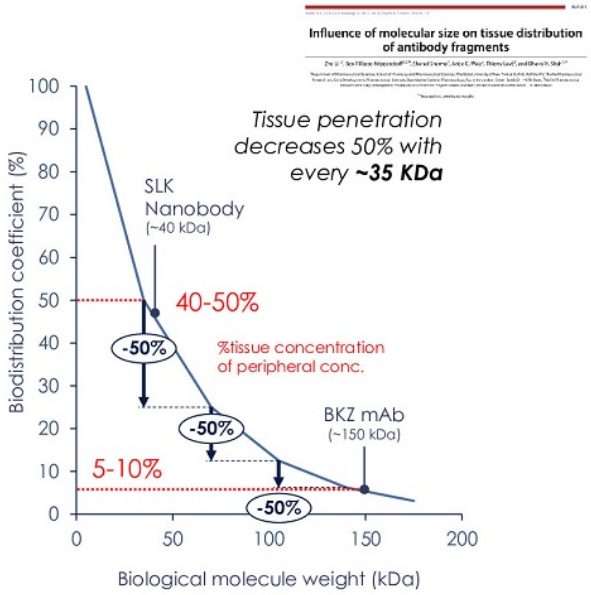
- SLK binds **all dimers**, with high affinity (or with fewer molecules), at the **pM scale**, incl. **IL-17FF**
- As previously described[1], less BKZ required to bind IL-17AA than IL-17FF (**higher affinity to AA**)
- SLK binds **IL-17AA with 100x higher affinity** than SEC, and **IL-17FF with 7x higher affinity** than BKZ

1 Adams R, et al. Front. Immunol. 11:1894

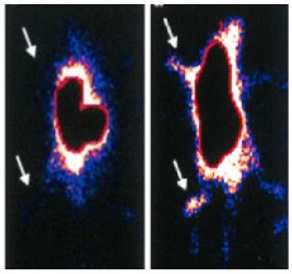
Source: MoonLake Research, Biofidus Analytical Germany

2. The penetration advantage of sonelokimab

Molecule size matters in inflammation

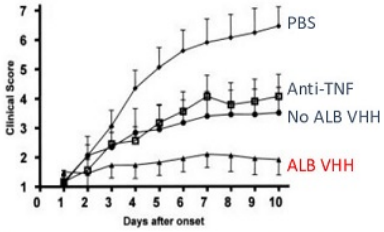


Albumin binding matters in inflammation



Distribution 24 h after iv nanobodies (left) and effects of anti–tumor necrosis factor (anti-TNF) VHH protein constructs on the clinical progression of established collagen-induced arthritis (CIA, below)

Coppieters K et al., Arthritis Rheum 54, 1856-66 (2006)



Sonelokimab's albumin-binding domain may allow for enrichment at sites of chronic inflammation

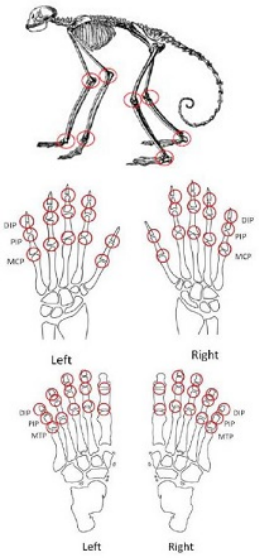
Source: Cited references, MoonLake

2. Arthritic joint assessment suggests SLK efficacy in deep tissue

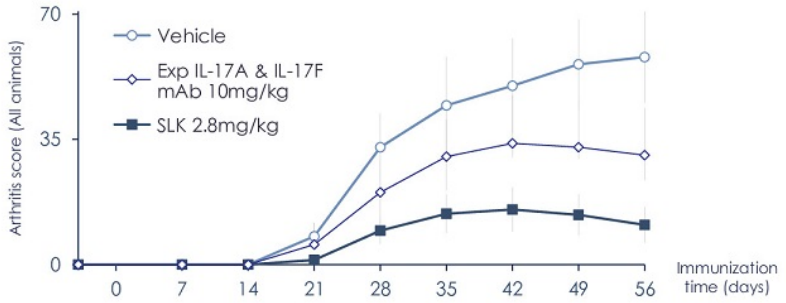
MoonLake

Arthritic joint assessment for SLK[1]

