KalVista Pharmaceuticals

Corporate Overview

January 2023

Forward-Looking Statements

This presentation and the accompanying oral presentation contain “forward-looking” statements within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as: "anticipate," "intend," "plan," "goal," "seek," "believe," "project," "estimate," "expect," "strategy," "future, "likely," "may," "should," "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding our future financial performance, business plans and objectives, timing and success of our clinical trials, our ability to obtain regulatory approval or the timing of regulatory filings, the potential therapeutic benefits and economic value of our lead product candidates, financing plans, competitive position, industry environment and potential market opportunities.

Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following: those related to our future financial performance, our ability to raise additional funding when needed, our ability to develop and maintain partnerships, our ability to identify and develop new products in a timely manner, the outcome, cost and timing of our product development activities and clinical trials, market size and acceptance of our products, our ability to maintain, protect and enhance our brand and intellectual property, our ability to continue to stay in compliance with applicable laws and regulations, our ability to scale our business and make key hires and such other factors as discussed under the section titled “Risk Factors” and elsewhere in our Annual Report on Form 10-K, definitive proxy statement and quarterly reports on Form 10-Q that we file with the Securities and Exchange Commission (“SEC”) as well as our other filings and the documents incorporated by reference therein, with the SEC.

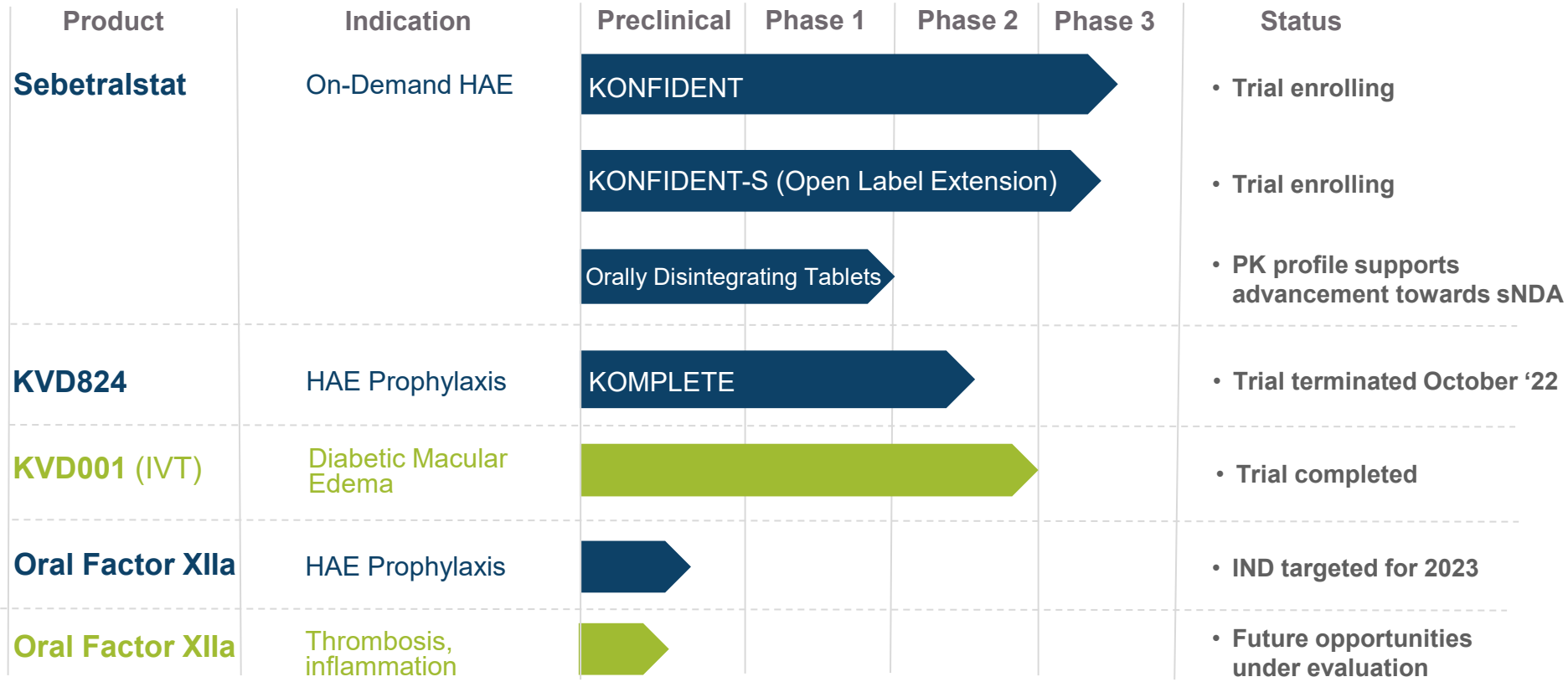
Any forward-looking statement made by us in this presentation and the accompanying oral presentation is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise. Certain information contained in this presentation may be derived from information provided by industry sources. We believe such information is accurate and that the sources from which it has been obtained are reliable. However, we cannot guarantee the accuracy of, and have not independently verified, such information.

This presentation shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or other jurisdiction.

