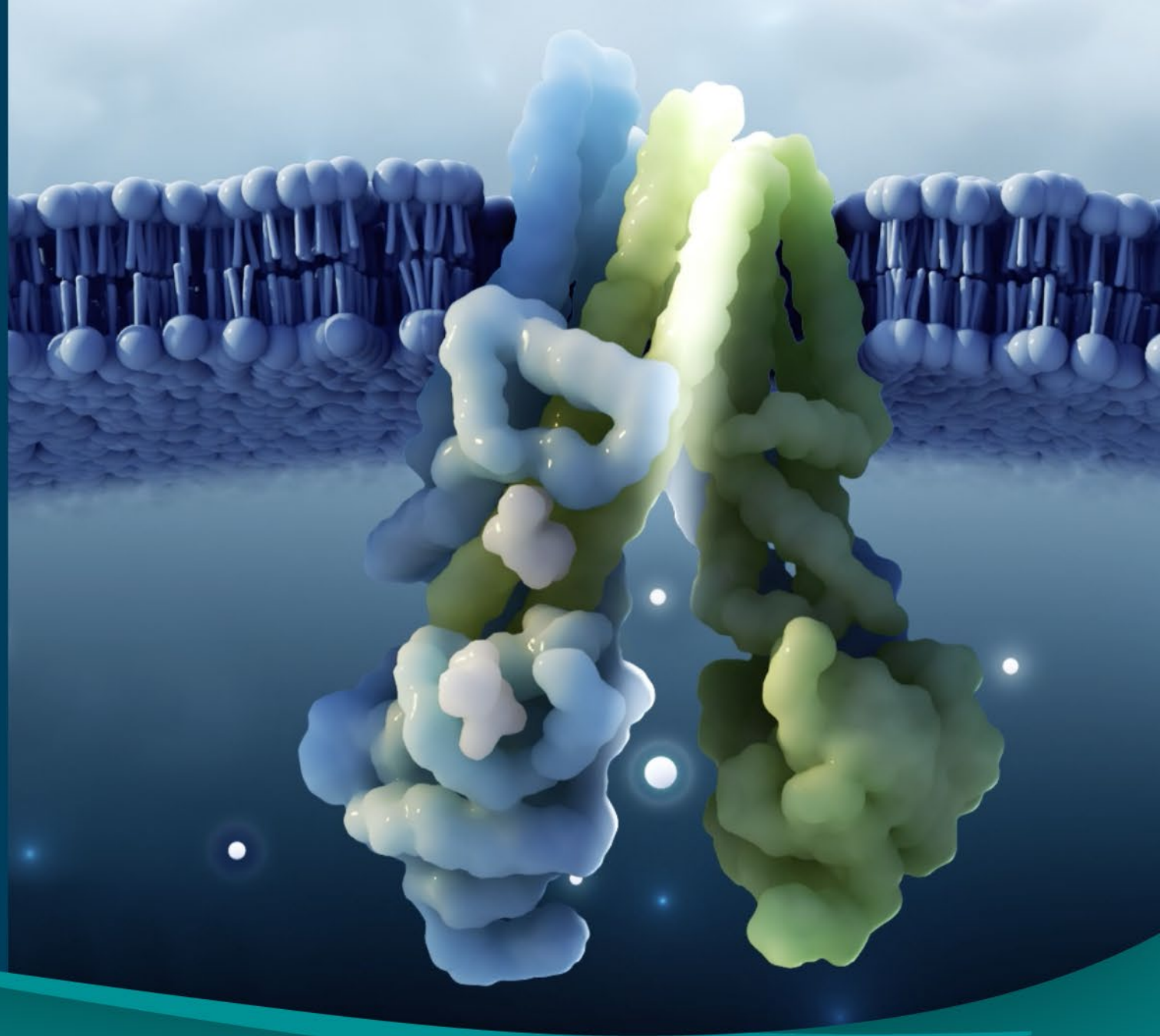


Sionna Therapeutics

*On a Mission to
Revolutionize the
Cystic Fibrosis
Treatment Paradigm*

October 21st, 2025

sionna[™]



Disclaimers and forward-looking statements

This presentation contains forward-looking statements of Sionna Therapeutics, Inc. (“Sionna”, “the Company”, “we”, “us”, or “our”) that involve substantial risks and uncertainties. All statements other than historical factual information are forward-looking statements, including without limitation statements regarding our goal of transforming the treatment paradigm for CF and providing clinically meaningful benefit to patients, including the potential for wild-type CFTR function; the initiation, timing, progress and results of our research and development programs, preclinical studies, and clinical trials and studies, including the expected timing of topline data from our Phase 1 healthy volunteer combination trial and the Phase 2a proof-of-concept trial; our ability to replicate positive results from earlier preclinical studies or clinical trials conducted by us or third parties in current or future clinical trials; our ability to develop and advance our current and future product candidates and programs; our ability to demonstrate that our product candidates are safe and effective for their proposed indication and our expectations around their beneficial characteristics and therapeutic effects; our ability to advance our current and future product candidates through applicable regulatory approval processes, including the timing of investigational new drug application submissions; the implementation of our business model and strategic plans; our estimates regarding the market opportunity of our product candidates; our ability to rely on third-party manufacturers and successfully manufacture our product candidates for preclinical use, for clinical trials and on a larger scale for commercial use, if approved; our ability to maintain, expand and protect our intellectual property; our ability to enter into future license agreements and collaborations; general economic, industry, and market conditions, including rising interest rates and inflation; our ability to attract and retain key scientific and management personnel; our ability to compete effectively with existing competitors and new market entrants; and our expectations regarding our pipeline, operating plan, use of capital and capital requirements, expenses and other financial results, including our cash runway projection. In some cases, you can identify forward-looking statements because they contain words such as “may,” “will,” “shall,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential,” or “continue” or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans or intentions, although not all forward-looking statements are accompanied by such words. Forward-looking statements are based on assumptions and assessments made by our management in light of their experience and perceptions of historical trends, current conditions, expected future developments and other factors they believe to be appropriate, and speak only as of the date of this presentation.

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Market data and industry information used throughout this presentation are based on management’s knowledge of the industry and the good faith estimates of management. We also relied, to the extent available, upon management’s review of independent industry surveys and publications and other publicly available information prepared by a number of third-party sources. All of the market data and industry information used in this presentation involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Although we believe that these sources are reliable as of their respective dates, we cannot guarantee the accuracy or completeness of this information, and we have not independently verified this information. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors. These and other factors could cause results to differ materially from those expressed in our estimates and beliefs and in the estimates prepared by independent parties. The trademarks included herein are the property of the owners thereof and are used for reference purposes only. Such use should not be construed as an endorsement of such products. This presentation discusses product candidates that are investigational only and have not yet been approved for marketing by the U.S. Food and Drug Administration. No representation is made as to the safety or effectiveness of these product candidates for the use for which such product candidates are being studied.

Sionna Overview

Leadership with track record capable of disrupting the CF market

Leadership

Mike Cloonan

Chief Executive Officer



Charlotte McKee, M.D.

Chief Medical Officer



Elena Ridloff, C.F.A.

Chief Financial Officer



Caroline Stark Beer, MBA

Chief Business Officer



Jen Fitzpatrick

Chief Legal Officer



Vanya Sagar

Chief People Officer



Greg Hurlbut, Ph.D.

Co-Founder & SVP Discovery Research



Mark Munson, Ph.D.