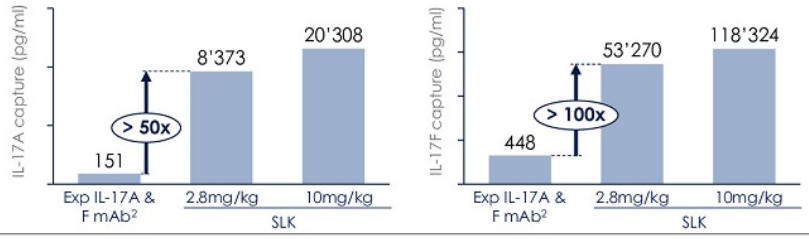
Collagen-induced arthritis



Clinical improvement with SLK vs. standard mAb without Alb binding domain[2]



Synovial fluid binding Analysis (D56)



1 Assessed joints for the determination of Arthritis Score. The scored joints are indicated (red circles) for the large joints (top panel), for limb joints (middle panel) and hind limb joints (bottom panel). DIP, distal interphalangeal joint; PIP, proximal interphalangeal joint; MCP, Metacarpophalangeal joint; MTP, Metatarsophalangeal joint; 2 Exp IL-17A & IL-17F mAb (Novimmune); SLK=sonelokimab

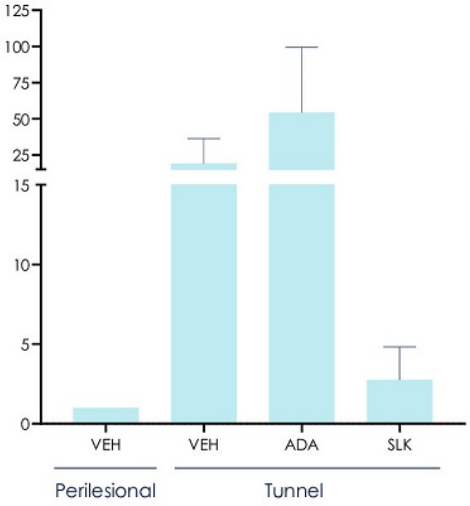
Source: MoonLake Research, Modified from SBL271-002 (n=46)

2. SLK has enhanced inhibitory effect in deep HS lesions vs. Humira®

MoonLake

Inhibition of CCL20 in tissue vs. Humira®

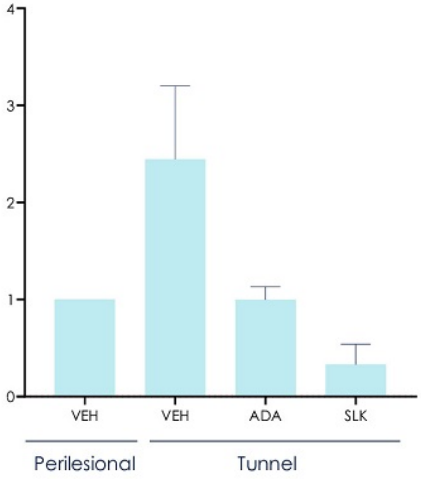
Biomarker expression in proprietary HS organ culture model, CCL20 mRNA (relative expression)[1]



VEH = vehicle
ADA = adalimumab
SLK = sonelokimab

Inhibition of CXCL8 in tissue vs. Humira®

Biomarker expression in proprietary HS organ culture model, CXCL8 mRNA (relative expression)[1]



SLK inhibits inflammation in tunnels effectively

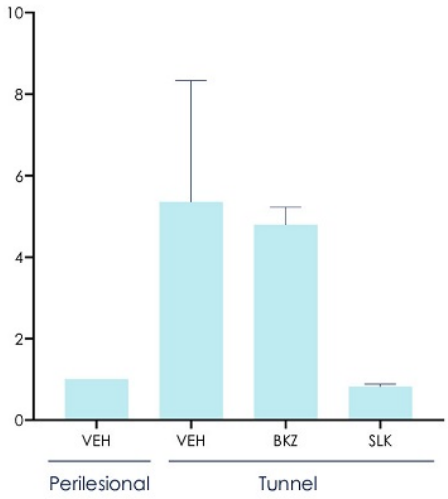
Notes: CCL20 mRNA and CXCL8 mRNA relative expression levels (Mean±SEM) measured by q-RT-PCR in air-liquid interface cultures of perilesional and tunnel biopsies from n=4 independent donors following 24-hr treatment ex vivo with ADA 30 µg/mL, SLK 10 µg/mL or vehicle buffer. One donor excluded from CXCL8 analysis due to inconclusive ADA inhibition. Average expression of the HECT, UBA and WWE Domain Containing E3 Ubiquitin Protein Ligase 1 (HUWE1), and Microtubule Actin Crosslinking Factor 1 (MACF1) was used as housekeeping internal reference. CCL20 and CXCL8 mRNA xpression are normalized to vehicle-treated perilesional skin.
Source: MoonLake Research