Company Highlights

- Discovery, development, and commercialization of oral, small molecule protease inhibitors, with an initial focus on orphan disease hereditary angioedema (HAE)
- Enrolling Phase 3 KONFIDENT trial of sebetralstat as first oral on-demand treatment for HAE
  - Data anticipated H2 2023, NDA H1 2024
- Preclinical oral Factor XIIa program represents next stage of growth
  - Initial development as next generation HAE oral prophylaxis, advancing towards IND
  - Further implicated in thrombosis and other large market indications under evaluation
- All programs internally developed, with full rights and IP protection to at least late-2030s
- Funded to 2025
  - $122 million cash at 10/31/22 and $58 million registered direct offering completed December 2022

Program Portfolio



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Hereditary Angioedema (HAE)

Hereditary Angioedema (HAE)

- Genetic condition causing painful and dramatic swelling in various parts of the body
  - Primarily caused by defect in C1 inhibitor activity which leads to uncontrolled plasma kallikrein activity and excessive bradykinin release
- Orphan disease: incidence 1 in 10,000 to 1 in 50,000[1]
  - Minimum of 6,500 – 8,000 patients in US; similar in EU
  - Incidence appears to be consistent worldwide; average patient has ~2 attacks/month
- Approved therapies are primarily injected/infused - high unmet need for efficacious oral administration
- Total HAE market approximately $2 billion annual revenues in 2019; $4 billion 2026[2]
  - US and Europe primary existing markets; rest of world substantially underdiagnosed and treated
  - Generics in US have reduced total on-demand market revenues, though scripts remain steady

[1]www.haei.org; [2] EvaluatePharma

KalVista Oral Candidates Treat the Full Spectrum of HAE

Sebetralstat: On-demand/ Breakthrough Treatment

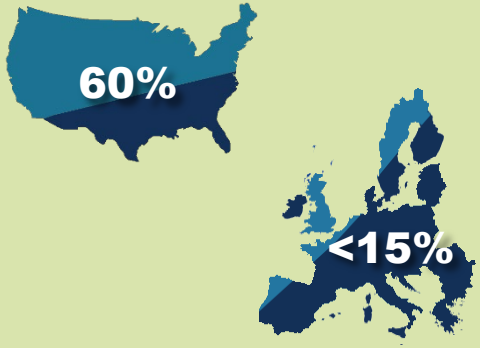
~40% of US market;
~85% in EU

Stable market share in both US (patient preference) and EU (limited prophy use)

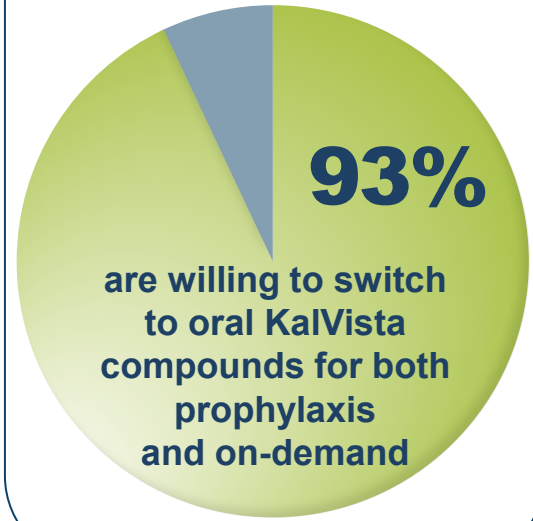
Approximately 100,000 treatable annual attacks in US; 150,000 in Europe

Factor XIIa inhibitor: Prophylaxis

~60% in US
~15% in EU



PATIENTS



Source: Company research and analysis

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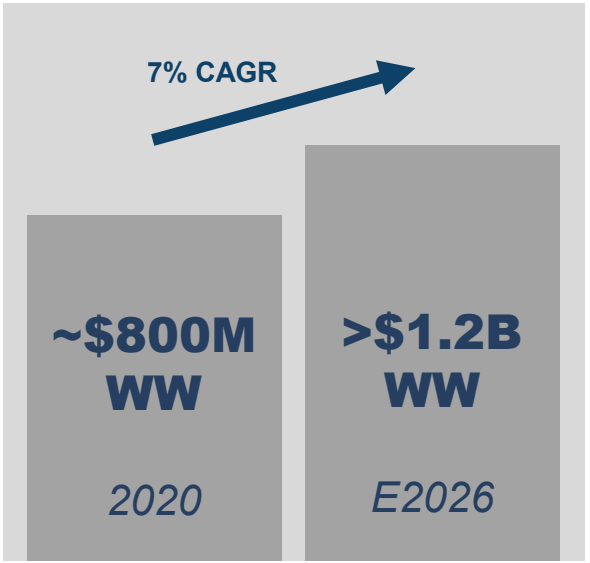
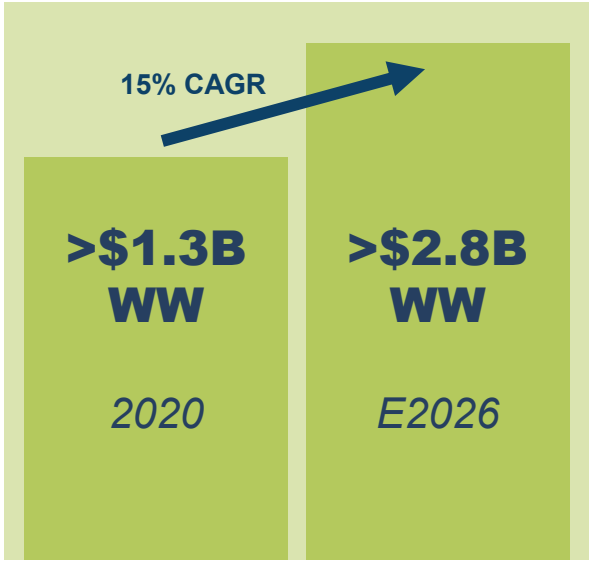
Branded HAE Market Estimated to be $4B Revenues by 2026

