KalVista Pharmaceuticals

Corporate Overview

March 2022

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.

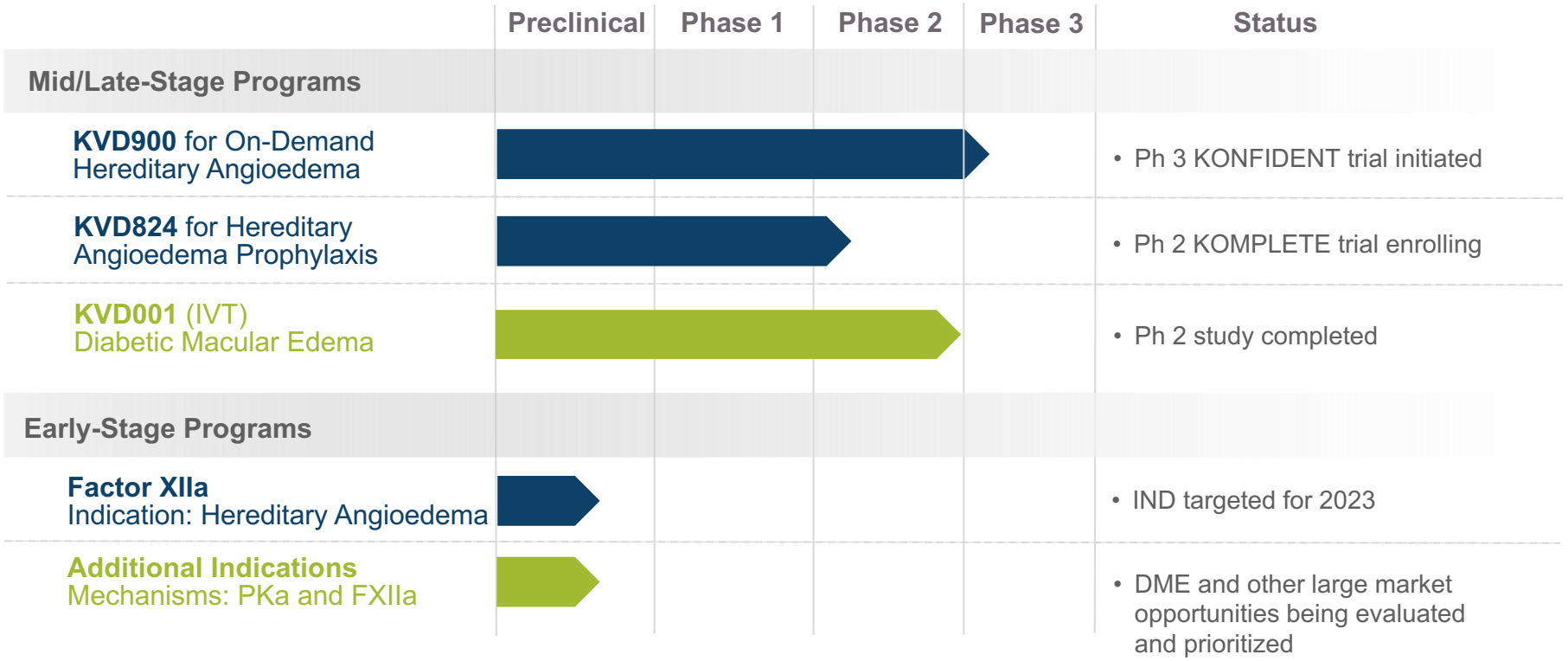
Any forward-looking statement made by us in this presentation and the accompanying oral presentation is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written 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) and large market opportunity diabetic macular edema (DME)
- Only Company developing a franchise of distinct oral treatments for HAE
  - KVD900 as on-demand therapy, Phase 3 KONFIDENT trial initiated
  - KVD824 for prophylaxis, Phase 2 KOMPLETE trial enrolling
  - Factor XIIa program as next generation of oral therapy, IND targeted for 2023
- All programs internally developed, with full rights and IP protection to at least late-2030s
- $195 million cash as of January 31, 2022; funded to at least early 2024

Product 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
- All but one approved therapies are 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 scrips remain steady

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

KalVista Oral Candidates Treat the Full Spectrum of HAE

KVD900: On-demand/ Breakthrough Treatment

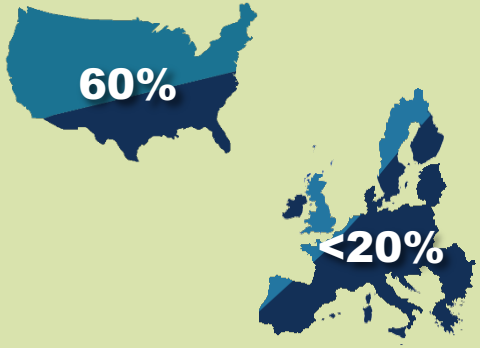
~40% of US market;
~90% in EU

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

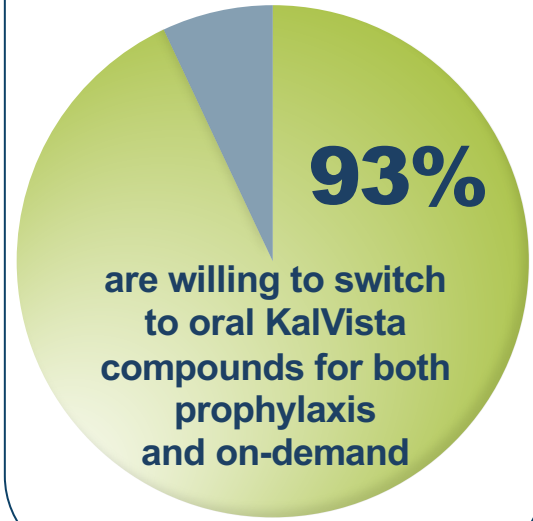
Approximately 100,000 treatable annual attacks in US; 150,000 in Europe

