

Corporate overview

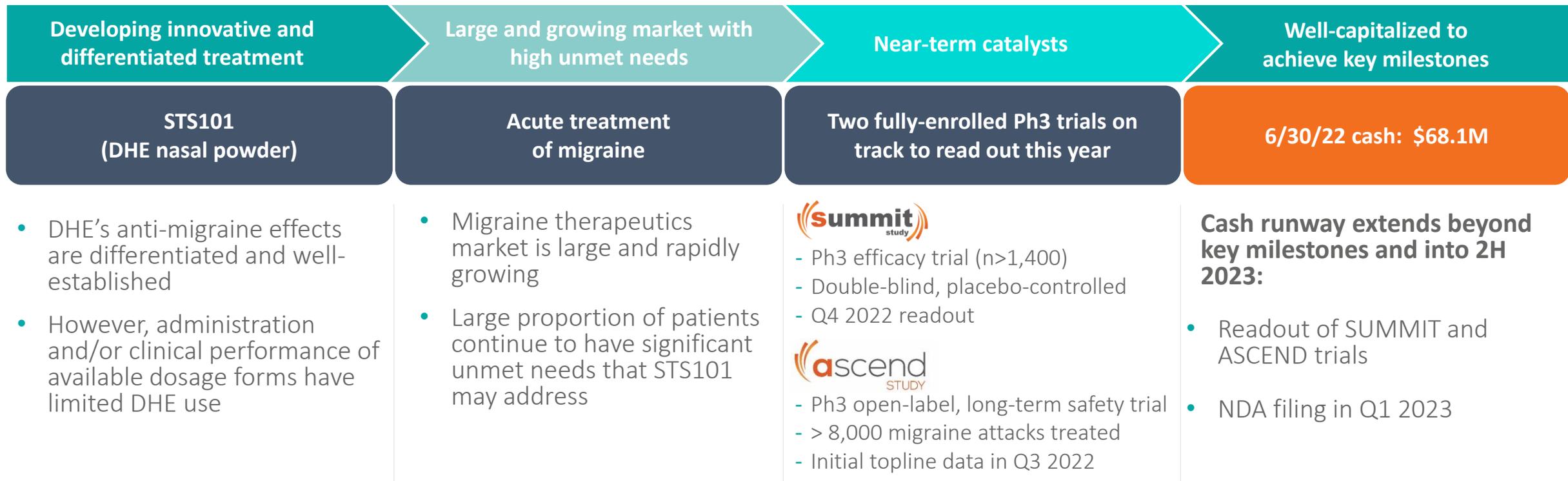
NASDAQ: STSA | August 9, 2022



Important Notice

This Presentation contains forward-looking statements concerning the business, operations and financial performance and condition of Satsuma Pharmaceuticals, Inc. (the “Company”), as well as the Company’s plans, objectives and expectations for its business operations and financial performance and condition. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “aim,” “anticipate,” “assume,” “believe,” “contemplate,” “continue,” “could,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “predict,” “potential,” “positioned,” “seek,” “should,” “target,” “will,” “would,” and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about the Company’s expectations regarding the potential safety and efficacy of STS101; the Company’s clinical and regulatory development plans; the Company’s expectations with regard to the ASCEND and SUMMIT trials; the Company’s expectations regarding the potential market size and size of the potential patient populations for STS101, if approved for commercial use; the Company’s commercialization, marketing and manufacturing plans and expectations; the pricing and reimbursement of STS101, if approved; the implementation of the Company’s business model and strategic plans for its business and STS101; the scope of protection the Company is able to establish and maintain for intellectual property rights covering STS101, including the projected terms of patent protection; estimates of the Company’s expenses, future revenue, capital requirements, its need for additional financing and its ability to obtain additional capital; the Company’s future financial performance; and developments and projections relating to the Company’s competitors and the Company’s industry, including competing therapies and procedures. In light of these risks and uncertainties, the events or circumstances referred to in the forward-looking statements may not occur. The Company’s actual results could differ materially from those stated or implied in forward-looking statements due to a number of factors, including but not limited to, risks detailed in the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, filed with the Securities and Exchange Commission, as well as other documents that may be filed by the Company from time to time. In particular, the following factors, among others, could cause results to differ materially from those expressed or implied by such forward-looking statements: the accuracy of the Company’s estimates relating to its ability to initiate and/or complete clinical trials; the Company’s ability to demonstrate sufficient evidence of efficacy and safety in its clinical trials of STS101; the Company’s ability to select suitable dosing regimens; the results of preclinical and clinical studies may not be predictive of future results; the unpredictability of the regulatory process; regulatory developments in the United States and foreign countries; the costs of clinical trials may exceed expectations; the Company’s ability to raise additional capital; and the risk that costs of clinical trials and preclinical activities will exceed expectations. Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, it cannot guarantee that the events and circumstances reflected in the forward-looking statements will be achieved or occur, and the timing of events and circumstances and actual results could differ materially from those projected in the forward-looking statements. Accordingly, you should not place undue reliance on these forward-looking statements. All such statements speak only as of the date made, and the Company undertakes no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