2. SLK has enhanced inhibitory effect in deep HS lesions vs. Bimzelx®

MoonLake

Inhibition of CCL20 in tissue vs. Bimzelx®

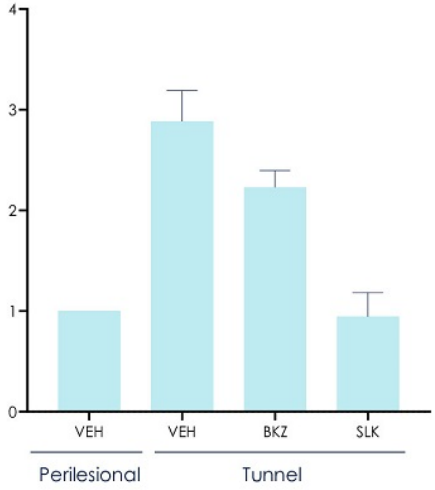
Biomarker expression in proprietary HS organ culture model, CCL20 mRNA (relative expression)[1]



VEH = vehicle
ADA = adalimumab
SLK = sonelokimab

Inhibition of CXCL8 in tissue vs. Bimzelx®

Biomarker expression in proprietary HS organ culture model, CXCL8 mRNA (relative expression)[1]

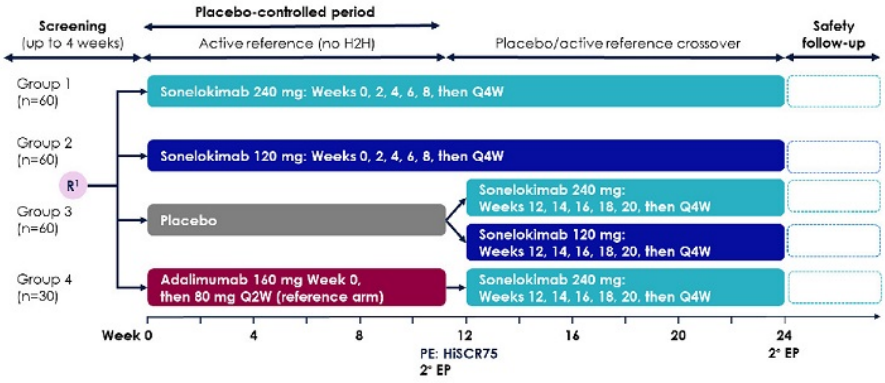


SLK inhibits inflammation in tunnels effectively

Notes: CCL20 mRNA and CXCL8 mRNA relative expression levels (Mean±SEM) were measured by q-RT-PCR in air-liquid interface cultures of perilesional and tunnel biopsies from n=2 independent donors following 24-hour treatment ex vivo with bimekizumab 10 µg/ml (BKZ), sonelokimab 10 µg/ml (SLK), or vehicle buffer (VEH). Average expression of the HECT, UBA And WWE Domain Containing E3 Ubiquitin Protein Ligase 1 (HUWE1), and Microtubule Actin Crosslinking Factor 1 (MACF1) was used as housekeeping internal reference. CCL20 and CXCL8 mRNA expression are normalized to vehicle-treated perilesional skin.

Source: MoonLake Research

3. The MIRA trial in HS has the design of a pivotal study



Key design elements of MIRA

- Global study (North America and Europe) with approx. 60 sites
- Double-blind, placebo-controlled, active reference arm
- N=234 patients randomized
- Moderate-to-severe HS (≥ 5 lesions, Hurley 2 and 3, previous biologic use)
- HiSCR 75 as primary endpoint
- ITT-NRI as primary analysis, secondary analyses include mNRI, logistic regression with MI, as observed; PE and key secondary endpoints multiplicity controlled
- Antibiotic use for HS imputed as NR
- Stratification for Hurley stage and previous biologic use