KVD824: Prophylaxis

~60% in US
~10% in EU



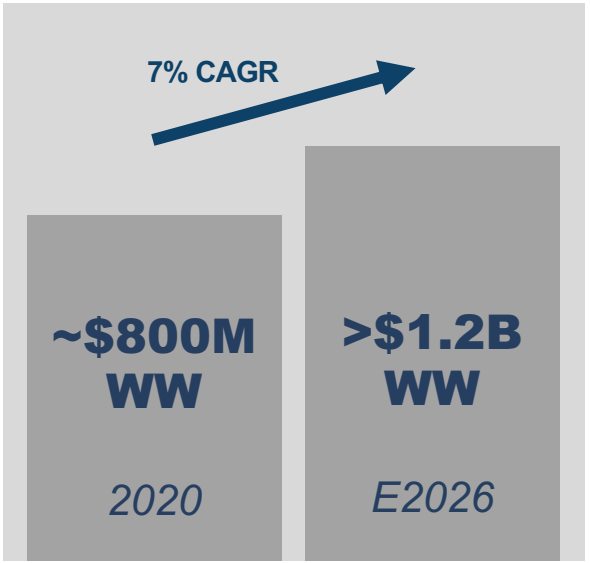
PATIENTS



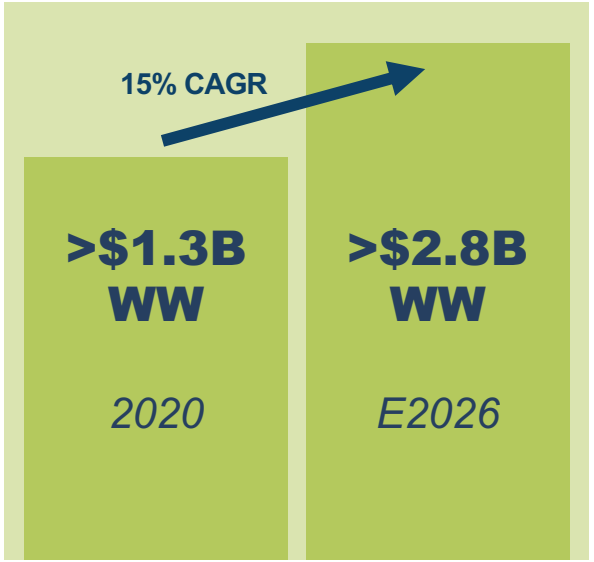
Source: Company research and analysis

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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KVD900: HAE On-Demand Therapy

KVD900: Changing the Paradigm for On-Demand Treatment

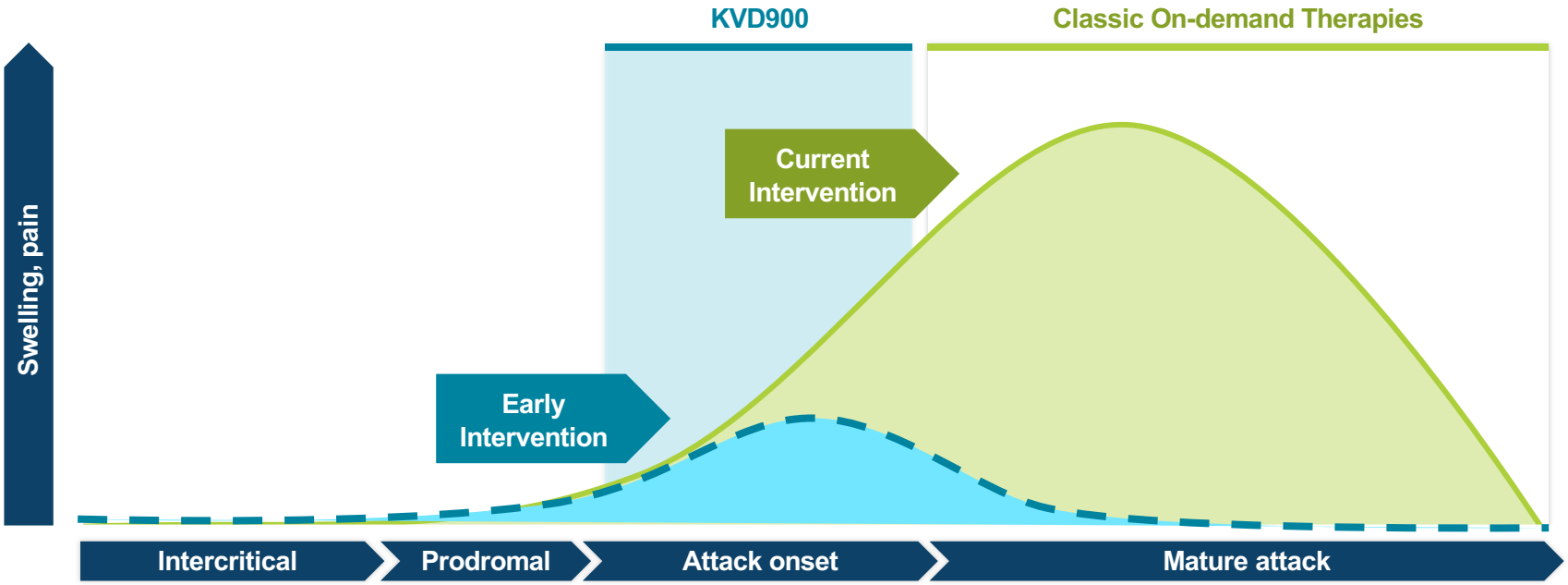
- All approved on-demand options have significant shortcomings
  - Firazyr (branded and generic) is overwhelming market leader, but SC delivery is painful
  - Other major therapies are IV delivery, which is even more inconvenient
- Early treatment improves outcomes but undertreatment and late treatment are common
  - In real world study of Firazyr, treatment administration within one hour of attack onset significantly reduced attack duration[1]
  - But less than 40% of treated attacks dosed within one hour; 30% weren't treated until >5 hours
  - Patient histories showed that 45% of attacks weren't treated at all
- KVD900 is intended to reduce the barriers to treatment
  - Enable earliest intervention to improve treatment outcomes for patients