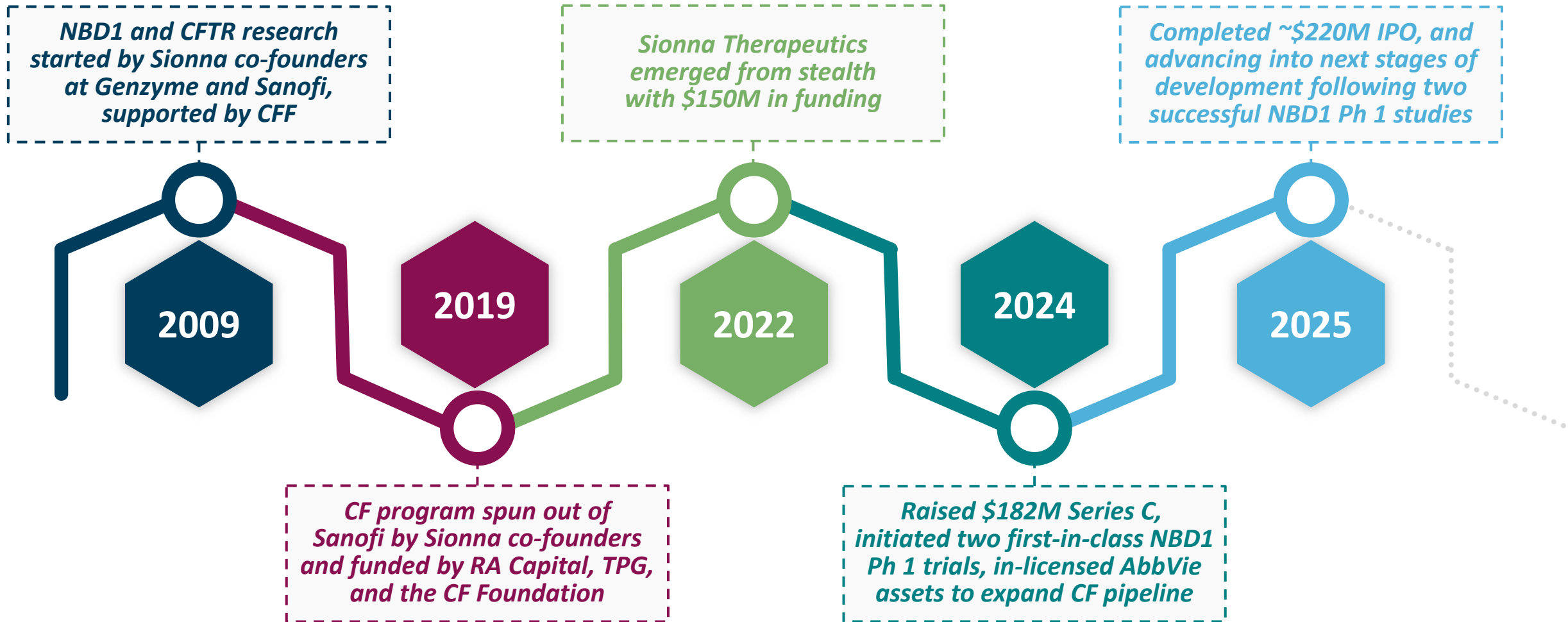
Co-Founder & SVP Medicinal Chemistry



Board of Directors

Paul Clancy Board Chair Prior CFO Alexion, Biogen	Bruce Booth, D. Phil. Director Partner, Atlas Venture	Mike Cloonan Director CEO, Sionna	Edd Flemming, M.D. Director EVP, Enavate Sciences	Lucian Iancovici, M.D. Director Partner, TPG Growth	Josh Resnick, M.D. Director Managing Director, RA Capital	Laurie Stelzer Director Prior CFO Kailera, Mirati, Arena	Marcie Ruddy, M.D. Director CMO, Tectonic Therapeutic	Peter Thompson, M.D. Director Partner, Orbimed	Jo Viney, Ph.D. Director CEO, Seismic Therapeutic
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Sionna leverages over 15 years of pioneering CFTR research and development to advance next-generation of CF therapies



Sionna's novel approach focused on stabilizing NBD1 has the potential to revolutionize the current CF treatment paradigm

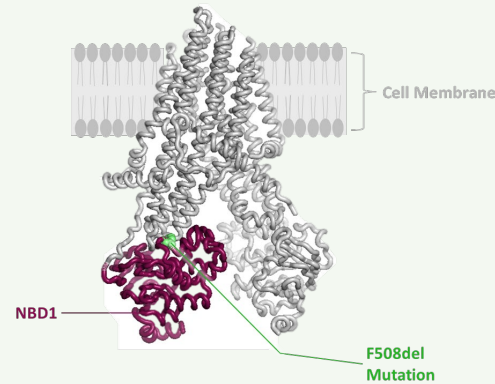
HIGH UNMET NEED IN LARGE MARKET



Despite current treatments, >2/3rd of patients do not have normal CFTR function

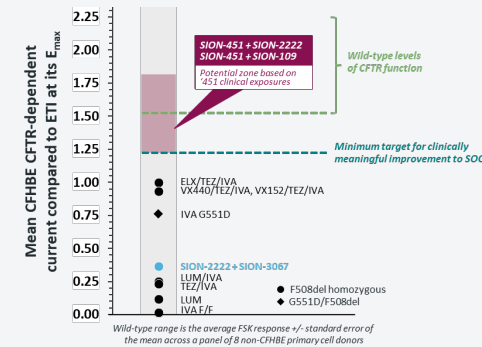
Today's market is >\$11B¹, expected to be \$15B by 2029²

NBD1, A CRITICAL CF TARGET



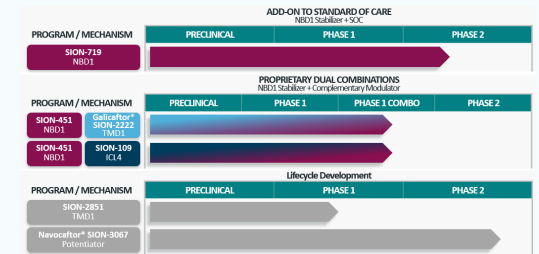
We believe NBD1 has the potential to deliver full CFTR function, and none of the approved CFTR modulators directly stabilize NBD1

PREDICTIVE ASSAY / BIOMARKERS*



Industry standard CFHBE assay and sweat chloride biomarker have been highly predictive of clinical outcomes for approved CFTR modulators