This Presentation discusses STS101, a product candidate that is under clinical study, and which has 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 STS101 for the therapeutic use for which STS101 is being studied.



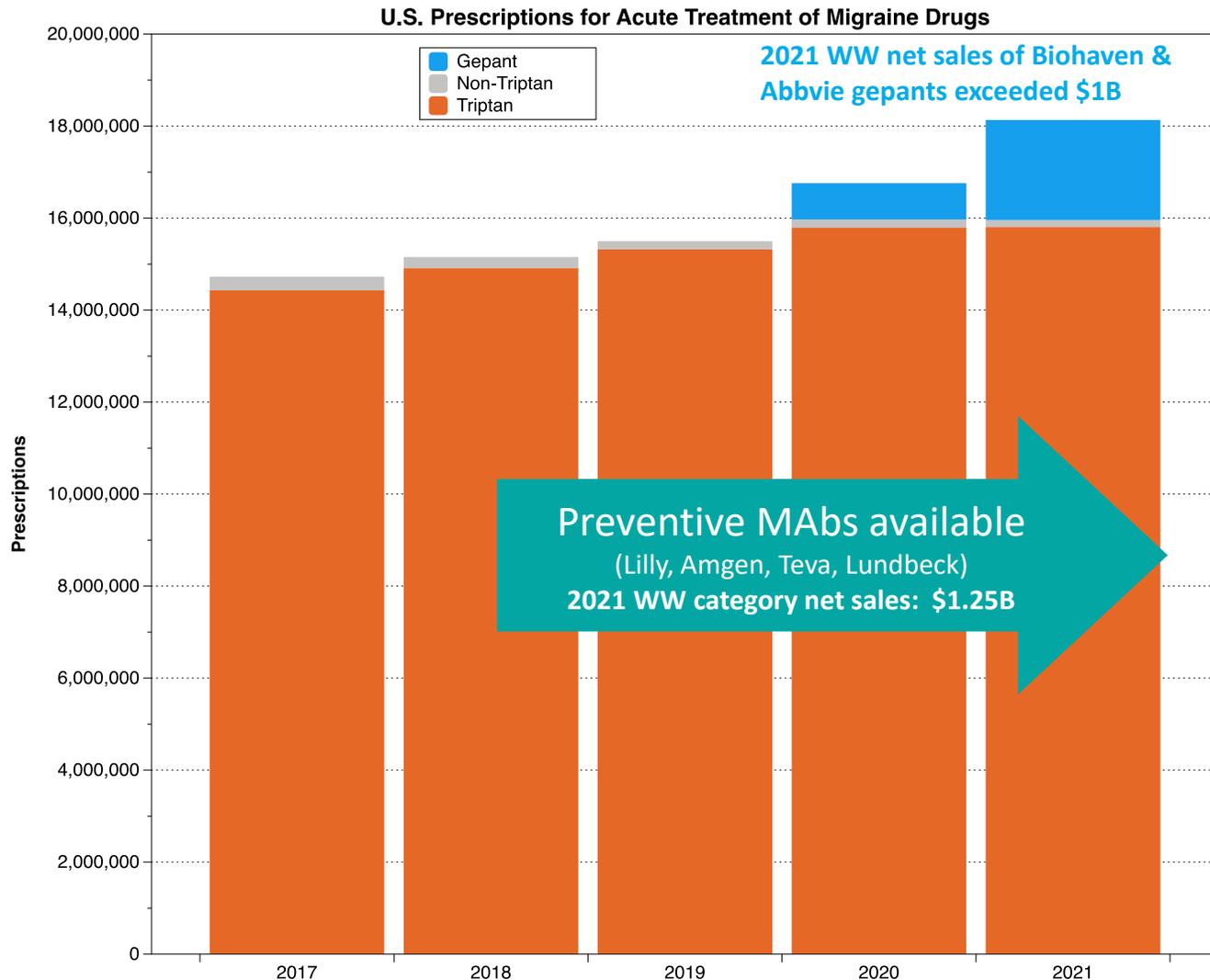
STS101



- Proprietary, advanced formulation technology and easy-to-use delivery device
- Broad and long-lived IP estate with expected U.S. patent protection through late 2039

- Team with strong track record of execution
- Significant value creation opportunity

STS101 targets the large and rapidly expanding acute treatment of migraine market



Source: IQVIA data and company reports

Commercial success of new migraine products underscores large market opportunity, significant unmet needs and favorable dynamics

- Introduction of new preventive and acute therapies has expanded overall market
- Net sales of new acute therapeutics* grew rapidly in 2021, exceeding \$1B

Implications for STSA commercial strategy

- High prescriber audience addressable with a specialty field force of ~120 representatives
 - ~12k prescribers responsible for 80% of gepant Rx
- Industry structure within migraine space conducive to partnering opportunities
 - >\$16B in migraine M&A deals since 2013 (n=8)

*Rimegepant, ubrogepant and lasmiditan. Figure may also include sales attributable to preventive use of rimegepant, as prevention indication approved by FDA in late May 2021