1. Maurer M, et al. Hereditary Angioedema Attacks Resolve Faster and Are Shorter after Early Icatibant Treatment. PLoS ONE. 2013;8(2):e53773.

The KVD900 Treatment Vision

- Enable patients to treat all attacks according to current treatment guidelines
- Patients take KVD900 at first signs of an attack
  - Patients recognize oncoming attacks while symptoms are mild
- KVD900 dosing is straightforward and simple
  - Expected to be 1 or 2, 300 mg tablets, contained in an easy-to-access, individual foil 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
- Attack development is halted in its earliest stages

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



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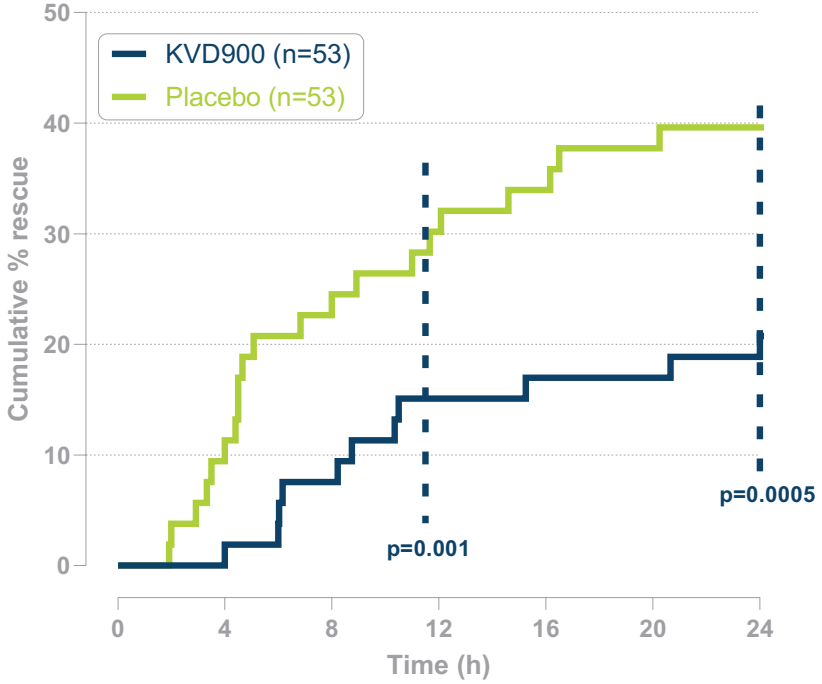
Positive KVD900 Phase 2 Clinical Trial Results

- Primary endpoint statistically significant p=0.001
  - Reduced rescue use over 12 and 24 hours
- KVD900 enables early intervention and maximises treatment success
  - Mean 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
- KVD900 was generally safe and well tolerated
  - No serious adverse events reported and no patients withdrew due to adverse events

KVD900 Met Primary Endpoint



- KVD900 significantly reduced use of rescue within 12 hours: p=0.001*
  - Placebo 30.2%
  - KVD900 15.1%
- Efficacy maintained at 24 hours
  - p=0.0005*

*Gehan's Generalized Wilcoxon Test

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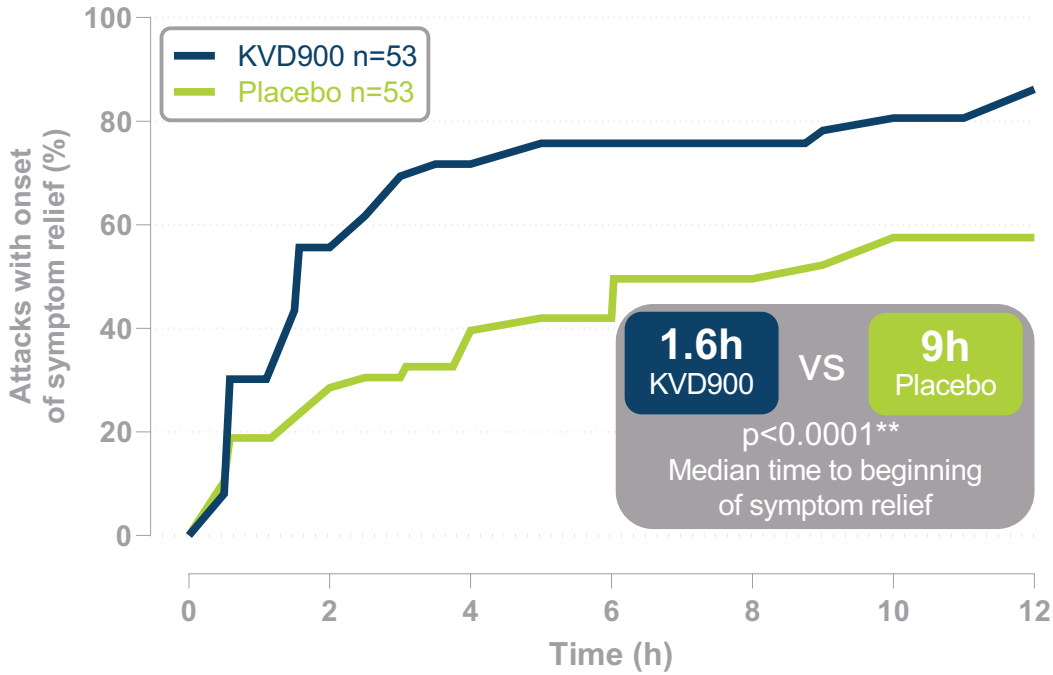
KVD900 Reduced Time to Beginning of Symptom Relief