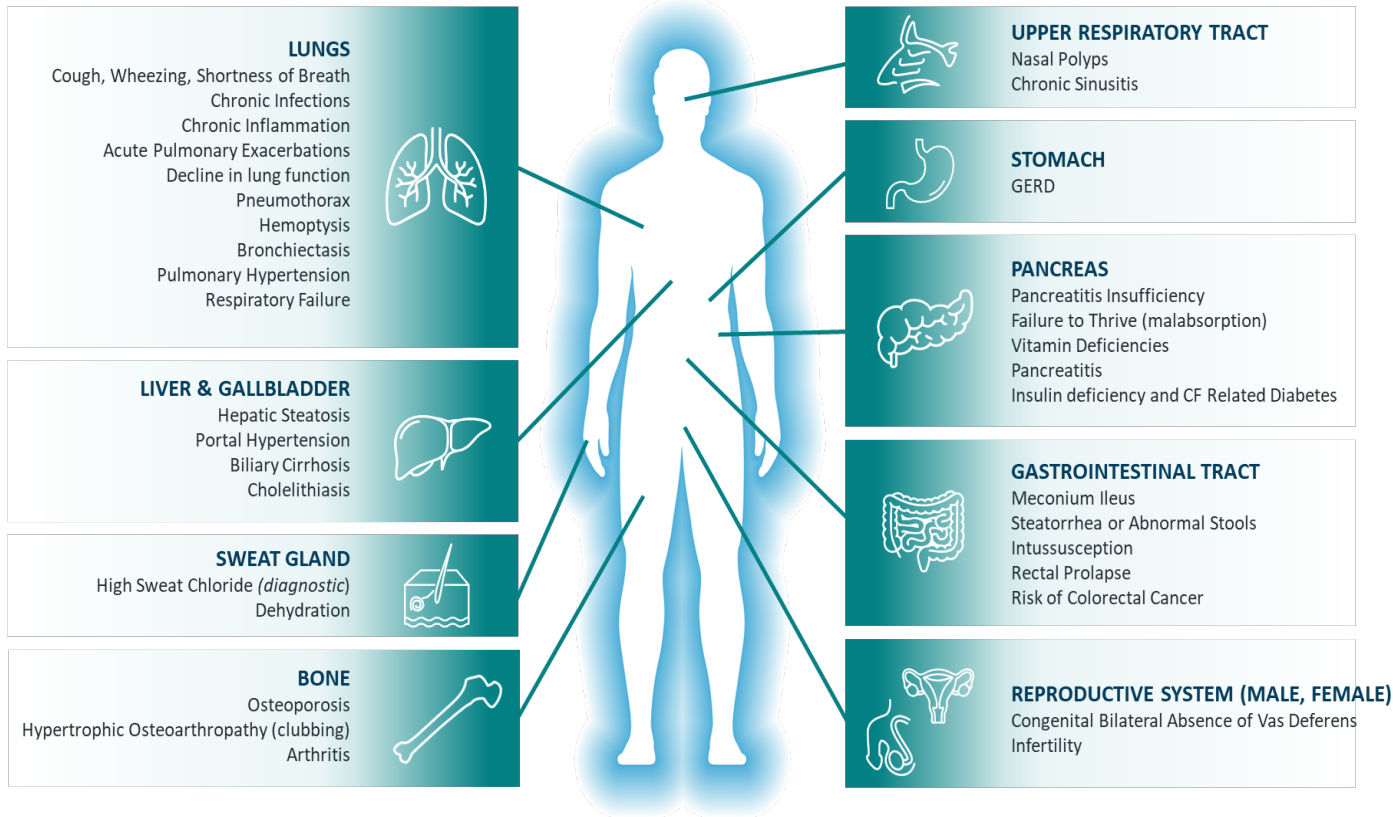
FRANCHISE DRIVES STRATEGIC OPTIONALITY



Robust clinical stage pipeline of NBD1 stabilizers and complementary modulators provides multiple potential paths to transform the standard of care for CF patients

CF is an established rare, progressive and life-threatening genetic disease that can cause debilitating multi-system complications

Manifestations of Cystic Fibrosis



~106K patients with CF across 94 countries¹

~90% of people with CF carry the **F508del mutation**², which is Sionna's target population

Predicted median survival is 61 years for a patient born in the U.S. between 2019 and 2023³

>2/3rd of patients on Trikafta[®] do not have normal CFTR function, as measured by sweat chloride^{4,5}

We believe stabilizing NBD1 is central to unlocking meaningful improvements in clinical outcomes for CF patients

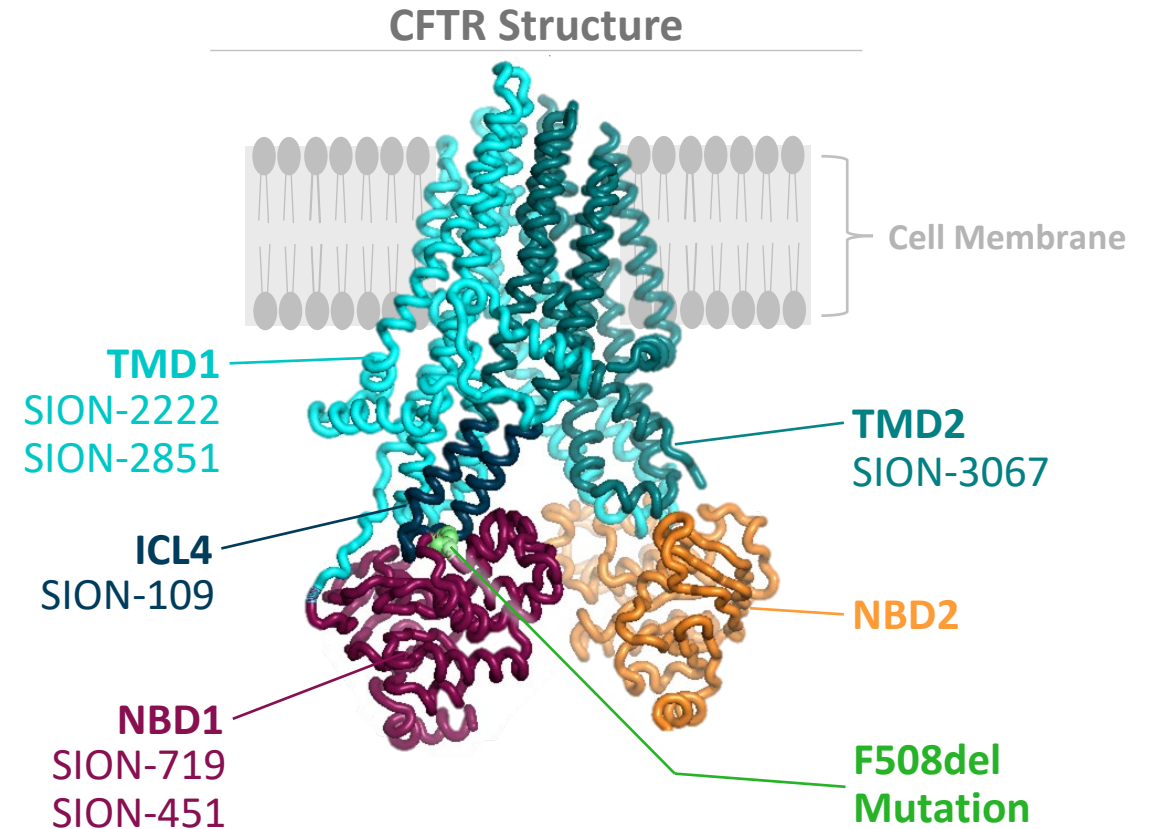
The Importance of NBD1

~90% of people with CF have a F508del mutation; **F508del resides within the NBD1 domain of CFTR**

F508del severely destabilizes CFTR, preventing its normal folding, trafficking, and function

None of the approved CFTR modulators directly stabilize NBD1

We believe stabilizing NBD1 is the key to normalizing CFTR function



Sionna has a robust and differentiated pipeline, with several near-term clinical milestones