Dihydroergotamine (DHE) is highly effective, but shortcomings of injectable and liquid nasal spray dosage forms have limited use



DHE

- Long recommended as a first-line option for the acute treatment of migraine
- Unique and multi-faceted MoA
- Significant advantages over triptans and new acute treatments
- Broad clinical utility, including for difficult-to-treat migraines & triptan insufficient responders
- Could address many shortcomings of triptans and gepants if available in an **easy-to-use, well-tolerated** and **consistently effective** dosage form

Clinical attribute	Triptans	DHE
Long treatment window with minimal attenuation of effect when administered late in course of attack¹ Opportunity for early treatment possible in only ~50% of attacks ²	✗	✓
Low risk of 24+ hr headache recurrence³ Recurrence in up to 45% of triptan-treated attacks ³	✗	✓
Effective in migraine with allodynia⁴ Present in majority of attacks (53-79%) ⁵	✗	✓
Effective in triptan non-responders⁶ ~40% of patients don't respond* to oral triptans; ⁷ ~50% of triptan non-responders shown to respond to DHE ⁶	✗	✓
Low risk of medication overuse headache⁸	✗	✓

Sources:

1. Tepper, Mayo Clin Proc 2011
2. Valade, Cephalgia 2009
3. Winner, Arch Neurology 1996
4. Tepper, Headache 2012

5. Lipton, Headache 2017
6. Fisher, Curr Med Res Opin 2007
7. Ferrari, Cephalgia 2002
8. Saper, Headache 2006

*40% based on pain relief at 2 hours from administration; up to 80% do not achieve sustained freedom from pain