Source: MoonLake Clinical

3. Key MIRA design elements are comparable to pivotal HS trials

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Study element	PIONEER I / II[1]	SUNSHINE/ SUNRISE[2]	BE HEARDI / II[3]	MIRA
Stage	Phase 3	Phase 3	Phase 3	**Phase 2**
Size	n=307 / n=326	n=541 / n=543	n=505 / n=509	**n=234**
Design	R, DB, PC	R, DB, PC	R, DB, PC	**R, DB, PC (AR)**
Dose arms	1 ADA, placebo	2 SEC, placebo	3 BKZ, placebo	**2 SLK, 1 ADA, placebo**
Key inclusion criteria - Baseline AN count - Hurley stage	 ≥3 II and III	 ≥5 I, II and III	 ≥5 II and III	 **≥5** **II and III**
Primary endpoint	HiSCR50 W12	HiSCR50 W16	HiSCR50 W16	**HiSCR75 W12**
Stratification	Hurley stage and concomitant ABX (PII)	Region, concomitant ABX, and body weight	Hurley stage and concomitant ABX	**Hurley stage and prior biologic use**
Primary analysis	ITT-NRI Cochran-Mantel-Haenszel[a]	ITT-mNRI (MI) Logistic regression[b] (Hurley stage, baseline AN)	ITT-mNRI (MI) Logistic regression[a]	**ITT-NRI** **Cochran-Mantel-Haenszel[a]**
Previous biologic use	not allowed	allowed	allowed	**allowed**
Concomitant ABX	not allowed / allowed	allowed	allowed	**allowed**
Handling of new ABX - any ABX - for HS	 included NRI	 included Data handling rules[c]	 NRI (2° included)[d] NRI	 **incl.** **NRI**

Notes: [a] including the stratification factors; [b] including the stratification factors and other covariates; [c] only NRI if AN count ≥50% compared to baseline; [d] primary analysis mNRI ALL-ABX, secondary analysis mNRI HS-ABX; A=abscess, ABX=antibiotics, AR=active reference, DB=double-blind, DT=draining tunnel, ITT=intention-to-treat, PC=placebo-controlled, N=nodule, NRI=non-responder imputation, mNRI=modified NRI (only patients with missing data due to lack of efficacy or safety), R=randomized

1 Kimball AB, et al. N Engl J Med. 2016; 375:422-34; 2 Kimball AB, et al. Lancet. 2023; 401:747-7613; 3 Kimball AB et al. Late-breaker AAD 2023;

Source: MoonLake Clinical

3. MIRA trial in HS: Primary and key secondary endpoints

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Primary endpoint

- HiSCR75[1] response at Week 12

Key secondary endpoints

- HiSCR50 response at Week 12
- % Change from baseline in IHS4
- DLQI total score of 5 or below at Week 12
- Patients achieving NRS30[2] in Patient's Global Assessment of Skin Pain at Week 12

Data presentation end of June

- Baseline characteristics, participant disposition, HiSCR50/75/90 by visit, lesions count change from baseline (N, A, DT) and responder endpoints (including AN90/100, DT100, *ad hoc* information on HiSCR100)
- Safety summary (TEAEs, AESIs, SAEs)

1 HiSCR75: Clinical response per Hidradenitis Suppurativa Clinical Response (HiSCR) criteria, ie, ≥75% reduction from baseline in total abscess and inflammatory nodule (AN) count, with no increase from baseline in abscess or draining fistula count; 2 NRS30: ≥30% reduction and at least 1 unit reduction from baseline in numerical rating scale (NRS), among patients with baseline NRS ≥3; DLQI, Dermatology Life Quality Index; IHS4, International Hidradenitis Suppurativa Severity Score System

Source: MoonLake Clinical

3. Current status of patient exposure & Baseline in MIRA trial

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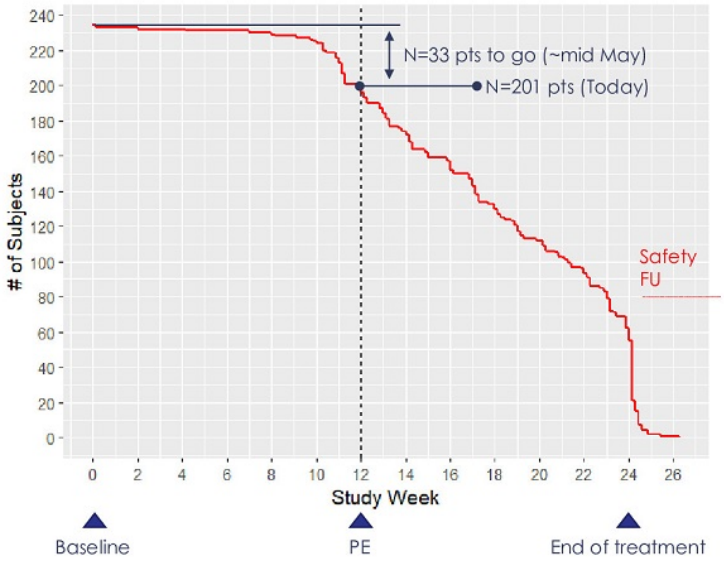
Patient exposure