ADD-ON TO STANDARD OF CARE NBD1 Stabilizer + SOC

PROGRAM / MECHANISM

PRECLINICAL

PHASE 1

PHASE 2

UPCOMING MILESTONES

SION-719
NBD1

Complete Ph 2a POC, TLD
mid-26

PROPRIETARY DUAL COMBINATIONS NBD1 Stabilizer + Complementary Modulator

PROGRAM / MECHANISM

PRECLINICAL

PHASE 1

PHASE 1 COMBO

PHASE 2

UPCOMING MILESTONES

SION-451
NBD1

Galicaftor*
SION-2222
TMD1

Complete Ph 1 HV dual
combo, TLD mid-26

SION-451
NBD1

SION-109
ICL4

Complete Ph 1 HV dual
combo, TLD mid-26

Lifecycle Development

PROGRAM / MECHANISM

PRECLINICAL

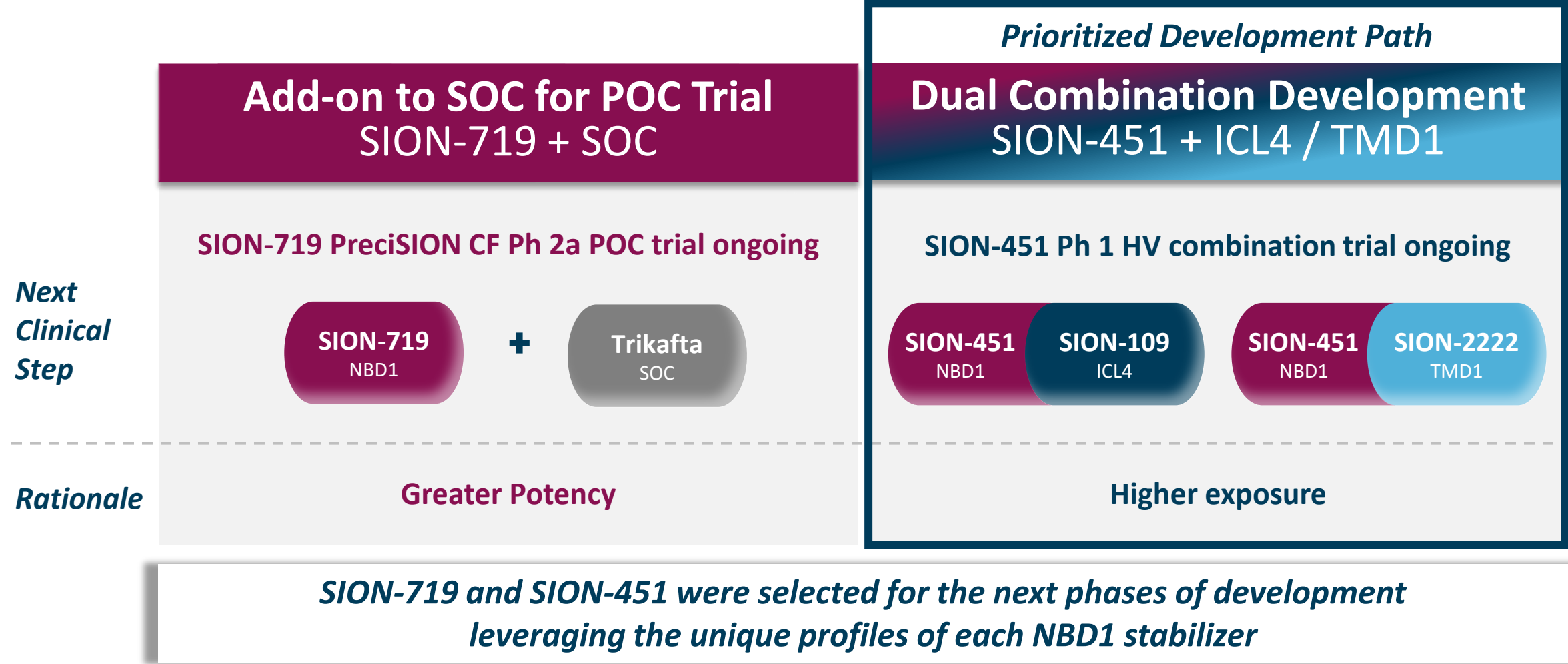
PHASE 1

PHASE 2

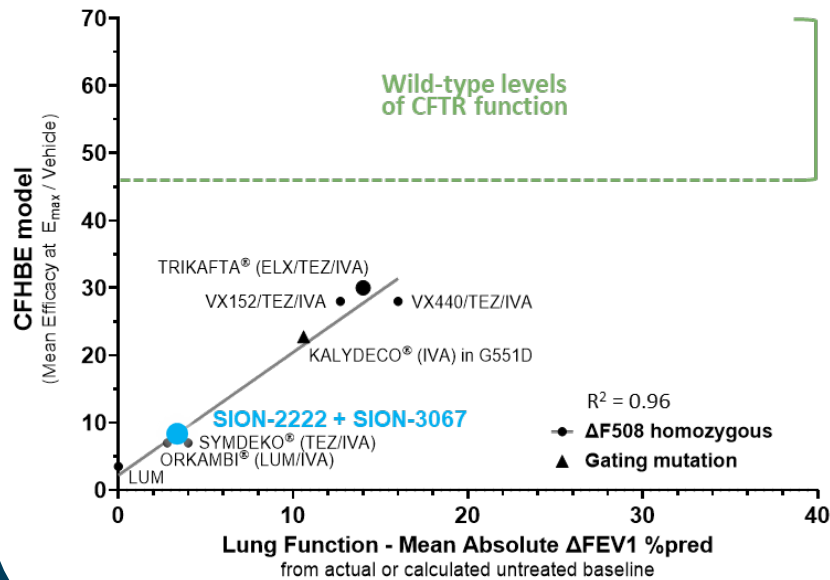
SION-2851
TMD1

Navocaftor* **SION-3067**
Potentiator

Our vision is to build a CF franchise anchored by our NBD1 stabilizers to deliver meaningful clinical benefit to CF patients



Sionna's translational CFHBE model is critical to our strategy providing evidence of NBD1's differentiation, shaped by over a decade of expertise



Our approach leverages the clinically predictive CFHBE model, using 20% human serum, designed to more closely simulate the *in vivo* environment

We successfully validated our model by replicating published clinical results

In addition to positive outcomes, our model has successfully predicted negative clinical trial outcomes

Assay expertise has been honed with over a decade of experience by our team

*NBD1 Stabilizers:
SION-719 & SION-451*

SION-719 and SION-451: novel NBD1 stabilizers advancing to next phase of development



Mechanism of Action

- NBD1 Stabilizers



Rationale and Enthusiasm for Advancement

- In Phase 1 single agent SAD/MAD HV trials, both SION-719 and SION-451 exceeded desired PK targets
 - SION-719 selected as add-on to SOC NBD1 based on high potency at low doses
 - SION-451 selected as NBD1 anchor in dual combinations based on high overall exposures



Status

- Phase 1 SAD, MAD, and FE/BE completed for both compounds
- SION-719 PreciSION CF Phase 2a POC in CF patients has initiated
- SION-451 Phase 1 HV dual combination trial with SION-2222 (galicaftor) and SION-109 has initiated



Key Upcoming Milestones

- Topline data from ongoing SION-719 Phase 2a POC trial in CF patients expected mid-26
- Topline data from ongoing SION-451 Phase 1 HV dual combination trial expected mid-26



Use Case

- SION-719 as add-on to SOC and SION-451 as anchor to proprietary dual combination
- Target the ~90% of the CF population that carry the F508del mutation

SION-719 and SION-451: single agent SAD/MAD Phase 1 trial summaries

Single agent SAD/MAD Phase 1 trials of SION-451 and SION-719

- Evaluated the safety, tolerability, and PK profiles of single and multiple ascending doses of SION-719 and SION-451 in healthy volunteers
- 3:1 randomized, double-blind, placebo-controlled studies in Australia
- SAD/MAD parts dosed as oral suspension (fasted unless noted); MAD dosing duration of 10 days
- FE/BE Part C evaluated the effect of food on PK and bioequivalence of a tablet formulation compared to oral suspension

SION-719

- 100 total subjects dosed:
 - SAD: 20mg (fasted & fed), 40mg, 80mg, 160mg
 - MAD (BID): 20mg, 40mg, 80mg, 120mg, 160mg
 - FE/BE Part C: doses in add-on to SOC and dual combo ranges

SION-451

- 110 total subjects dosed:
 - SAD: 25mg (fed), 75mg (fasted & fed), 150mg, 300mg, 450mg
 - MAD (BID): 25mg (fed), 75mg, 150mg, 225mg, 300mg
 - FE/BE Part C: doses in add-on to SOC and dual combo ranges

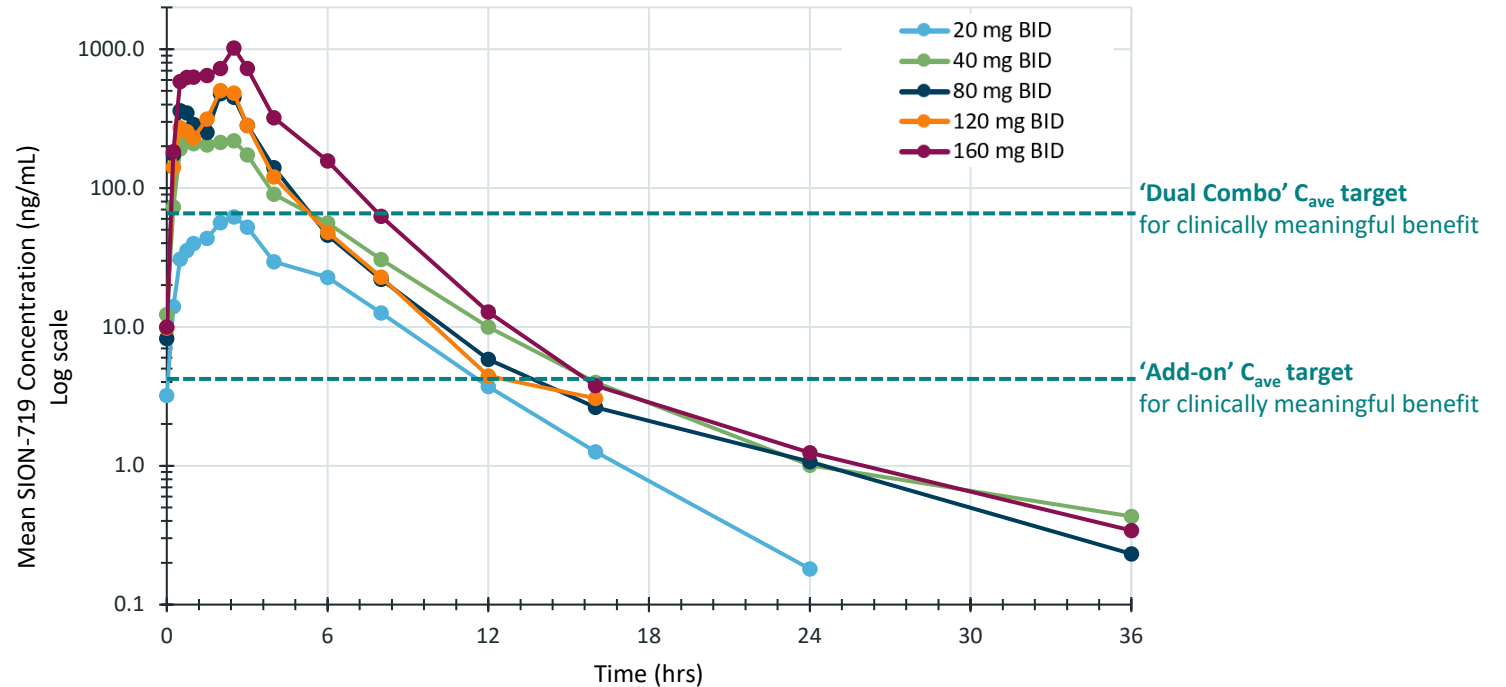
SION-719 exceeded target exposures in single agent Phase 1 trial and is an attractive add-on to SOC given high potency at lower doses