- 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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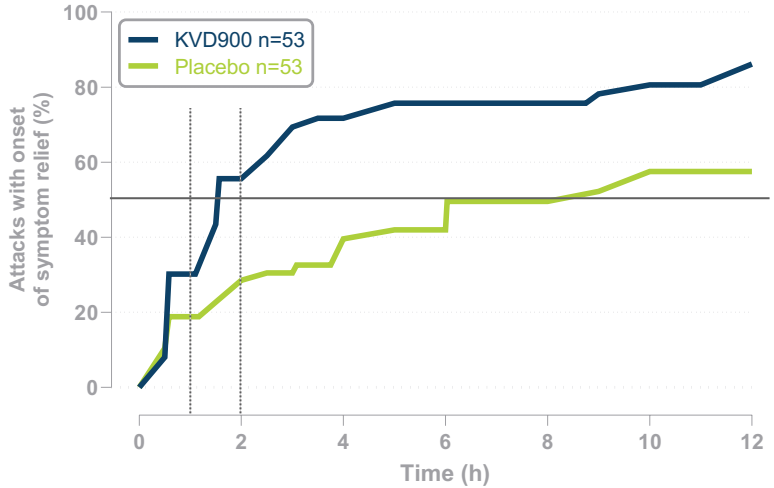
KVD900 Symptom Relief Time Similar to IV Injected Ruconest (rC1-INH)

KVD900 1.6 hours; Placebo 9 hours
p<0.0001*

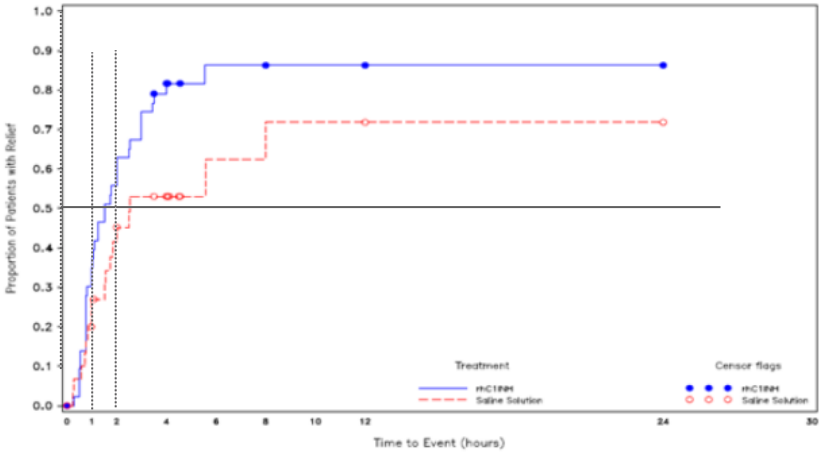
Patient Global Impression of Change (PGI-C)



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 KVD900 and Ruconest may not be directly comparable, as they are not from a single head-to-head clinical trial

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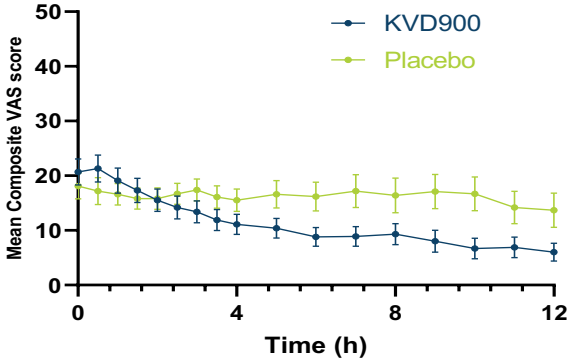
KVD900 VAS Reduction and Firazyr (icatibant)

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

- Early treatment with KVD900
  - Key benefit of oral therapy
  - Consistent with HAE treatment recommendations
  - Minimises overall symptoms experienced
- Delayed treatment with icatibant
  - In a real-world setting injections are often delayed
  - Baseline severity not reflective of current recommendations
  - Increases overall attack symptoms



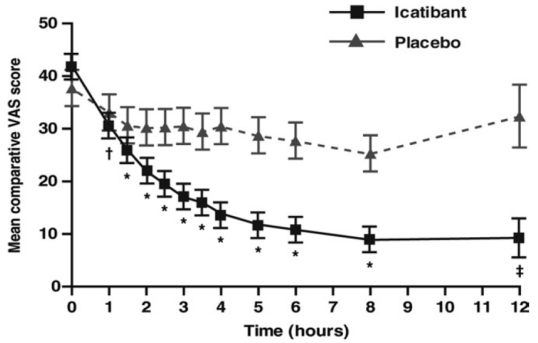


Figure 3. Mean composite VAS-3 score for the first 12 hours after treatment (*nonlaryngeal ITT population*). *$P \leq .001$; †$P = .003$; ‡$P = .041$, vs placebo. Sixteen subjects (icatibant $n = 5$; placebo $n = 11$) who had not achieved relief by hour 8 had nonmissing data for hour 12.