Patient baseline characteristics

Patient Characteristic	MIRA
Age, years, mean	37.6
Gender, female, %	59.8
Race, White, %	85.0
BMI, kg/m^2, mean	33.8
Smoking, current, %	46.6
Duration of HS, years, mean	7.8
Lesions, mean	
- AN count	14.0
- DT	3.5
Hurley stage, %	
- I	0
- II	66.2
- III	33.8
DLQI, mean	12.0
Prior biologic use, %	16.2
Concomitant ABX use, %	11.5

Note: Data cut-off as of April 11th

Source: MoonLake Clinical

3. The MIRA baseline characteristics are comparable to pivotal HS trials

MoonLake

Patient characteristic	PIONEER I / II[1]	SUNSHINE / SUNRISE[2]	BE HEARD I / II[3]	MIRA
Age (years), mean	34.9 – 37.8	35.5 – 37.3	36.7 / 36.6	**37.6**
Gender, female, **%**	59.5 – 69.3	54 – 57	63.0 / 50.7	**59.8**
Race, White, **%**	75.8 – 87.7	74 – 81	77.8 / 81.5	**85.0**
BMI, kg/m^2, mean	31.3 – 34.5	31.4 – 32.8	33.8 / 32.3	**33.8**
Smoking, current, %	52.9 – 67.3	50 – 58	43.0 / 48.1	**46.6**
Duration of HS, years, mean	8.8 – 9.9	6.6 – 8.2	9.0 / 7.0	**7.8**
Lesions, mean				
- AN count	10.7 – 14.4	12.6 – 13.9	16 / 16.5	**14.0**
- DT	3.0 – 4.6	3.2 – 3.6	3.8 / 3.4	**3.5**
Hurley stage, %				
- I	0	2 – 6	0	**0**
- II	52.3 – 54.6	51 – 60	50.3 / 61.1	**66.2**
- III	45.4 – 47.7	28 – 46	49.7 / 38.9	**33.8**
DLQI, mean	14.1 – 16.3	*not given*	12.0 / 10.8	**12.0**
Prior biologic use, %	0	20 - 26	25.0 / 13.2	**16.2**
Concomitant ABX use, %	0 / 19	10 - 14	7.9 / 9.0	**11.5**

1 Kimball AB, et al. N Engl J Med. 2016; 375:422-34; 2 Kimball AB, et al. Lancet. 2023; 401:747-7613; 3 Kimball AB et al. Late-breaker AAD 2023;

Source: MoonLake Clinical

HS: Valid Ph2 designs are typically replicated in Ph3

MoonLake

HS examples

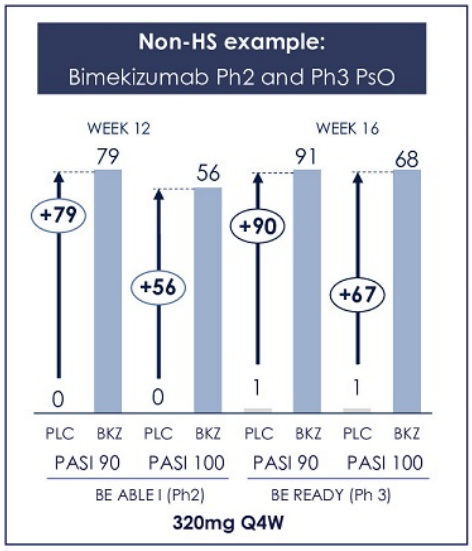
✓ Adalimumab Ph2 HS results (double-blind, placebo-controlled, two active dose arms, n = 154 patients, n = 26 sites) ***were predictive*** of Ph3 results[1,2]

✗ Secukinumab Ph2 HS results (open-label, uncontrolled, n = 20 patients, single-center) ***were not predictive*** of Ph3 results[3,4]

✗ Bimekizumab Ph2 HS results (double-blind, placebo-controlled, active reference, one dose of BKZ, n = 88 patients, bayesian-augmented control design) ***were not fully replicated*** in Ph3[5,6]