Add-on target coverage at all doses studied; dual combination coverage at ≥ 40 mg BID

High potency and synergy with SOC support lower dose SION-719 for Phase 2a POC trial

Part C data support use of the tablet in future studies and indicate SION-719 can be dosed in fed or fasted state

MAD PK Summary Day 10 Through 36 Hours Post-administration



Each solid line shows mean concentration data from a dosing cohort on Day 10

SION-719 single agent SAD/MAD Phase 1 data suggest favorable tolerability profile

SION-719 MAD Safety Summary

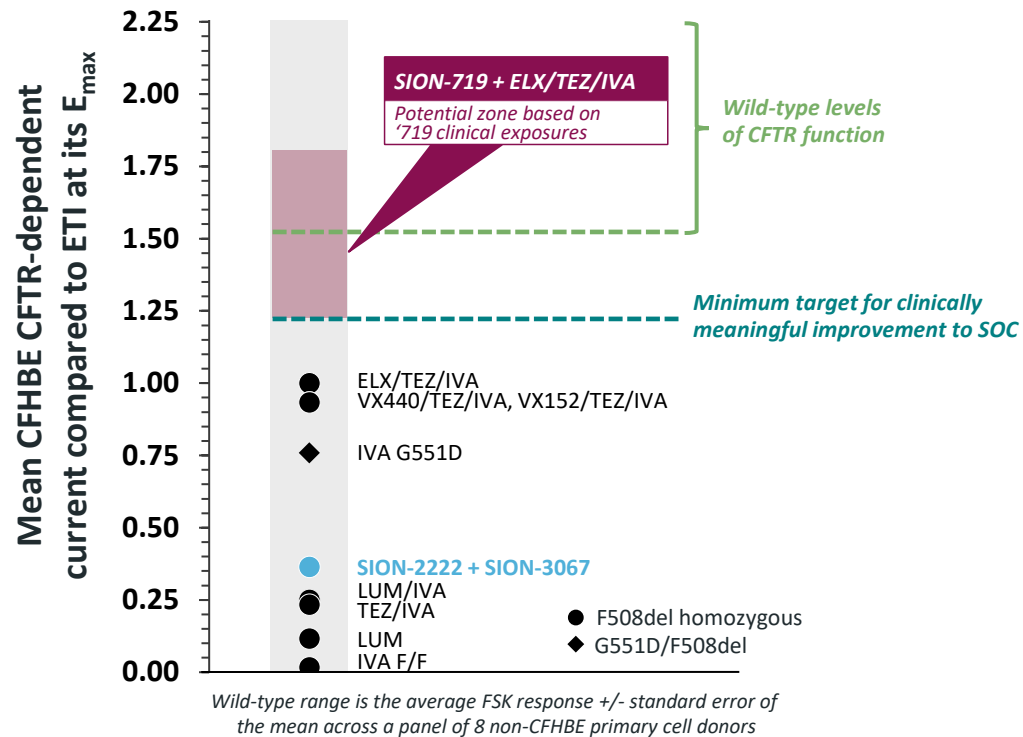
	Placebo BID (n=10)	20 mg BID (n=6)	40 mg BID (n=6)	80 mg BID (n=6)	120 mg BID (n=6)	160 mg BID (n=6)	MAD Total (n=40)
Study Participants (n)*							
Any TEAE, n (%)	4 (40)	2 (33)	4 (67)	6 (100)	5 (83)	3 (50)	24 (60)
Mild (Grade 1)	3 (30)	2 (33)	3 (50)	5 (83)	2 (33)	3 (50)	18 (45)
Moderate (Grade 2)	1 (10)	-	2 (33)	1 (17)	3 (50)	1 (17)	8 (20)
Severe (Grade 3)	-	-	-	-	-	-	-
Life-threatening (Grade 4)	-	-	-	-	-	-	-
Leading to treatment discontinuation	-	-	-	-	-	-	-
Serious TEAEs, n (%)	-	-	-	-	-	-	-
Most frequent TEAEs (≥2 subjects), n (%)							
Headache	-	-	4 (67)	1 (17)	2 (33)	2 (33)	9 (23)
Diarrhea	1 (10)	1 (17)	-	-	-	2 (33)	4 (10)
Nausea	1 (10)	-	1 (17)	-	-	1 (17)	3 (8)
Catheter site phlebitis	-	-	-	-	2 (33)	-	2 (5)
Pruritus	1 (10)	-	-	-	-	1 (17)	2 (5)

SION-719 SAD, MAD, and FE/BE Safety Highlights

- No SAEs; Most TEAEs were mild to moderate (Grade 1 or Grade 2)
- No TEAEs led to discontinuation of drug and no dose-limiting TEAEs observed
- No TEAEs related to LFTs in treated subjects
- No clinically meaningful trends in other safety parameters, vital signs or ECG parameters

SION-719's potency at low doses potentially enables a differentiated profile when added to SOC

Potential of SION-719 as an add-on to SOC*



Phase 1 PK data indicate potential for clinically meaningful benefit, including to wild-type levels, as add-on to SOC based on CFHBE target zone

Minimum CFHBE target represents at least 10 mmol/L SwCl and ~3 ppFEV₁ improvement