Firazyr data from Lumry et al., Ann Allergy Asthma Immunol. 2011;107:529 –537. The results of the trials for KVD900 and Firazyr may not be directly comparable, as they are not from a single head-to-head clinical trial

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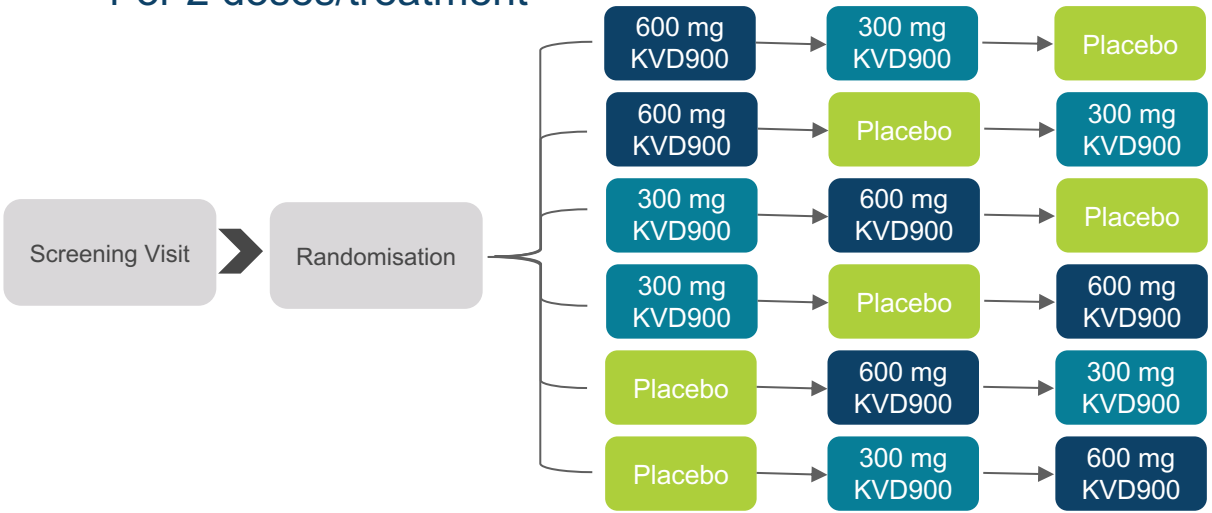
KVD900 Phase 3 KONFIDENT Trial Underway

- Complete at least 84 patients
  - Double-blind, 3-way crossover trial assessing 300 mg, 600 mg and placebo
  - Supporting broad label including adolescents, prophylaxis patients and laryngeal attacks
- Worldwide recruitment in approximately 60 sites in 20 countries
- FDA agreed primary endpoint: time to beginning of symptom relief using PGI-C
  - FDA does not recommend use of VAS as primary endpoint
  - Patients allowed to re-dose if symptoms warrant, with no statistical impact
  - Expected to be sufficient to file NDA
- At least 90% powered to detect the phase 2 treatment effect
- Anticipating data H2 2023, NDA H1 2024

KVD900 Phase 3 Trial Design

KONFIDENT
KVD-900 CLINICAL TRIAL

- N = 84
- Six sequences
- 1 or 2 doses/treatment



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

Secondary endpoints:
- Time to improvement (PGI-S)
- Time to resolution (PGI-S)

KONFIDENT will be conducted at approximately 60 sites in 20 countries

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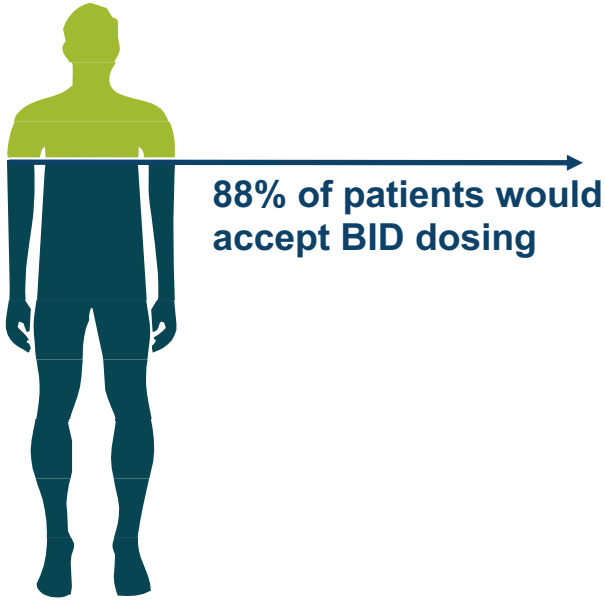
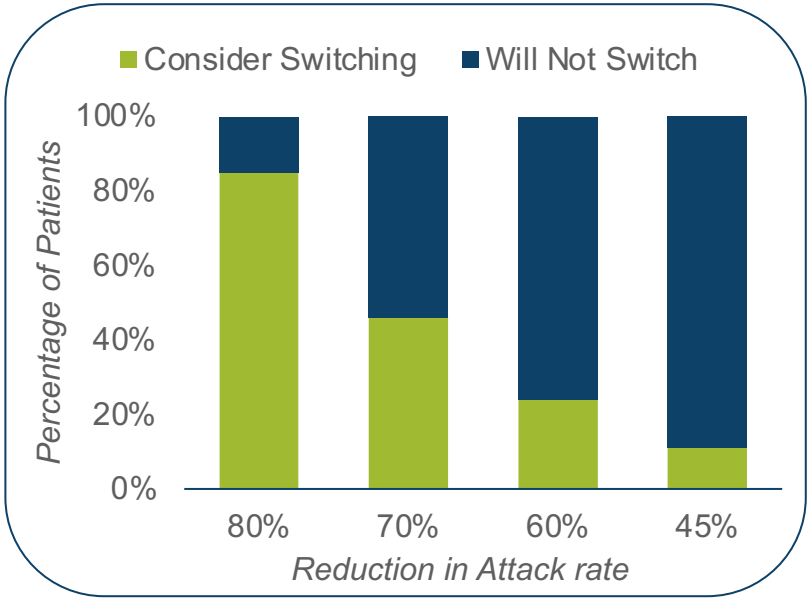
KVD824: HAE Prophylactic Therapy