DHE for migraine is safe



Over 70 years of clinical use without major safety problems

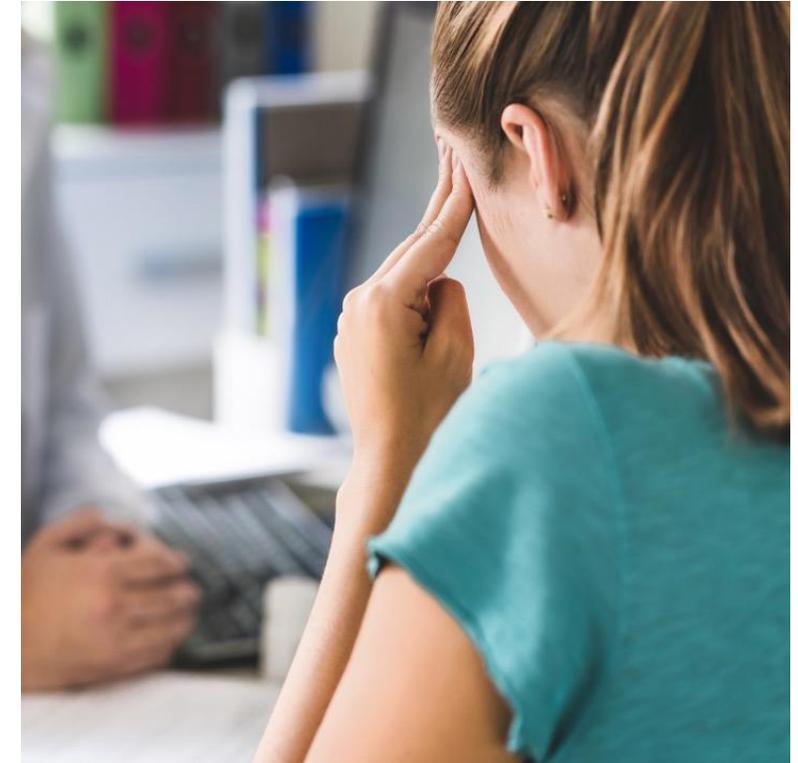


Reports of serious adverse events are rare



DHE for migraine recommended as safe when used in recommended doses & in patients without contraindications (AAN Panel 1995)

DHE should not be given to patients with uncontrolled hypertension, coronary or peripheral arterial disease



DHE differentiated clinical profile explained by unique pharmacology

- Anti-migraine effects via vasoconstrictive, antinociceptive and neuro-anti-inflammatory mechanisms
- DHE activity against multiple receptors may explain robust clinical activity despite migraine disease having complex and heterogenous pathophysiology

Receptor		Triptans	DHE	Anti-migraine mechanism
		Activity	Activity	
Serotonergic	5-HT _{1A}	++	+++	
	5-HT _{1B}	+++	+++	Vasoconstriction
	5-HT _{1D}	+++	+++	Inhibits neuroinflammation; blocks CGRP release
	5-HT _{1F}	++	+	Inhibits pain transmission
	5-HT _{2A}		++	Inhibits neurogenic inflammation
	5-HT _{2C}		+++	
Adrenergic	α _{1a}		++	Inhibits pain transmission & neuroinflammation
	α _{1b}		++	
	α _{2a}		+++	Blocks CGRP release
	α _{2b}		+++	
	α _{2c}		+++	Blocks CGRP release
Dopaminergic	D ₂		+++	Antagonist
	D ₃		++	
	D ₄		++	

SOURCES: McCarthy & McCarthy, Headache, 1989.
 Dahlöf et al., Headache 2012.
 Masterson and Durham, Headache, 2010.
 González-Hernández et al., J Headache & Pain, 2018.
 Cook et al., Headache, 2009.