On-demand/ Breakthrough Treatment



Prophylaxis



Additional Market Growth

Untreated
Over 30% of patients do not treat every attack

Undiagnosed
30-60% globally

Normal C1 HAE (currently **no treatments**)

All market revenue estimates source: EvaluatePharma; other sources: Company research and analysis

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Sebetralstat: HAE On-Demand Therapy

Sebetralstat: Changing the Paradigm for HAE Treatment

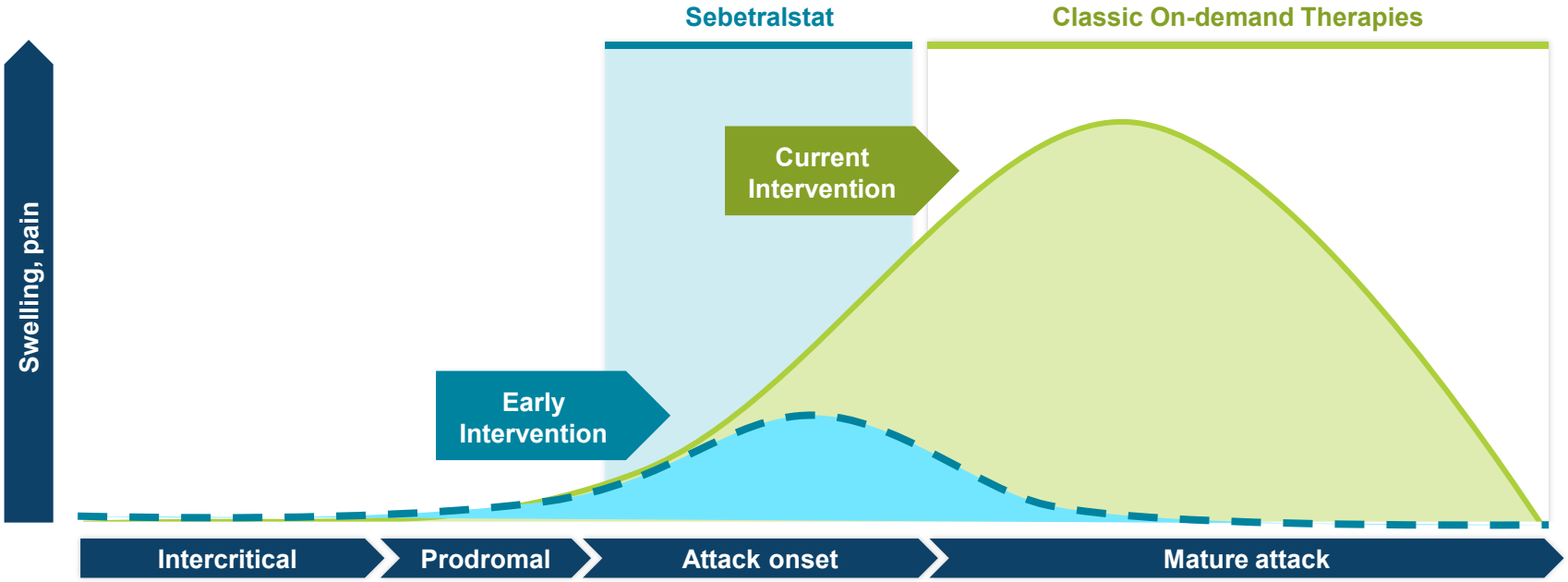
- All current on-demand options are injectable and have significant shortcomings
  - Icatibant (Firazyr and generic) is overwhelming market leader but administration can be painful and challenging
  - Other major therapies are IV delivery which is even more challenging and inconvenient
- Early treatment improves outcomes but under-treatment and late treatment are common
  - In a real-world study with Firazyr only 40% of attacks were treated within one hour[1]
  - Out of 6277 attacks recorded 53-67% remained untreated[2]
- In addition, most prophylaxis treatments are injectable and patients still have breakthrough attacks
  - All prophylaxis therapies are injected with one exception
- Sebetralstat is intended to reduce the barriers to on-demand treatment
  - Potential to improve treatment outcomes and increase the number of attacks treated on-demand
  - Attractive profile for both current on-demand **and** prophylaxis patients

[1]*Maurer M, et al. Hereditary Angioedema Attacks Resolve Faster and Are Shorter after Early Icatibant Treatment. PLoS ONE. 2013;8(2):e53773.*
[2]*Longhurst H J et al. Real-world outcomes in hereditary angioedema: first experience from the Icatibant Outcome Survey in the United Kingdom Allergy, Asthma & Clinical Immunology volume 14, Article number: 28 (2018)*