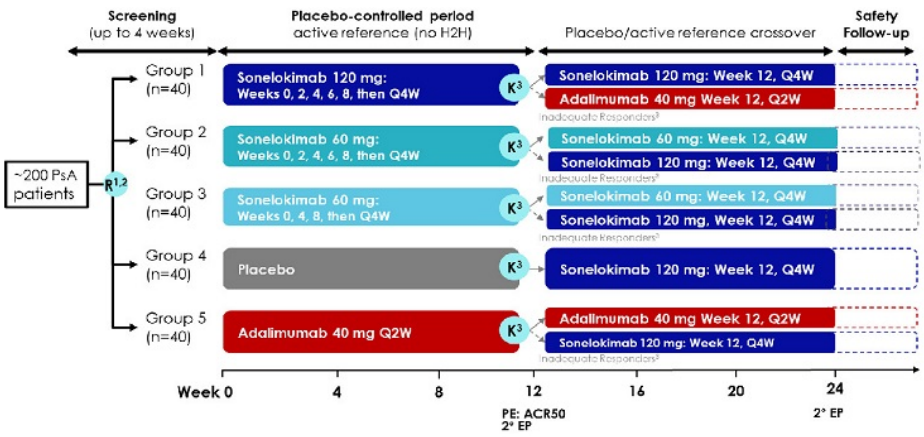
Non-HS example

✓ Bimekizumab Ph2 PsO results (double-blind, placebo-controlled, 5 active dose arms, n = 250 patients, multiple sites in 6 countries) **were *predictive*** of Ph3 results[7,8]



1. Kimball AB, et al. Ann Intern Med. 2012; 157:846-55; 2. Kimball AB, et al. Br J Dermatol. 2014; 171:1434-42 and personal communication; 3. Caseres RG, et al. J Am Acad Dermatol. 2020; 82:1524-1526; 4. Kimball AB, et al. Lancet. 2023; 401:747-7613; 5. Glatt S, et al. JAMA Dermatol. 2021; 157:1279-1288; 6. Kimball AB et al. Late-breaker AAD 2023; 7. Papp KA, et al. J Am Acad Dermatol. 2018; 79:277-286; 8. Gordon KB, et al. Lancet. 2021; 397:475-486;
Source: MoonLake Clinical Development

3. ARGO trial in PsA: will release data towards end of 2023



Key design elements of ARGO

- Global study (North America and Europe) with approx. 60 sites
- Double-blind, placebo-controlled, active reference arm
- N=200 patients planned to be randomized
- Active PsA (TJC68 ≥3, SJC ≥3, currently active PsO and/or dermatologist confirmed diagnosis of PsO)
- ACR50 as primary endpoint
- ITT-NRI as primary analysis; key secondary endpoints multiplicity controlled
- Stratification for gender and previous biologic use

Notes: Randomization stratified by sex (male/female) and prior exposure to biologic agents (yes/no); 2 At Treatment Period at Week 0/Day 1, all eligible participants will be randomized 1:1:1:1:1; 3 In the cross-over period, starting at Week 12, participants on sonelokimab 120 mg that have not achieved an adequate response will receive adalimumab 40 mg Q2W until Week 24; participants on sonelokimab 60 mg (started at baseline Q2W or Q4W) that have not achieved an adequate response will receive sonelokimab 120 mg every 4 weeks until week 24; participants on adalimumab that have not achieved an adequate response will receive sonelokimab 120 mg Q4W until Week 24; an adequate response is defined as a reduction of the tender and swollen joint count of at least 20%. Patients on placebo will receive sonelokimab Q4W until Week 24

Source: MoonLake Clinical

3. ARGO trial in PsA: Primary and Key Secondary Endpoints

MoonLake

Primary endpoint

- ACR50 response[1] at Week 12

Key secondary endpoints

- PASI90 response at Week 12 (patients with psoriasis involving ≥3% BSA at baseline)
- ACR20 response at Week 12

Other secondary endpoints

- ACR70 response at Week 12
- Minimal disease activity (MDA) at Week 12, defined as meeting 5/7 of the following:
  - ≤1 tender joint
  - ≤1 swollen joint
  - PASI score ≤1 or psoriasis affecting ≤1% BSA
  - Pain score ≤15 (0–100 VAS)
  - Patient global activity score ≤20 (0–100 VAS)
  - HAQ-DI score ≤0.5
  - ≤1 tender entheseal point
- Health Assessment Questionnaire Disability Index (HAQ-DI) at Week 12

1 ACR50: 50% improvement in tender joint count (68 joints) and swollen joint count (66 joints), and 50% improvement in 3 of the following 5 measures: Patient's Global Assessment of Disease Activity (PtGADA), Physician's Global Assessment of Disease Activity (PhGADA), Patient's Assessment of Arthritis Pain (PtAAP), Health Assessment Questionnaire-Disability Index (HAQ-DI), high-sensitivity C-reactive protein (hs-CRP);ACR, American College of Rheumatology; BSA, body surface area; PASI, Psoriasis Area and Severity Index; VAS, visual analogue scale

Source: MoonLake Clinical

MoonLake

Summary: Differentiating science and clinical development of SLK

IL-17F is a unique target in HS and other inflammatory diseases

- IL-17F is specifically upregulated in HS more than in PsO
- Evidence for pro-inflammatory role independent of IL-17A