Available DHE products are not easy-to-use, well-tolerated or consistently effective

DHE for Injection (IV, IM, SC)

Marketed since 1946



Gold standard treatment for severe / refractory migraine

- Injections are painful and burdensome
- Patients prefer non-injectables
- Nausea, vomiting and other side effects occur more frequently with injection
- Frequently requires administration by HCP

DHE liquid nasal sprays (Migranal, INP104/Trudhesa)

First approved in 1997



Highly variable PK results in unreliable clinical performance and suboptimal therapeutic response for many patients

- Low, slow, and highly variable absorption due to inherent nature of liquid spray formulation
- Complex, multi-step administration procedure
 - Assembly & priming required
 - Removing metal band from vial poses laceration risk
 - 4 sprays administered over 15 minutes

MAP004 Inhaled, multi-dose, breath-actuated DHE

Discontinued after 3 CRLs (2012-2015) for CMC



Ph3 data underscore DHE differentiation & benefits

- Introduction was highly anticipated by headache physicians
- Developer MAP Pharmaceuticals acquired by Allergan for \$958M

MAP004 also known by the brand names Semprana and Levadex.

There is an unmet need for a patient-friendly, self-administered, non-injected DHE product that delivers rapid, durable, and robust efficacy

Our solution: STS101 (DHE nasal powder)
Proprietary nasal delivery device & dry-powder formulation technologies

Drug-Device Combination

- **Easy-to-use**: quick and intuitive self-administration
- Differentiated and injectable-like PK with low variability should translate to **consistent efficacy**
- Anti-migraine effects and **favorable safety and tolerability** observed to date in our clinical trials



Single-use nasal delivery device

- Easy to use; no assembly or priming required
- Administration of a full-dose within seconds
- Pocket-sized, smaller than available DHE liquid nasal spray devices; discreet and disposable



Proprietary mucoadhesive nasal powder formulation

Incorporates drug carrier and engineered drug particle technologies that facilitate rapid drug absorption and optimal PK profile

Intuitive simple administration – a full dose within seconds



1

FOLD OFF TAB



2

INSERT IN ONE NOSTRIL



3

SQUEEZE TO DELIVER



Our development strategy positions STS101 for commercial success

Develop STS101 as a highly differentiated anti-migraine therapeutic suitable for broad use

- ✓ Easy-to-use and easy-to-carry
- ✓ Unique PK profile optimized to maximize efficacy while minimizing systemic side effects (i.e., nausea)
- ✓ Generate compelling and highest quality clinical evidence in large RCT (ongoing SUMMIT trial)
 - **First and only DHE product with label claims on standard modern efficacy endpoints (Pain and MBS freedom at 2h) that are endorsed by FDA and International Headache Society**
- ✓ Confirm the favorable safety and tolerability profile observed to date among >1,000 subjects who have treated >8,500 migraine attacks with STS101 5.2 mg

Rapid Adoption

- Prescribers
- Patients



Acceptance & Reimbursement

- Formulary & reimbursement coverage
- Medical guideline inclusion



Recent primary market research findings point to large potential STS101 commercial opportunity



Physicians

- Over 70% of physicians surveyed expressed high interest in STS101*
- Top prescribers anticipate prescribing STS101 to ~30% of their patients
- See STS101 as having broad potential utility for a wide range of migraine patients
- View STS101 as a 1st-line branded treatment option for triptan insufficient responders



People with migraine

- Generally dissatisfied with their existing medications
- 80% interviewed were either very or extremely interested in STS101
- STS101 had broad appeal to many patient types
- Simplicity of STS101 was a key driver of high interest



Payers

- No major barriers to patient access expected
- Demonstrated efficacy in SUMMIT Ph3 trial should provide compelling support for formulary inclusion and reimbursement