The Sebetralstat Treatment Vision

- Enable treatment of all attacks according to current guidelines
- Patients take sebetralstat at first symptoms of an attack
  - Act while symptoms are mild and swelling has not yet progressed significantly
- Attack development is halted in its earliest stages
- Sebetralstat dosing is straightforward and simple
  - Expected to be 1 or 2, 300 mg tablets, contained in an easy-to-access, individual package
  - Final formulation, including color and coating, already developed and patient-friendly
  - Easy to store, easy to carry, easy to take – dramatically different from icatibant or other injectables
- Oral disintegrating tablet (ODT) further enhances treatment options
  - Particularly valuable for younger patients or those with difficulty swallowing – 15 second dissolution
  - Phase 1 data announced October 2022, regulatory plan under development

“Flattening the Curve” of HAE Attack Progression With Early Initiation of On-demand Therapy



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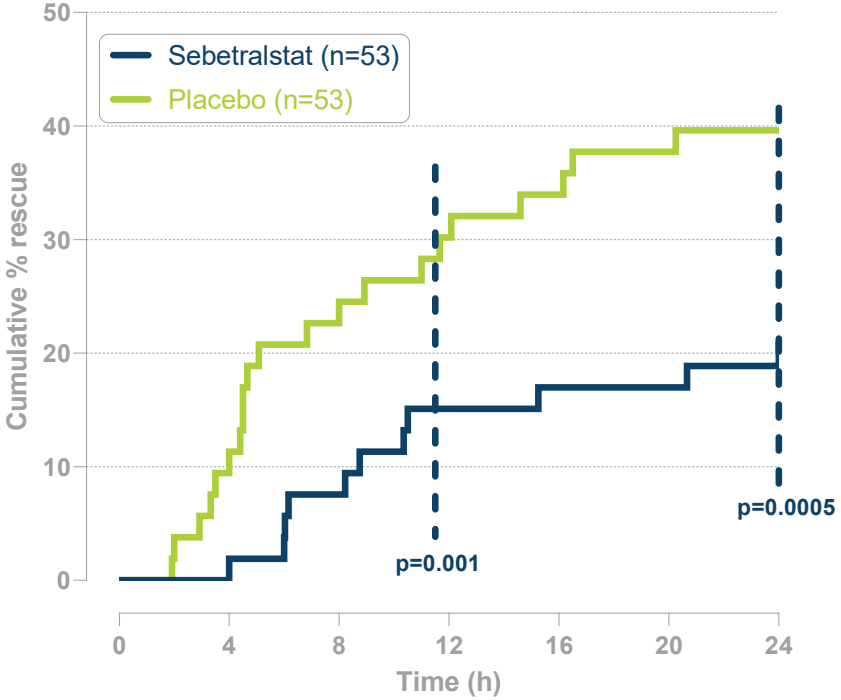
Positive Sebetralstat Phase 2 Clinical Trial Results

- Sebetralstat met all primary and secondary endpoints
  - Including endpoint being used as primary in ongoing KONFIDENT Phase 3 study
- Sebetralstat enables early intervention and maximises treatment success
  - Median time to treatment was 30 minutes
- Significantly improved patient reported outcomes of treatment effect and attack severity
  - Reduced time to beginning of symptom relief and attack resolution
- Sebetralstat was generally safe and well tolerated
  - No serious adverse events reported, and no patients withdrew due to adverse events

Sebetralstat Met Primary Phase 2 Endpoint



- Sebetralstat significantly increased time to rescue within 12 hours: p=0.001*
  - Placebo 30.2%
  - Sebetralstat 15.1%
- Efficacy maintained at 24 hours
  - p=0.0005*

Gehan's Generalized Wilcoxon Test

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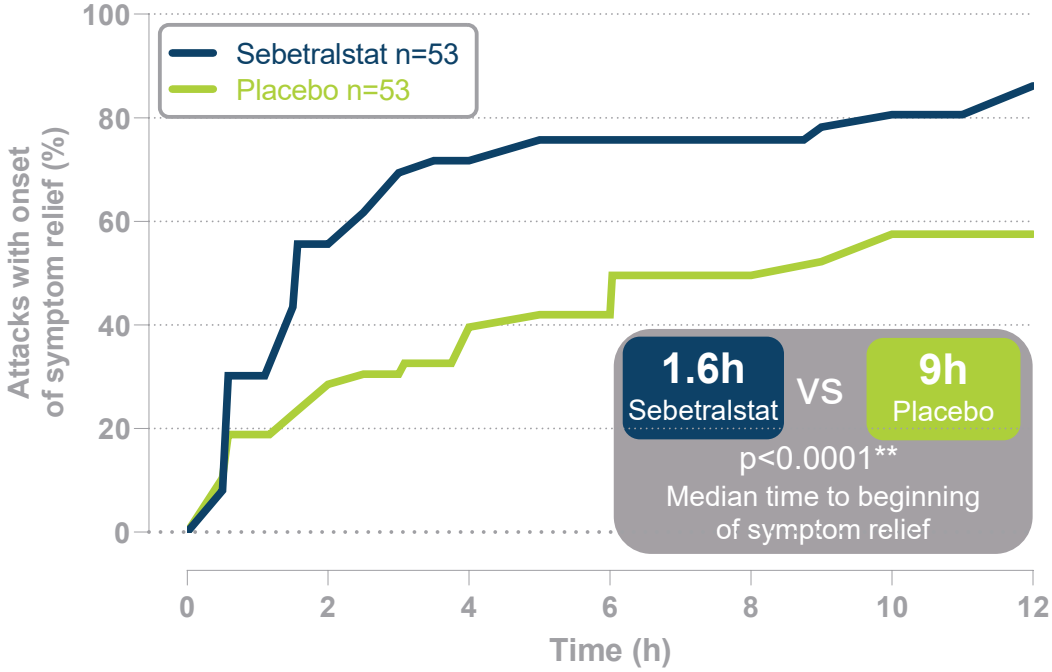
Sebetralstat Reduced Time to Beginning of Symptom Relief