Unique molecule and binding characteristics of sonelokimab

- Simultaneous binding of serum albumin and two IL-17 dimers
- Potent inhibition of IL-17A/A with high affinity (100x more than SEC)
- Equal affinity for IL-17F/F, differently from BKZ
- Evidence for unique ability to penetrate deep tissues (small size, albumin-binding)

HS phase 2 study: pivotal-like study design with read-out end of June

- Baseline characteristics of participants similar to pivotal HS trials
- Phase 2 PsA trial ahead of schedule with primary read-out expected end of 2023

Source: MoonLake Clinical

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Financial Update & Path Forward

Many potential catalysts over the next 12 months

MoonLake

What we focused on today…

March 2023 — Competitor readouts

IL17-A & IL17-F inhibition now leading MoA in HS

Molecule characteristics provide additional upside

Other approaches not successful (MK2, Il23, IL1-a, TYK2, IRAK4 inhib.)

April 2023 — Capital Markets Day

$10Bn+ market opportunity in HS

MIRA baseline characteristics demonstrate robustness of MLTX trials

Non-clinical research highlights SLK's differentiated profile

End June 2023 — HS primary data

MLTX to present MIRA topline results from week 12 analysis

"meet or beat"

…and there is a whole lot more to come

Early Q4 2023 — HS 24w data

Late 2023 — PsA primary data

Q1/Q2 2024 — PsA 24w data

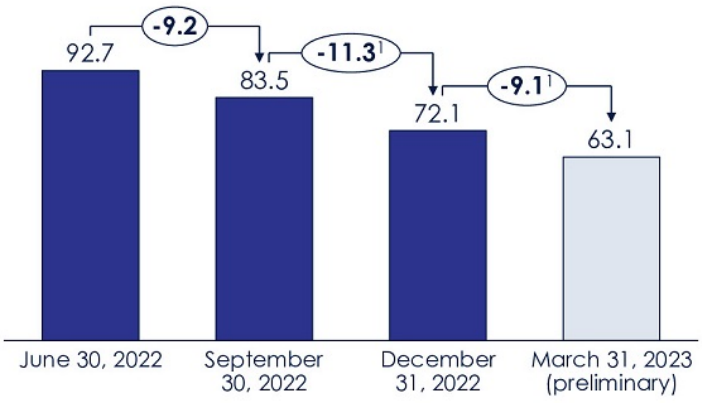
***"Best of two worlds"* next-gen IL-17**
Phase 3 ready in 3 multi-billion dollar indications
800+ patients across Ph1s and Ph2s
All Ph2s with active control arms
Supply capacity into 3rd year of launch

Expected cash runway until end of 2024 (HS TLFs + 18 months) *see next page*

Source: MoonLake Corporate

Expected cash runway now expected to the end of 2024

Cash, cash equivalents & short-term marketable securities
In USD M



- MLTX **ended Q1-2023 with $63.1m** in cash, cash equivalents and short-term marketable debt securities (at zero debt)
- **Cash burn in Q1-2023 of $9.1m** demonstrating cost-efficient set up and focus of MLTX
- **Expected runway until the end of 2024**, i.e. HS readout +18 months, covering:
  - Completion of ongoing Ph2 programs in HS and PsA
  - Preparation of Ph3s
  - All other base spend

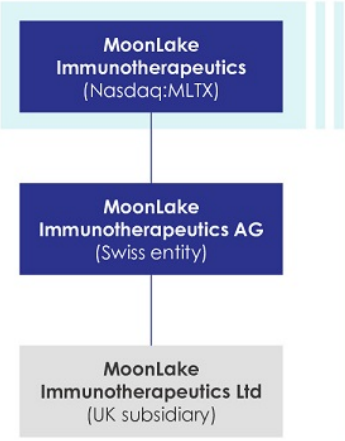
1 Differences may not add up due to rounding

Source: MoonLake Corporate

Reminder of MLTX's corporate structure and history

MoonLake

Organizational chart



- Publicly listed company and domestic filer
- Duly incorporated under the laws of the Cayman Islands
- Last remaining lock-ups from Business Combination released in Feb. 2023
- Controls MoonLake Immunotherapeutics AG[1]
- **Total diluted share count of 53.4m**[2]
  - Class A Ordinary Shares: 43,654,455
  - Class C Ordinary Shares[1]: 9,046,656
  - Unexercised options: 511,979
- S3 eligibility from May 1st 2023