KVD824 Designed to Meet Unmet Need in Oral Prophylaxis

Dosing regimen is secondary to efficacy in importance



Patients will not trade lower efficacy for oral dosing

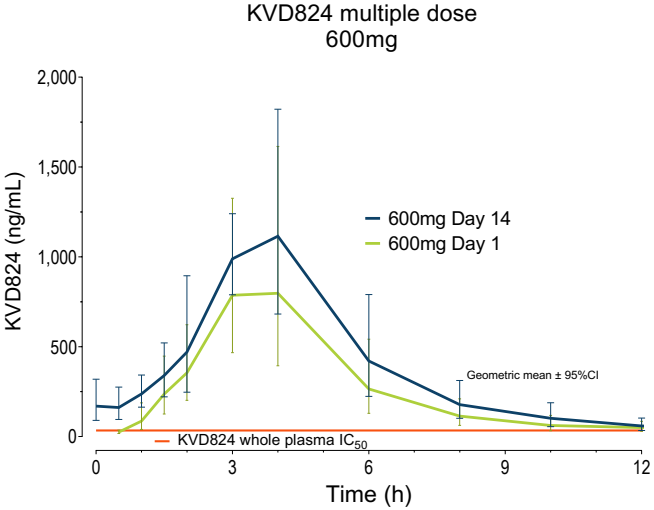


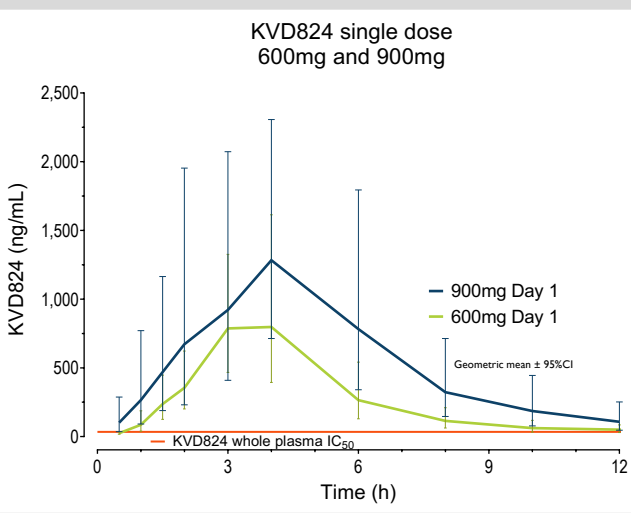
Our goal is to achieve an oral treatment with an efficacy profile similar to injectable treatments

Source: Company research and analysis

KVD824: Phase 1 PK

- Consistent pharmacokinetic profile over repeat dosing
- No impact of multiple doses on rates of absorption or elimination
- Reduces potential for drug-drug interactions





- Dose of 900mg increases exposure without affecting profile of exposure
- Safety and tolerability profile to date excellent at all doses up to 14 days 2x daily

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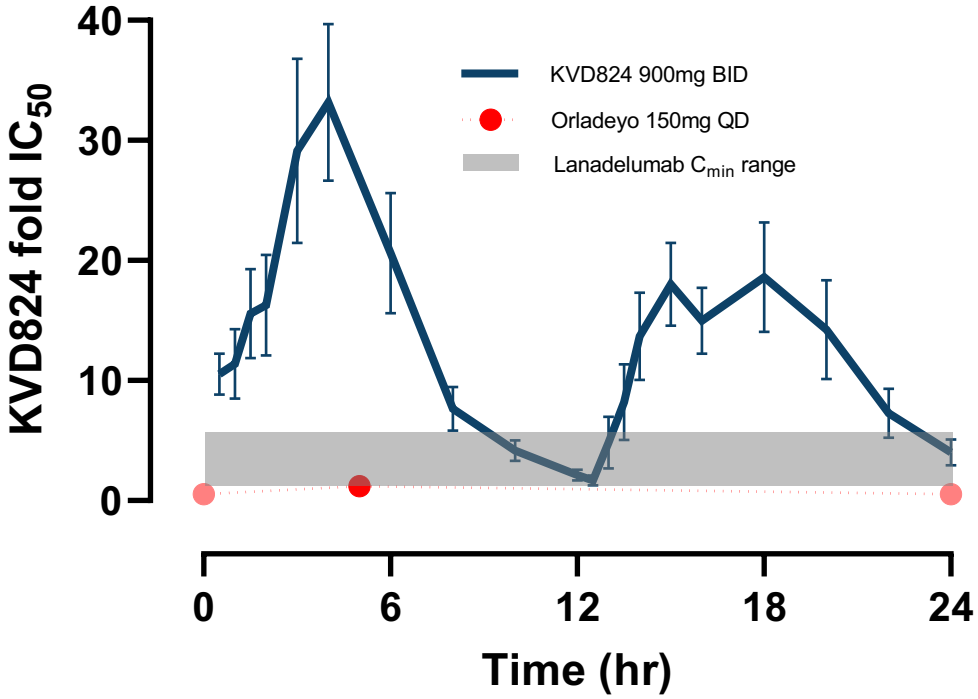
KVD824 Plasma Exposure Compared to Other Prophylaxis