- Assessed using Patient Global Impression of Change (PGI-C)
- Highly significant treatment effect compared to placebo
- **Phase 3 primary endpoint**



***Gehan's Generalized Wilcoxon Test Full analysis set*
Censoring occurs where HAE attack was not rated "a little better" or higher or conventional attack treatment was used within 12h
Data on File. KalVista Pharmaceuticals, Inc.

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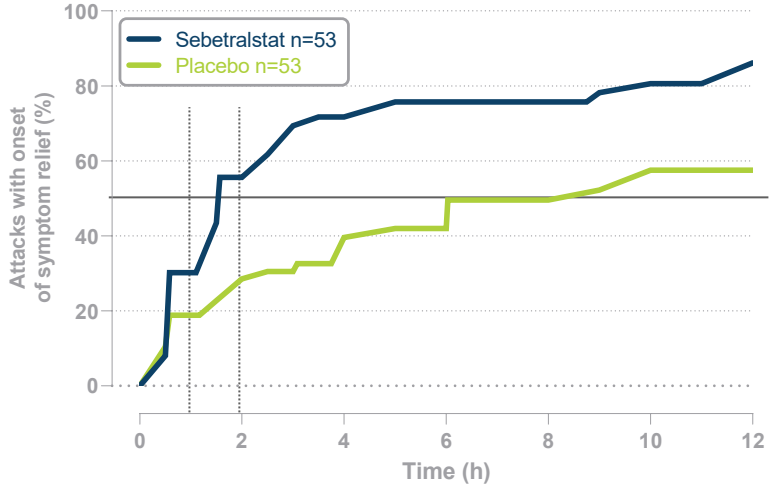
Sebetralstat Symptom Relief Time Similar to IV Injected Ruconest (rC1-INH)

Sebetralstat 1.6 hours; Placebo 9 hours
p<0.0001*

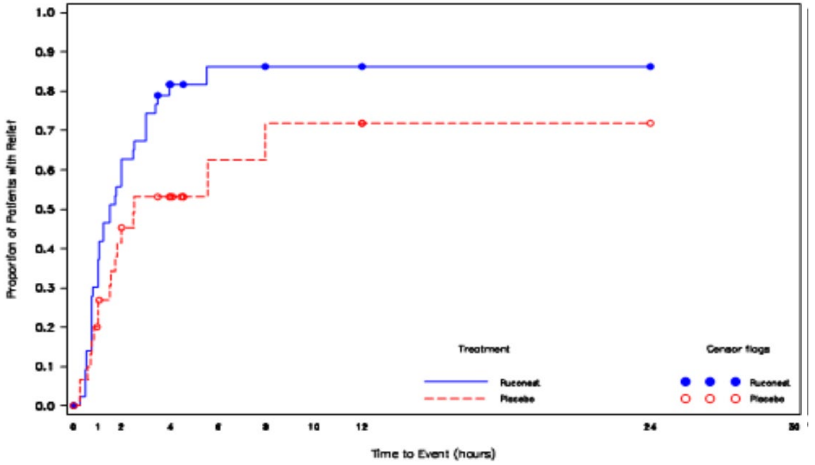
Patient Global Impression of Change (PGI-C)



Ruconest 1.5 hours; placebo 2.5 hours
p =0.031

Primary endpoint Ruconest Phase 3

Study 1310: Kaplan-Meier Plot of Time to Beginning of Relief of Symptoms with Persistence (Based on Questions 1 and 2 of the TEQ, with Persistence) in the RCT Phase: RCT ITT Analysis Set



**Gehan's Generalized Wilcoxon Test*
Ruconest data from Charles M. Maplethorpe, MD, PhD. Clinical Reviewer. Summary Basis of Approval, Recombinant C1 Esterase Inhibitor, STN: 125495/0.
The results of the trials for sebetralstat and Ruconest may not be directly comparable, as they are not from a single head-to-head clinical trial

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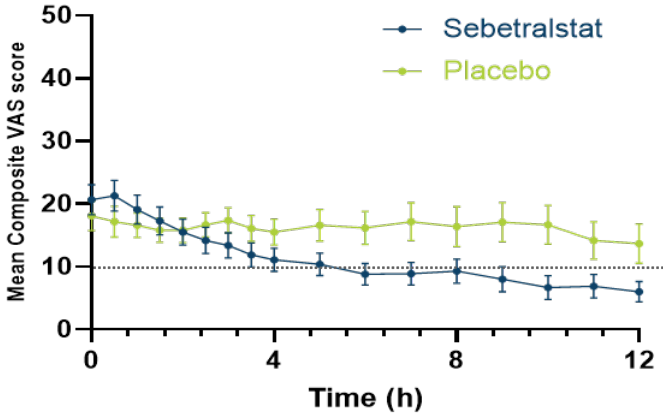
Sebetralstat VAS Reduction and Firazyr (icatibant)