1 At the Closing of the Business Combination between Helix Acquisition Corp (prior to the Closing, "Helix", and after the Closing "MoonLake") and MoonLake Immunotherapeutics AG ("MoonLake AG"), certain original shareholders of MoonLake AG transferred their MoonLake AG Common Shares to Helix and in return received 33.638698 MoonLake Class A Ordinary Shares per MoonLake AG Common Share (the "Exchange Ratio"). Other original shareholders of MoonLake AG (the "ML Parties") deferred this exchange and continued to hold their MoonLake AG Common Shares. To approximate the rights, obligations and restrictions that an ML Party would enjoy if it had executed the exchange at Closing, each ML Party received a number of MoonLake Class C Ordinary Shares equal to the number of MoonLake AG Common Shares held multiplied by the Exchange Ratio, with each MoonLake Class C Ordinary share granting their holders the same voting rights as a MoonLake Class A Ordinary Share but no economic participation. The Class C Ordinary Shares are automatically cancelled and substituted by an equal number of Class A Ordinary Shares when the ML Party transfers their MoonLake AG Common Shares to MoonLake. Ultimately, all MoonLake AG Shares will be held by MoonLake, and the Class C Ordinary Shares will have been substituted by an equal number of Class A Ordinary Shares. In the interim, MoonLake recognizes a noncontrolling interest equal to the ML Parties' proportionate interest in the net assets of MoonLake AG.

2 As per April 16, 2023

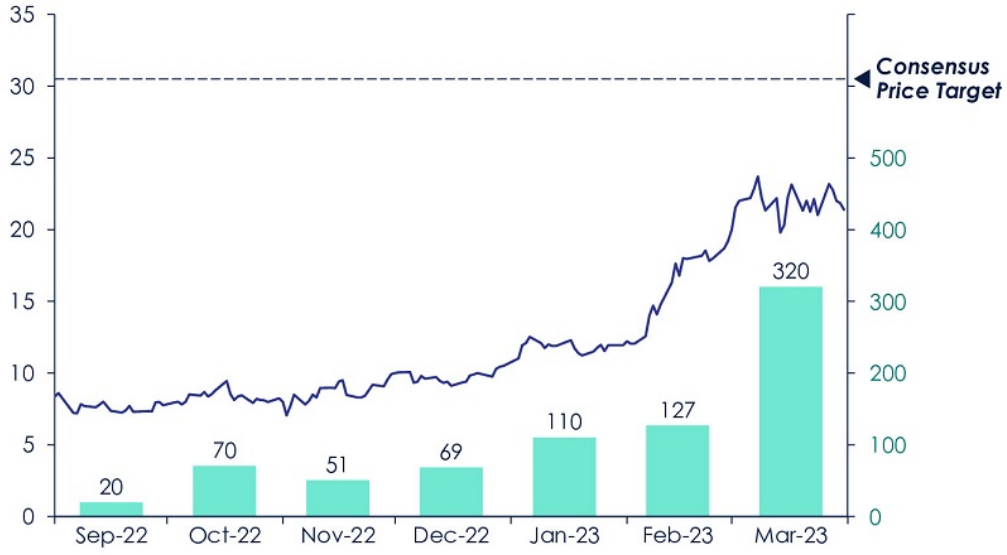
Source: MoonLake Corporate

Strong share price accompanied by increase in trading volume

MoonLake

Share price in USD

Average daily trading volume in '000



Analyst coverage

BTIG	$36
WEDBUSH	$33
BRYAN, GARNIER & CO	$32
Jefferies	$30
CANTOR Fitzgerald	$29
HCW H.C.WAINWRIGHT&CO.	$28
SVBLEERINK	$28
LIFESCI CAPITAL	$25
COWEN	n/a

This is Pre-HS data, and mostly only valuing HS/PsA

Source: MoonLake Corporate, Yahoo Finance, Analyst reports

Reflections on MLTX's path forward

MoonLake

Current owner

- **Phase 3 preparation well under way** incl. study designs, end-of-Ph2 meeting prep, clinical supply, autoinjector partnership, and org ramp up
- **HS and PsA** are feasible (also commercially), **AS and nr-axSpA** are *"low hanging fruits"*, **PsO** remains *"locked value"*, **other indications** provide significant optionality
- **Timing, approach and size of raise** as per strategic interests of MLTX – strong conviction of existing shareholders and new investors

Better owner

- **Strategic interest in I&I remains high** and SLK is a leading asset now in Derm and Rheum, with strategic potential across multiple indications and TAs
- **Logic of synergies, speed and breadth** to leverage an existing Ph III organization & leading commercial operation
- Single asset setup, simple org and concentrated ownership provide a **"deliverable deal"**

Source: MoonLake Corporate


MoonLake
W: moonlaketx.com | E: info@moonlaketx.com