- KVD824 delivers effective plasma concentrations well above Orladeyo
- Minimum concentrations within range of lanadelumab C_{min}



IC_{50} values determined using 10µg/ml DXS stimulation

Orladeyo C_{max} / T_{max} (US Prescribing Information, 2020)
C_{tau} estimated using data presented at AAAAI 2016
Dotted line for visualization only
Lanadelumab Cmin range 300mg/2 weeks (Wang et al 2020)

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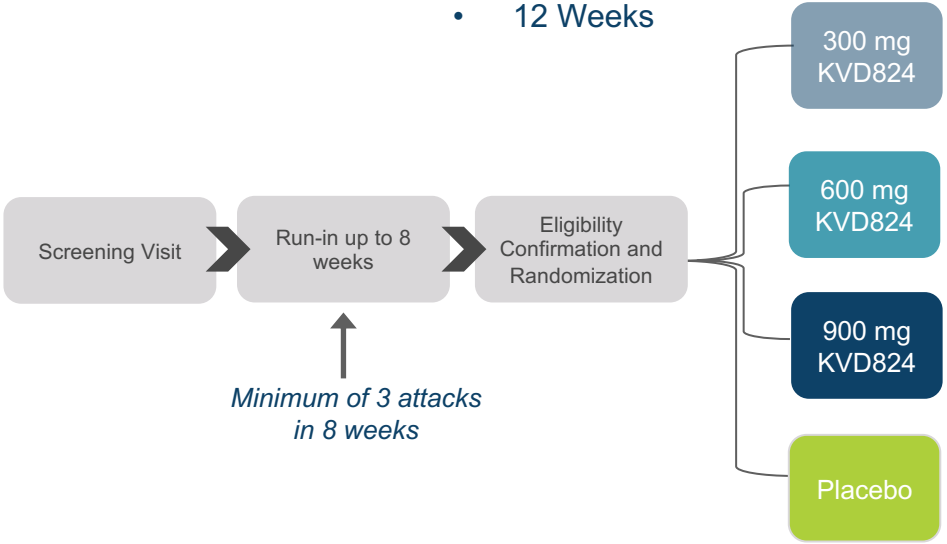
KVD824 Phase 2 KOMPLETE Trial Enrolling

- Enrolling 48 patients
  - Double-blind, parallel group trial assessing twice-daily 300 mg, 600 mg, 900mg and placebo
  - 8-week run-in period to establish baseline attack frequency followed by 12-week treatment period
- Worldwide recruitment in approximately 30 sites in 13 countries
- Primary endpoint: investigator confirmed HAE attack rate
  - Pivotal endpoint for recent approvals
- 90% powered to detect a 70% reduction in attack frequency
- Data anticipated mid-2023

KVD824 Phase 2 Trial Design

KOMPLETE™
KVD-824 CLINICAL TRIAL

- N = 48
- Four equal arms
- Twice daily dosing
- 12 Weeks



Primary endpoint:

- Rate of investigator confirmed HAE attacks

Secondary endpoints:

- Proportion of subjects without investigator confirmed HAE attack
- Rate of investigator confirmed HAE attacks that require conventional treatment
- Angioedema quality-of-life and angioedema control test (AECT) scores
- Proportion of participants with an AECT score greater than or equal to 12

KOMPLETE is being conducted at more than 30 sites in 13 countries

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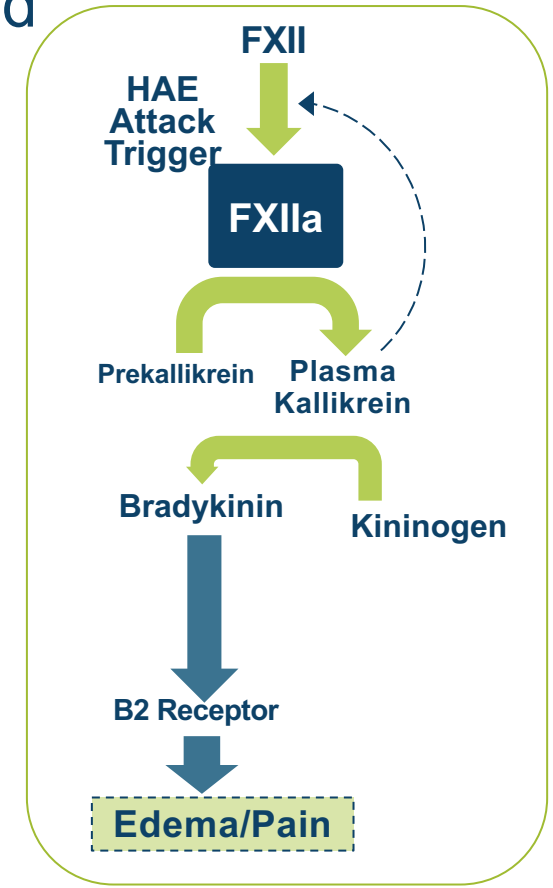
Factor XIIa

Future of the Oral HAE Franchise and Beyond

- Factor XIIa (FXIIa) sits at the top of the contact system
  - Activates plasma kallikrein leading to uncontrolled bradykinin release in HAE
- Bradykinin generated by the contact system causes edema and pain in HAE attacks
  - FXIIa and plasma kallikrein inhibitors are selective for contact system bradykinin
- Clinical studies of Factor XIIa antibodies reduce HAE attack frequency
  - At least as efficacious as approved therapies
  - No known chronic safety implications
- Factor XIIa likely plays a role in other disease states