Although VAS is not recommended by FDA it was previously used in phase 3 trials

- Early treatment with sebetralstat
  - Consistent with HAE treatment recommendations
  - Minimizes symptom scores
- Delayed treatment with icatibant
  - Delayed treatment leads to increased symptom scores before and after treatment



Firazyr data from Lumry et al., Ann Allergy Asthma Immunol. 2011;107:529 –537. The results of the trials for sebetralstat and Firazyr may not be directly comparable, as they are not from a single head-to-head clinical trial

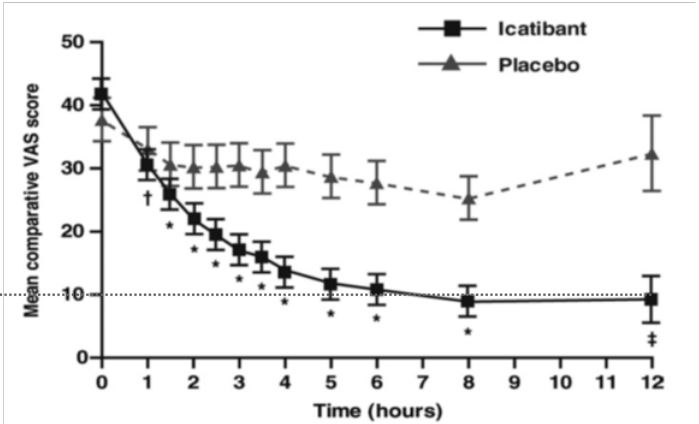


Figure 3. Mean composite VAS-3 score for the first 12 hours after treatment (*nonlaryngeal ITT population*). *$P \leq .001$; †$P = .003$; ‡$P = .041$, vs placebo. Sixteen subjects (icatibant $n = 5$; placebo $n = 11$) who had not achieved relief by hour 8 had nonmissing data for hour 12.

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Sebetralstat Phase 3 Trial Design

KONFIDENT™
SEBETRALSTAT CLINICAL TRIAL

- Double-blind, crossover trial assessing 300 mg and 600 mg sebetralstat versus placebo
- Each patient treats 3 attacks at home
  - One with each treatment in a randomized, blinded sequence
  - Patients can re-dose if symptoms warrant, no statistical impact on primary or secondary endpoints

Primary endpoint:
- Time to beginning of symptom relief (PGI-C)

Key secondary endpoints:
- Time to improvement (PGI-S)
- Time to resolution (PGI-S)

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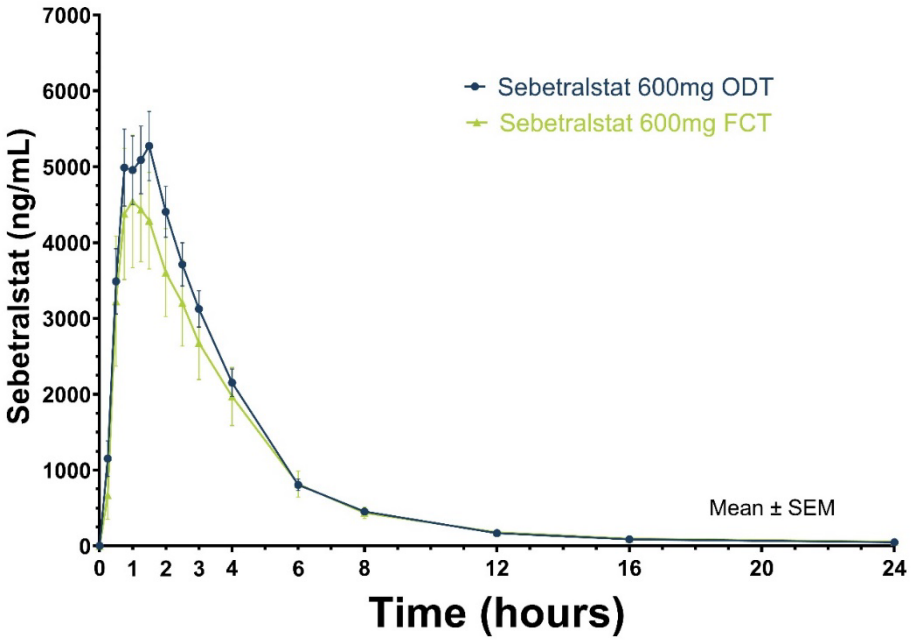
Sebetralstat Phase 3 Trial Design

- The KONFIDENT trial will complete at least 84 patients
  - HAE type 1 and 2 including adults, adolescents and patients with ongoing prophylaxis
  - All attack locations eligible including laryngeal attacks
- FDA agreed primary endpoint: time to beginning of symptom relief using PGI-C
  - *A priori* secondary endpoint in phase 2 trial
  - Expected to be sufficient to file NDA
  - FDA does not recommend the use of VAS to support the primary endpoint
- At least 90% power to detect the phase 2 treatment effect
- First patient recruited March 2022; Data anticipated H2 2023, NDA filing H1 2024