STS101 5.2 mg achieved target PK profile in 2021 Ph1 trial



Rapidly achieved and sustained target plasma concentrations with low variability

Expect PK profile to translate to

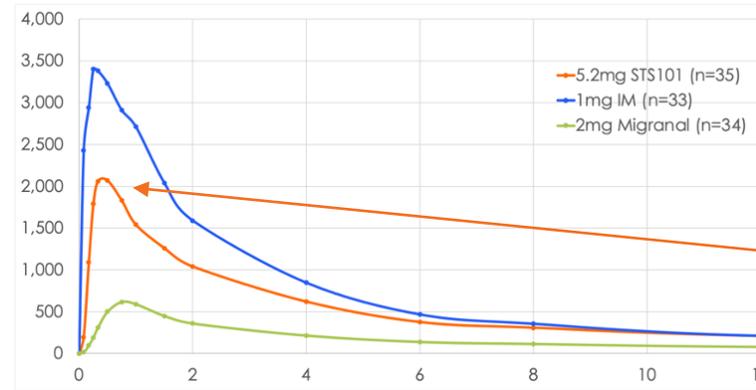
- Fast onset
- Robust efficacy by 2 hours and beyond
- Sustained efficacy with low recurrence

Favorable safety & tolerability

- STS101 5.2 mg continues to demonstrate low AE rates
- Incrementally higher AE rates observed with STS101 dose strengths > 5.2 mg (e.g., nasal congestion, nausea and vomiting)

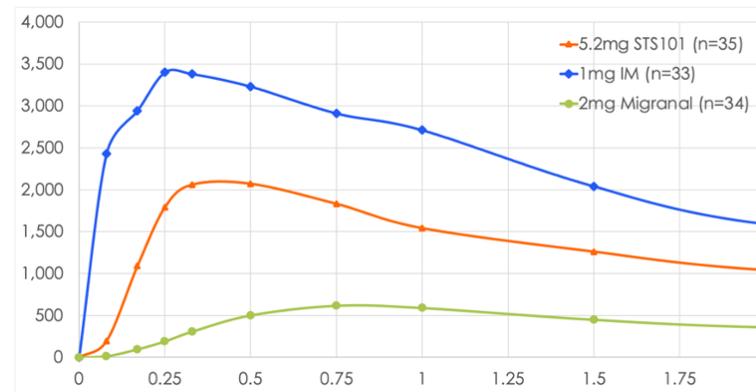
Adverse Event	5.2 mg STS101	IM DHE	Migranal
Safety Population (n)	35	34	34
At least 1 treatment related AE	5 (14%)	10 (29%)	4 (12%)
Nasal congestion	2 (6%)		1 (3%)
Nasal discomfort	1 (3%)		
Nausea	1 (3%)	3 (9%)	
Headache		2 (6%)	
Dizziness	1 (3%)		
Emesis		1 (3%)	

2021 Ph1 PK study with 2nd generation delivery device Mean DHE plasma concentration (pg/mL)



- Early peak is key for efficacy at 2h
- $C_{max} > \sim 2500$ pg/ml results in higher rate of systemic side effects

Time after dosing (0-12 hours)



Time after dosing (0-2 hours)

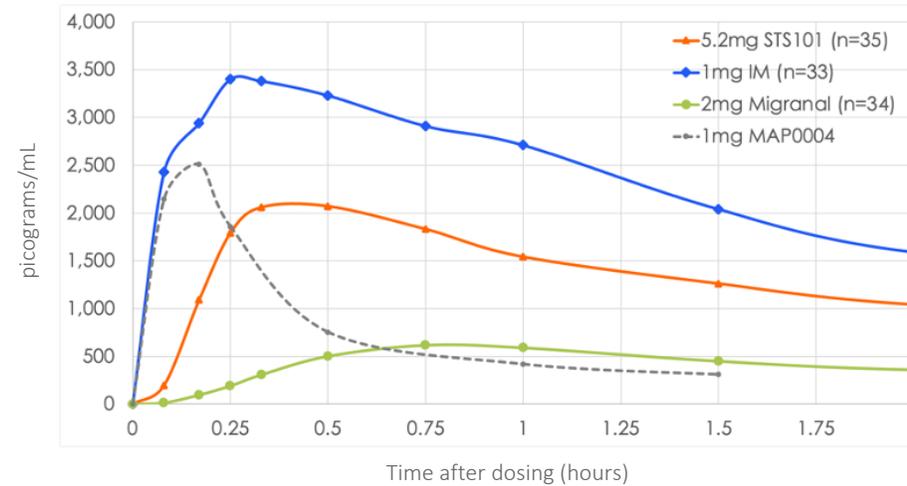
Source: STS101-006 Phase 1 Study Preliminary Results – June 2021