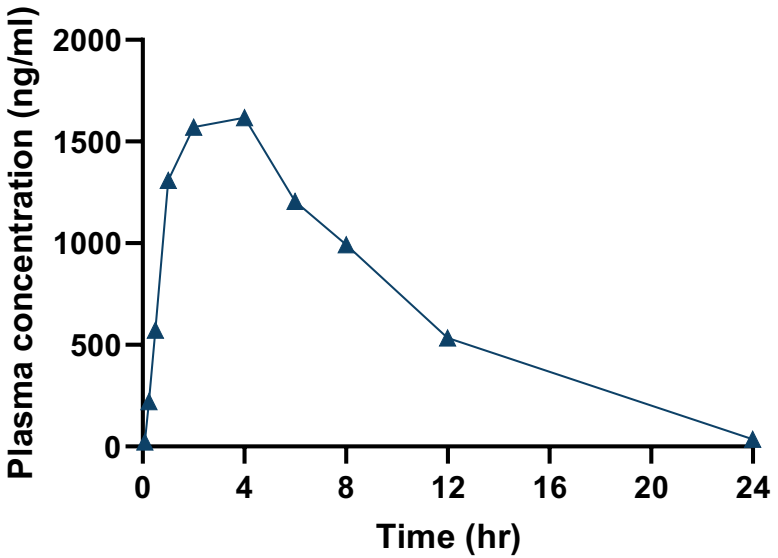


KalVista is Building a Portfolio of Potent, Oral FXIIa Inhibitors

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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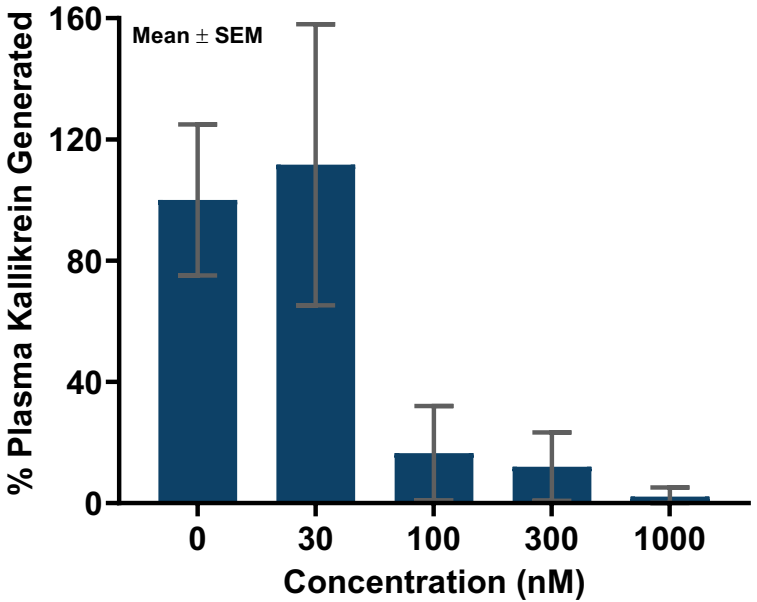
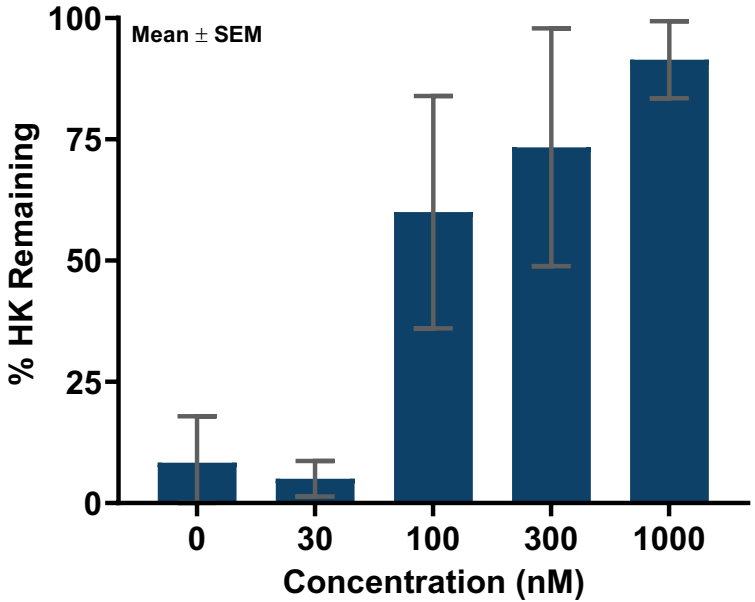
Factor XIIa Inhibitor Blocks Kallikrein-Kinin System Activation

Blocks generation of plasma kallikrein



Blocks cleavage of kininogen and release of bradykinin



Dextran sulfate-stimulated whole human plasma

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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 cascade
  - Inhibitors block the activation of plasma kallikrein and thereby the generation of bradykinin
- KalVista is advancing the first oral FXIIa inhibitors for HAE – no other known competitors in oral therapy
- Oral Factor XIIa inhibitors have additional potential commercial opportunities
- IND targeted for 2023

KalVista Value Proposition

- The only company developing distinct oral treatments for the full spectrum of HAE disease management
  - KVD900: on-demand Phase 3 KONFIDENT clinical trial initiated
  - KVD824: prophylaxis Phase 2 KOMPLETE clinical trial enrolling
- Factor XIIa program is the next generation of oral HAE therapy
  - Offers potential for even higher efficacy and better dosing regimens
  - Targeting first clinical studies in 2023
- Factor XIIa also has potential in large market opportunities
- Funded to at least early 2024

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