Orally Disintegrating Tablet Further Enhances Options for Patients

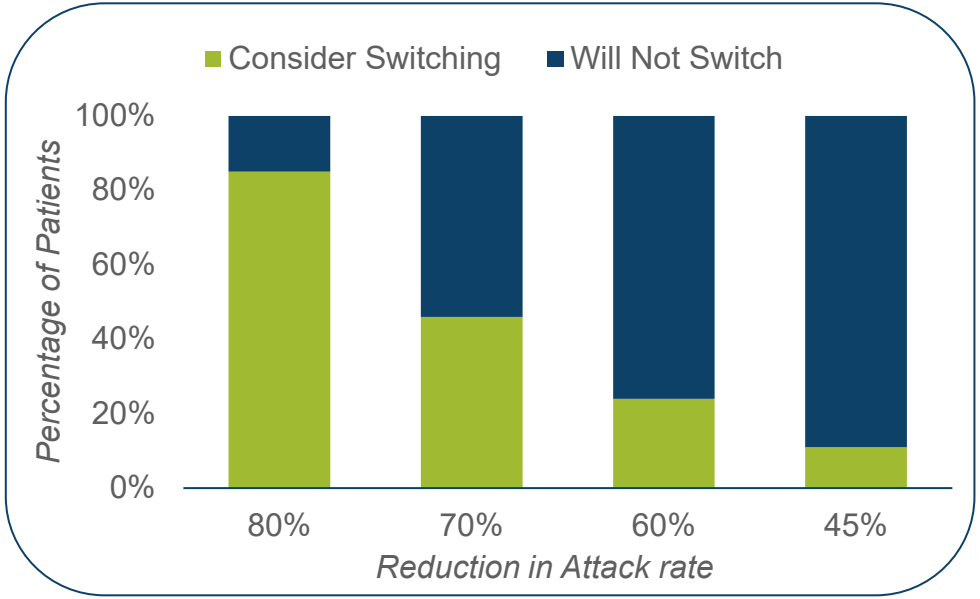
- ODT increases ease of dosing for younger patients or those with difficulty swallowing
- Phase 1 data shows similar pharmacokinetics to current film-coated tablets (FCT)
- Regulatory interactions initiated to determine approval pathway & timing
- Expected to be lifecycle extension in US & EU; potentially launch formulation in other geographies



Factor XIIa

Oral Factor XIIa Designed to Meet Unmet Need in HAE Prophylaxis

Patients will not trade lower efficacy for oral dosing



Our goal is to achieve an oral treatment with an efficacy profile similar to injectable treatments

Source: Company research and analysis

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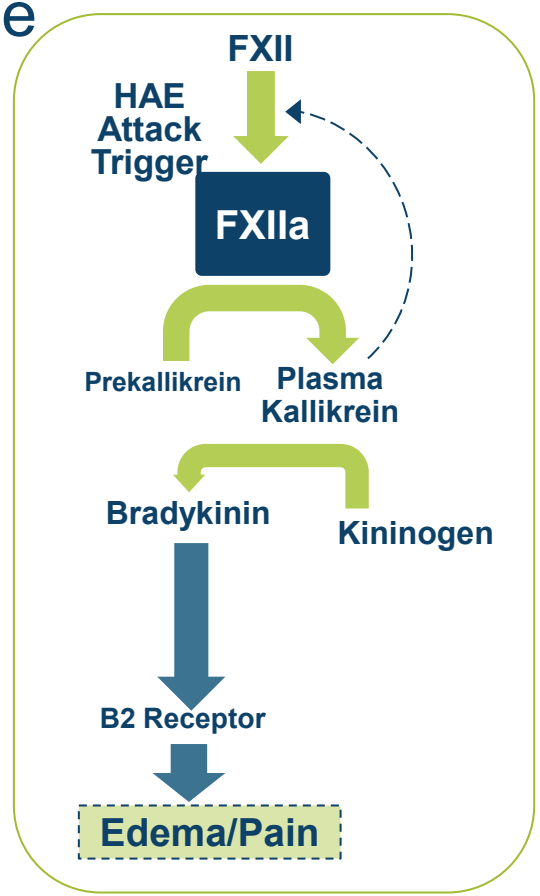
Factor XIIa Sits at Top of HAE Attack Cascade

- Factor XIIa (FXIIa) activates the kallikrein kinin system
  - Generates plasma kallikrein leading to uncontrolled bradykinin release in HAE
- Bradykinin generated by the plasma kallikrein kinin system causes edema and pain in HAE attacks
  - FXIIa and plasma kallikrein inhibitors selectively block bradykinin generated by the plasma kallikrein kinin system, unlike bradykinin receptor antagonists
- FXIIa inhibitory antibody has been shown clinically to reduce HAE attack frequency
  - At least as efficacious as approved therapies against other targets
  - No known chronic safety implications
- Factor XIIa likely plays a role in other diseases