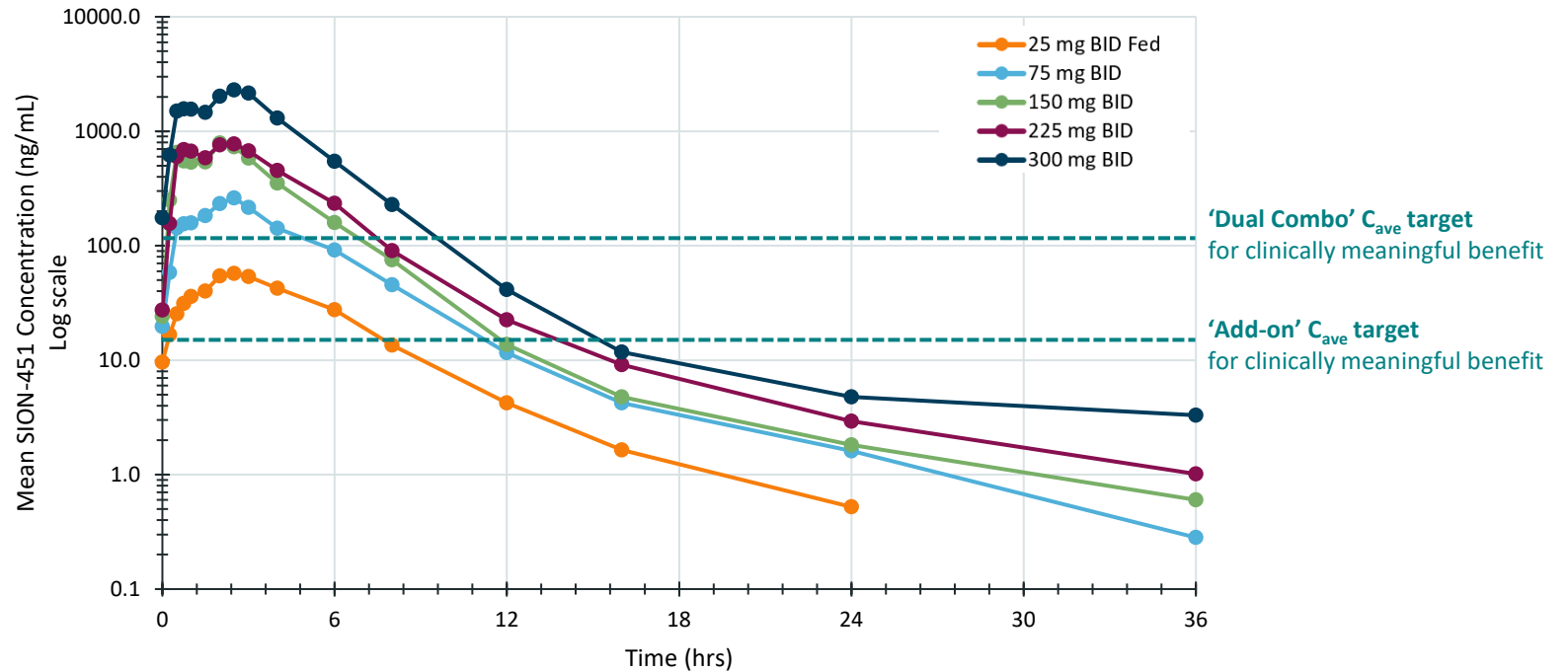
SION-451 is our preferred anchor for dual combinations given exposures achieved in target concentration zones in single agent Phase 1

Dual combination target coverage at ≥ 75 mg BID; add-on target coverage at all doses studied

High exposures support evaluating SION-451 upper dose range in Ph 1 HV dual combination

Part C data support use of the tablet in future studies and indicate SION-451 can be dosed in fed or fasted state

MAD PK Summary Day 10 Through 36 Hours Post-administration



Each solid line shows mean concentration data from a dosing cohort on Day 10

SION-451 single agent SAD/MAD Phase 1 data suggests favorable tolerability profile

SION-451 MAD Safety Summary

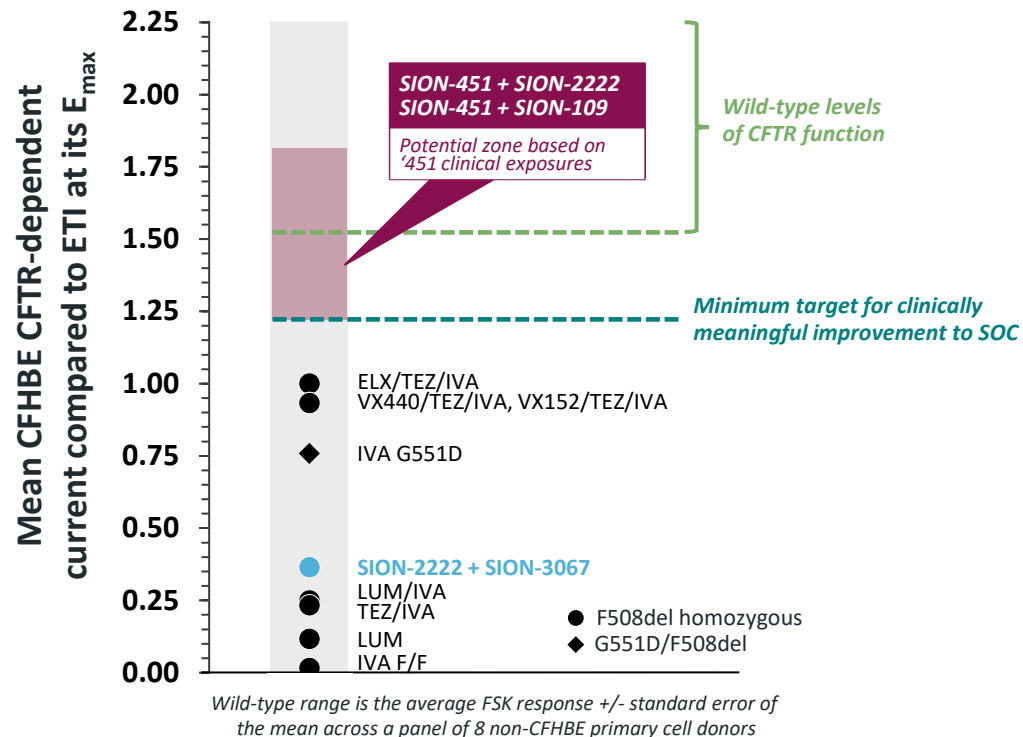
Study Participants (n)*	Placebo BID (n=9)	25 mg BID (n=6)	75 mg BID (n=5)	150 mg BID (n=6)	225 mg BID (n=6)	300 mg BID (n=6)	MAD Total (n=38)
Any TEAE, n (%)	5 (56)	2 (33)	3 (60)	3 (50)	4 (67)	2 (33)	19 (50)
Mild (Grade 1)	4 (44)	2 (33)	2 (40)	1 (17)	4 (67)	-	13 (34)
Moderate (Grade 2)	1 (11)	-	1 (20)	1 (17)	-	2 (33)	5 (13)
Severe (Grade 3)	-	-	-	1 (17)	-	-	1 (3)
Life-threatening (Grade 4)	-	-	-	-	-	-	-
Leading to treatment discontinuation	-	-	-	-	-	-	-
Serious TEAEs, n (%)	-	-	-	-	-	-	-
Most frequent TEAEs (≥2 subjects), n (%)							
Headache	3 (33)	1 (17)	-	-	2 (33)	1 (17)	7 (18)
Influenza	-	-	-	2 (33)	-	-	2 (5)
Upper Respiratory Tract Infection	1 (11)	-	-	1 (17)	-	-	2 (5)

SION-451 SAD, MAD, and FE/BE Safety Highlights

- No SAEs; Most TEAEs were mild to moderate (Grade 1 or Grade 2)
- No TEAEs led to discontinuation of drug and no dose-limiting TEAEs observed
- 1 Grade 1 TEAE related to LFTs observed in a treated subject who tested positive for influenza¹; no TEAEs related to LFTs in other cohorts
 - Same subject had transient Grade 3 neutropenia at same time as influenza
- No clinically meaningful trends in other safety parameters, vital signs or ECG parameters

SION-451 in a dual combination has the potential to provide a superior treatment option for people living with CF

Potential of SION-451 in dual combination*



Phase 1 PK data indicate potential for clinically meaningful benefit, including to wild-type levels, in a dual combination based on CFHBE target zone

Minimum CFHBE target represents at least 10 mmol/L SwCl and ~ 3 ppFEV₁ improvement

*Lead Complementary Programs:
Galicaftor (SION-2222) & SION-109*

Galicaftor (SION-2222): TMD1-directed CFTR corrector is currently being evaluated as an attractive combination agent with NBD1 stabilizer SION-451



Mechanism of Action

- TMD1-directed CFTR corrector



Rationale and Enthusiasm for Advancement

- Galicaftor (SION-2222) synergized with NBD1-directed stabilizers in CFHBE assay
- Phase 2 study M19-530 demonstrated sweat chloride and ppFEV₁ outcomes in combination with navocaftor (SION-3067, CFTR potentiator) comparable to approved duals (Symdeko and Orkambi)¹, based on indirect cross-trial comparison



Status

- Phase 2 trials evaluating galicaftor and navocaftor completed²
- Phase 1 healthy volunteer dual combination trial with SION-451 has initiated