STS101 5.2 mg achieved target PK profile in 2021 Ph1 trial



- STS101 achieved ~2.5x total drug exposure (AUC_{0-inf}) vs. MAP0004 pulmonary-route DHE, with greater exposure achieved by 30 minutes and all times thereafter
- More rapid and higher drug exposure achieved with lower variability versus liquid nasal spray DHE products
- STS101 PK profile similar to IM DHE and MAP0004, which have consistently demonstrated robust efficacy by 2 hours post-treatment in randomized, controlled clinical trials

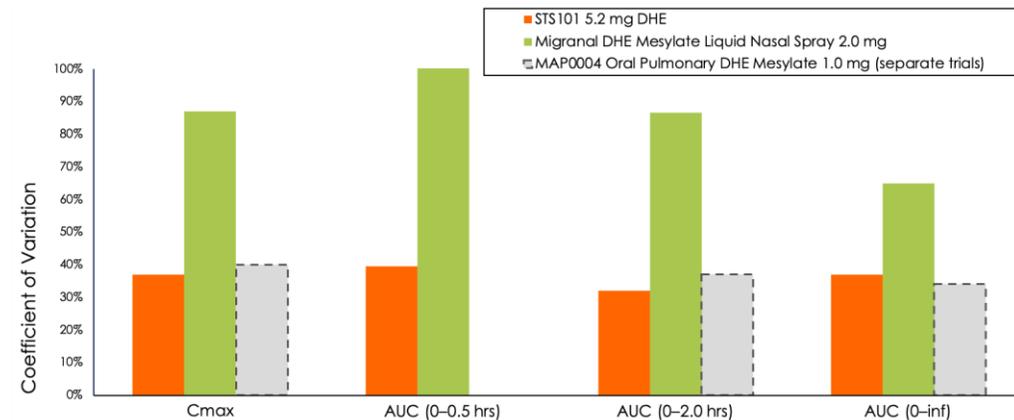
Mean DHE plasma concentration of STS101 versus other non-injectable DHE products



MAP0004 had robust 2h efficacy in large RCT, but lower efficacy at later time points

Migranal has marginal and inconsistent 2h efficacy in RCTs

STS101 PK variability less than DHE liquid nasal spray and comparable to MAP0004



Source: Kellerman et al., J Aerosol Pulm Drug Deliv 2013; STS101-006 Phase 1 Study Preliminary Results – June 2021