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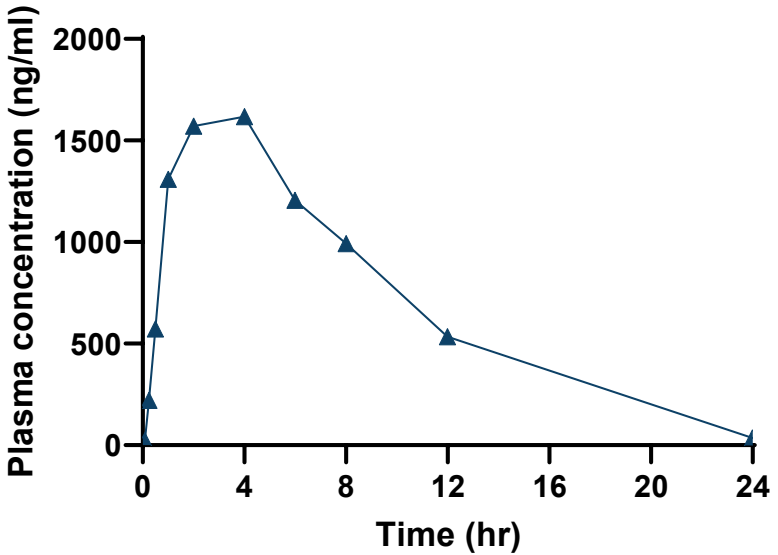
KalVista is Building a Portfolio of Potent, Oral FXIIa Inhibitors

High potency for FXIIa in multiple series

Compound	FXIIa IC_{50} (nM)	Series
1	10	A
2	9.7	A
3	12	B
4	1.9	B
5	7.8	C
6	7.5	C
7	3.5	C
8	2.7	C

Plasma exposure following oral dosing in rats



- High potency and >1000-fold selectivity against other proteases
- Oral profiles consistent with once daily dosing in human
- Multiple distinct series reduce risk, yield broader IP and support development for multiple indications

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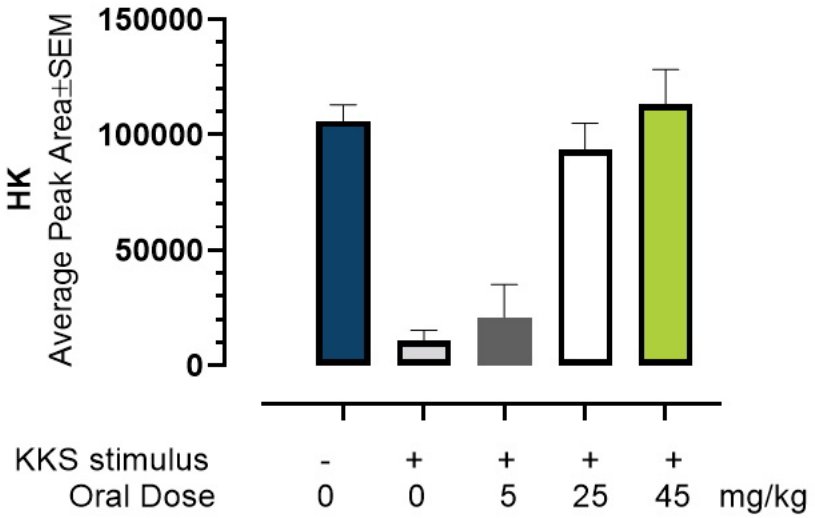
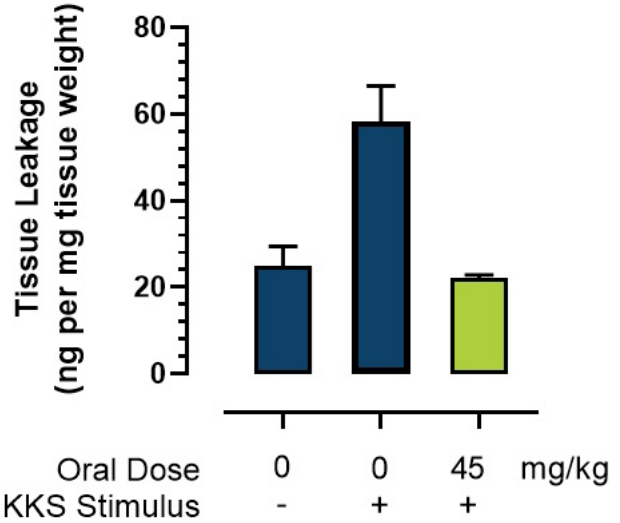
Orally delivered Factor XIIa Inhibitor blocks Kallikrein-Kinin System effects in mouse models of angioedema

Blocks cleavage of kininogen and release of bradykinin



Carrageenan-stimulated paw edema model

Prevents angioedema in HAE-related tissues



Angiotensin converting enzyme inhibitor angioedema model

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Factor XIIa Inhibitor Program is Advancing Towards IND

- Strong scientific rationale and positive clinical evidence for FXIIa inhibition in HAE prophylaxis
  - Factor XIIa is at the top of the kallikrein-kinin system
  - Inhibitors block the activation of plasma kallikrein and thereby the generation of bradykinin
- KalVista is advancing the first oral FXIIa inhibitors towards the clinic – no known competitors in oral therapy
- Factor XIIa implicated in other indications that may represent large future opportunities, including thrombosis and inflammation
- IND targeted for 2023

KalVista Value Proposition

- The only company developing distinct oral treatments for the full spectrum of HAE disease management
- Sebetralstat: on-demand Phase 3 KONFIDENT clinical trial enrolling
  - Data expected H2 2023, NDA H1 2024
- Oral Factor XIIa inhibitor program the next substantial growth opportunity
  - Initial development in HAE prophylaxis, based on clinical validation of target and high unmet need
  - Factor XIIa also has potential in large market opportunities in inflammation and thrombosis
- Funded to 2025

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NASDAQ: KALV