Key Upcoming Milestones

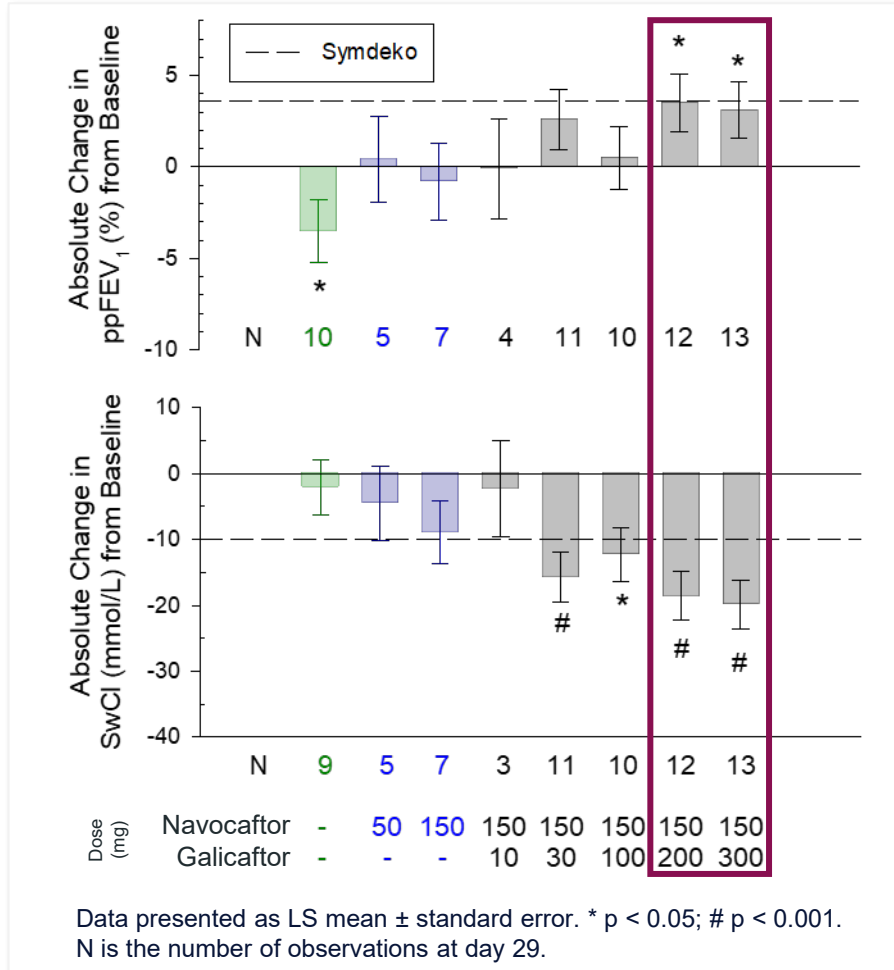
- Topline data from Phase 1 healthy volunteer dual combination trial with SION-451 expected mid-26



Use Case

- Part of a Sionna proprietary dual combination
- Target the ~90% of the CF population that carry the F508del mutation

Clinical activity similar to Symdeko[†] observed in phase 2 combination of galicaftor (SION-2222) + navocaftor (SION-3067)



Ph 2 M19-530 trial¹ in CF patients homozygous for F508del mutation:

- **Galicaftor/navocaftor dual combination increased pulmonary function in CF patients**
- **Galicaftor/navocaftor dual combination showed clinical activity** at 200 mg QD/150 mg QD and 300 mg QD/150 mg QD doses studied
- **Improved ppFEV₁** and reduced SwCl concentration at 28 days for 200mg and 300mg doses of galicaftor – responses comparable to approved dual combinations Symdeko^{2†} and Orkambi^{3†}

SION-109: ICL4-directed CFTR corrector is currently being evaluated as an attractive combination agent with NBD1 stabilizer SION-451



Mechanism of Action

- ICL4-directed CFTR corrector



Rationale and Enthusiasm for Advancement

- SION-109 synergized with NBD1-directed stabilizers in the CFHBE assay
 - Promising profile and tractable predicted target clinical dose
 - Dual combination with either of our NBD1 stabilizers resulted in wild-type levels of CFTR function in the CFHBE assay



Status

- Phase 1 healthy volunteer dual combination trial with SION-451 has initiated



Key Upcoming Milestones

- Topline data from Phase 1 healthy volunteer dual combination trial with SION-451 expected mid-26



Use Case

- Part of a Sionna proprietary dual combination
- Target the ~90% of the CF population that carry the F508del mutation

SION-109 (ICL4): Single agent SAD/MAD Phase 1 Summary

Single agent SAD/MAD Phase 1 clinical trial of SION-109

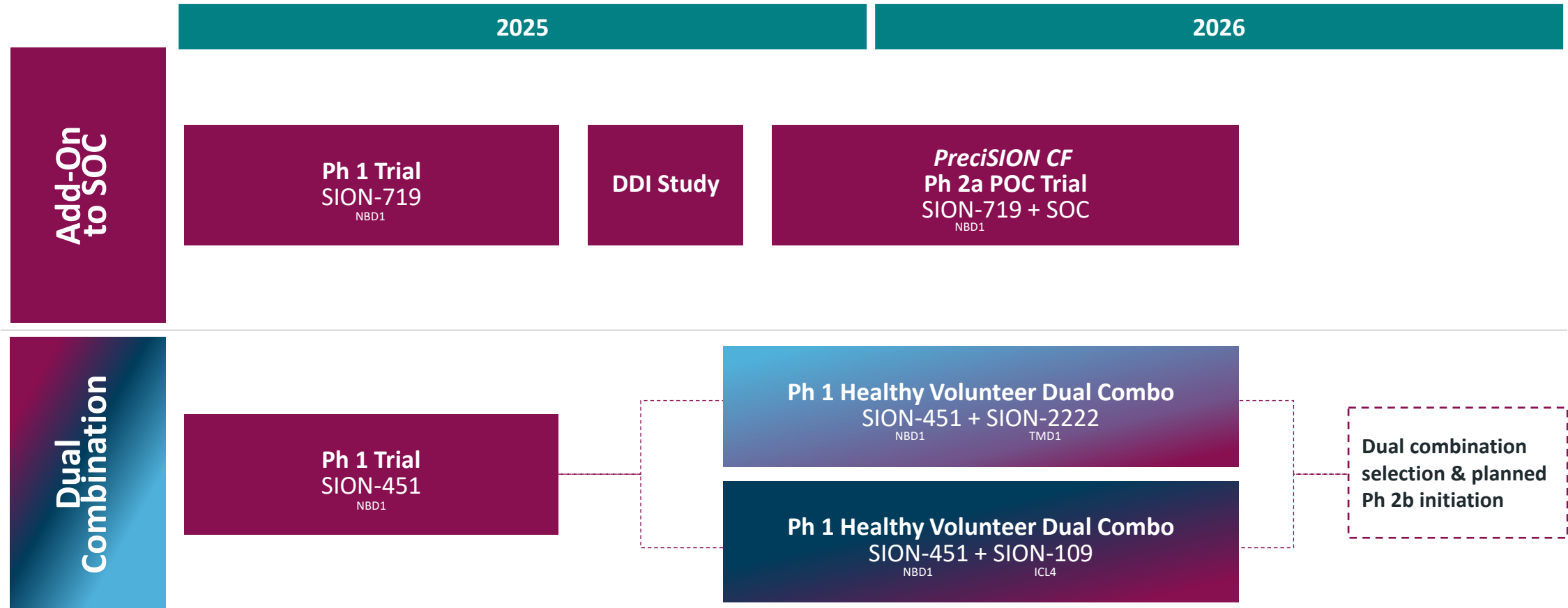
- Evaluated the safety, tolerability and PK profile of single and multiple ascending doses of SION-109 in 102 healthy volunteers; single doses 50 mg to 400 mg, multiple doses 50 mg BID to 150 mg BID
- 3:1 randomized, double-blind, placebo-controlled study in the U.S.
- SAD/MAD parts dosed as oral suspension; also evaluated the effect of food on PK and bioequivalence of a tablet formulation compared to oral suspension in 15 subjects
- FE/BE Part C: 100 mg single dose (x 3) dosing complete

SION-109 Phase 1 data suggests an encouraging tolerability and PK profile

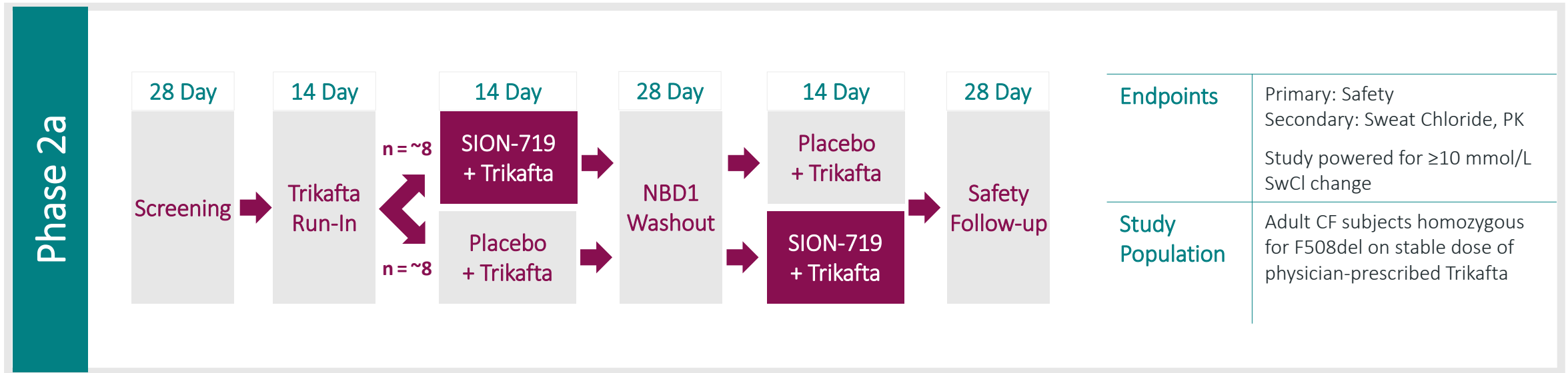
- Dosing generally well tolerated
- No SAEs; most AEs were mild to moderate
- SAD and MAD PK showed target mean trough concentration from CFHBE assay achieved at 75 mg BID and higher doses
- PK consistent with BID dosing

Clinical and Portfolio Strategy

Sionna's development strategy is data-driven with multiple near-term milestones



PreciSION CF Phase 2a proof-of-concept trial ongoing: *Evaluating low-dose SION-719 added to Trikafta®*



Objectives are to demonstrate that
NBD1 is mechanistically unique from, and synergistic with the components of Trikafta, and that adding
a low dose of NBD1 to Trikafta is associated with improved CFTR function



Commercial Opportunity & Unmet Need

Significant commercial opportunity exists for our NBD1-led franchise to provide a potentially transformative treatment for CF, if approved

~**106K** patients with CF across 94 countries¹

U.S.

~33k

EU4 + UK

~35k

ROW

~38k



~**90%** patients have at least one F508del-CFTR mutation²

>**2/3** of patients on SOC do not have normal CFTR function^{3*}

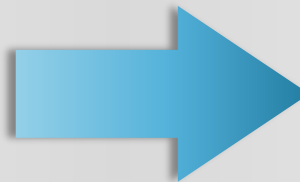
>**6,000** patients have discontinued use of approved CFTR modulators⁴

>**20%** of eligible patients are currently **not on CFTR modulators**⁵

CNS side effects reported (mood disturbances^{6,9}, depression⁹, mental foginess⁶)

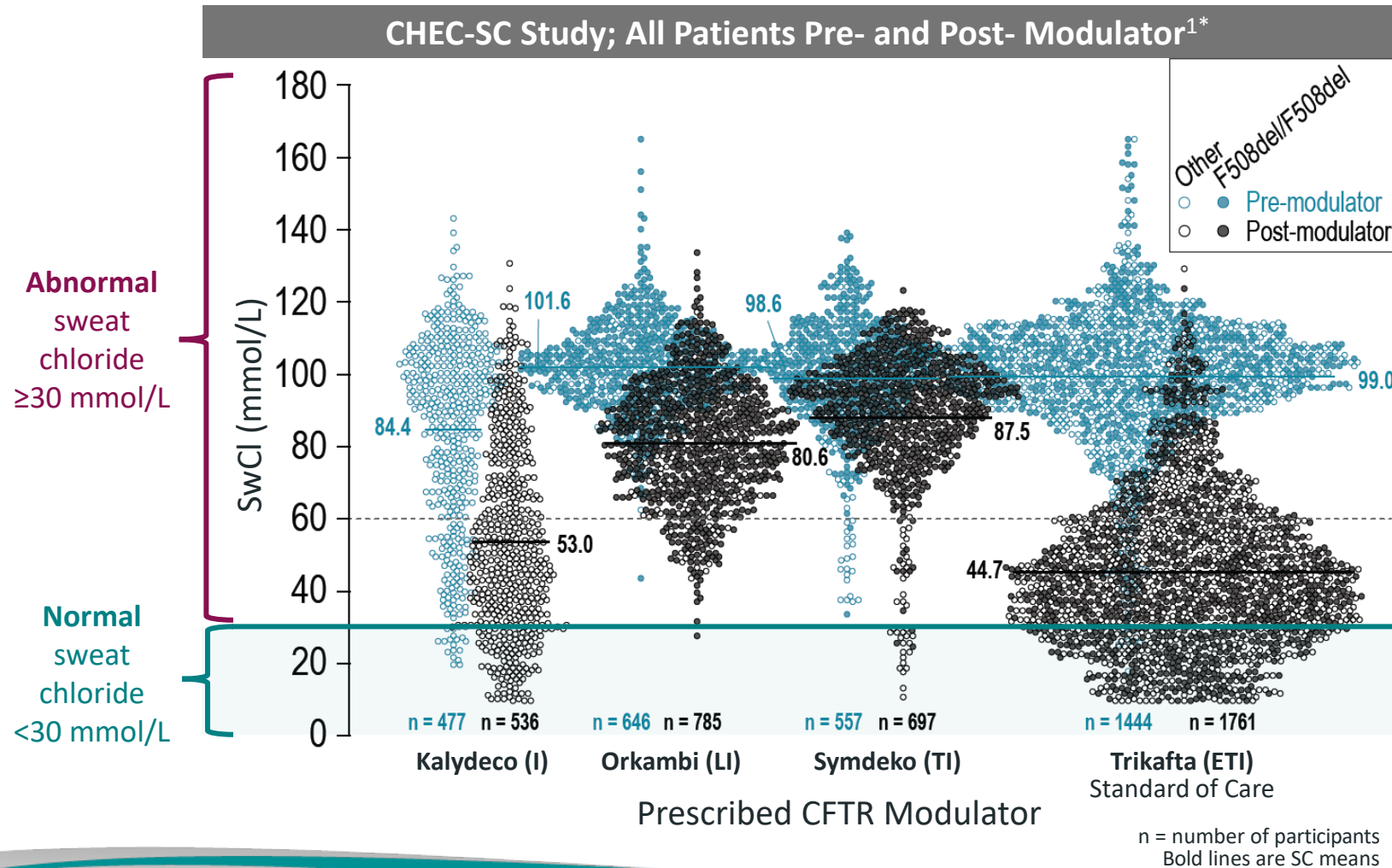
Non-responders or patients with tolerability challenges have **limited or no alternatives**⁶

>**\$11B**
worldwide revenues of CFTR modulators today⁷



\$15B
opportunity by 2029⁸

Despite advancements in treatment, the unmet need remains high, as many CF patients on treatment do not achieve normal CFTR function



>2/3rd of patients on Trikafta do not have normal CFTR function^{1,2}

as measured by sweat chloride < 30 mmol/L

~69% of Alyftrek patients in two Phase 3 clinical trials conducted by Vertex did not achieve normal CFTR function³

Closing

Sionna's innovative approach to CFTR restoration has the potential to disrupt the CF market, and is well-funded to execute with cash into 2028

**HIGH UNMET NEED
IN LARGE MARKET**

Today's CF market
is **>\$11B¹**,
expected to be
\$15B by 2029²

**NOVEL
MECHANISM**

Differentiated
approach targeting
NBD1, a key
mechanism to
potentially restore
F508del CFTR
function

**POTENTIALLY
TRANSFORMATIVE
MEDICINES**

Proven execution
with multiple
trials completed
and more ongoing

Goal is to
transform the CF
standard of care

**KEY NEAR-TERM
CATALYSTS**

TLD for **Ph 2a POC**
and **Ph 1 HV**
dual combo trials
expected mid-26