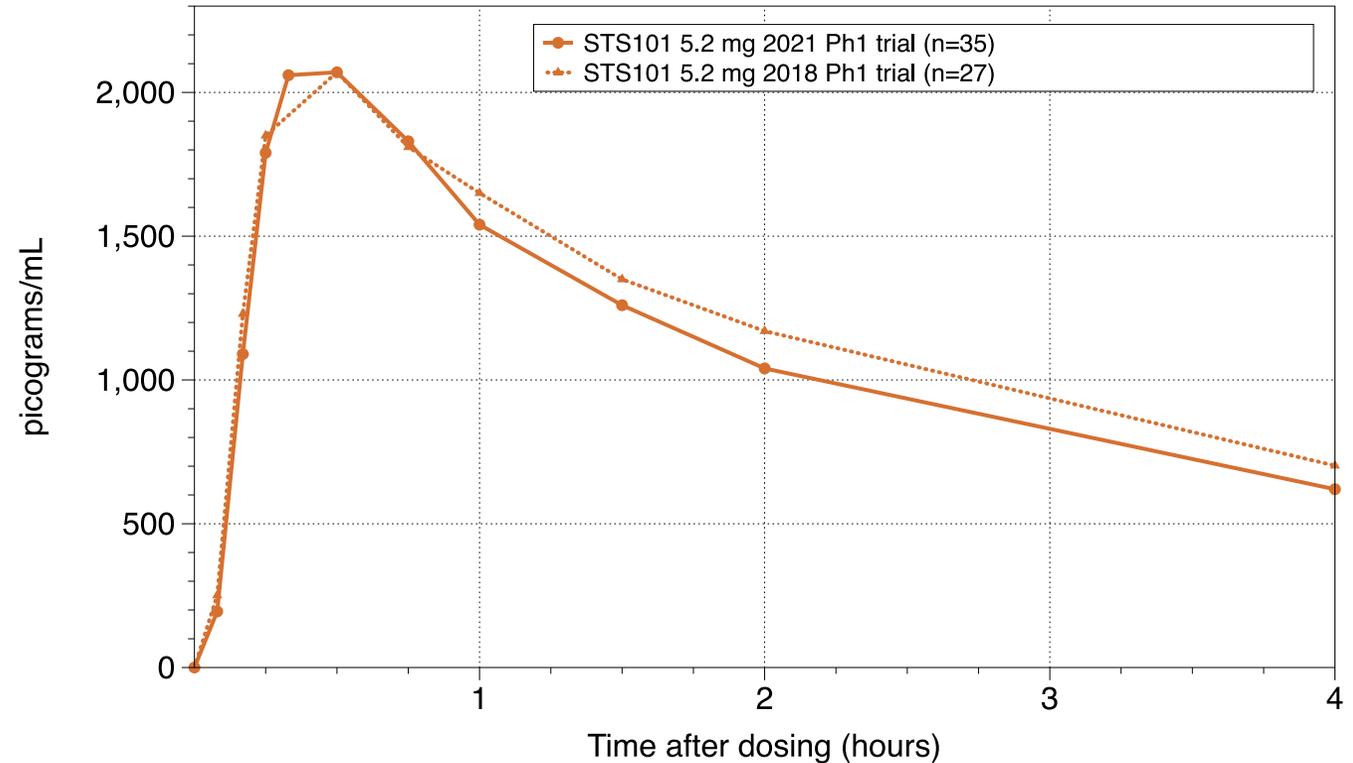
Note: As the data presented above is based on a cross-trial comparison and not a head-to-head clinical trial, such data may not be directly comparable due to differences in study protocols, conditions and patient populations. Accordingly, cross-trial comparisons may not be reliable predictors of the relative efficacy or other benefits of STS101 compared to other product candidates that may be approved or that are or were in development for the acute treatment of migraine.

STS101 demonstrates consistent absorption and PK



- 2018 Phase 1 trial
 - Formulation manufactured at pilot scale by R&D CMO
 - 1st-generation delivery device
- 2021 Phase 1 trial
 - Formulation manufactured at large scale by commercial CMO using same type of equipment and process as R&D CMO
 - 2nd-generation delivery device

Mean DHE plasma concentration of STS101 in 2018 and 2021 Ph1 trials



ASCEND Phase 3 open-label, long-term safety trial is ongoing

- >480 subjects enrolled; migraine attacks treated on a PRN basis with STS101 5.2 mg
- Have generated full safety data set requested by FDA with 2nd-generation device
- >8,000 migraine attacks treated, ~48% of which had severe pain at time of treatment¹
- Favorable safety and tolerability observed²

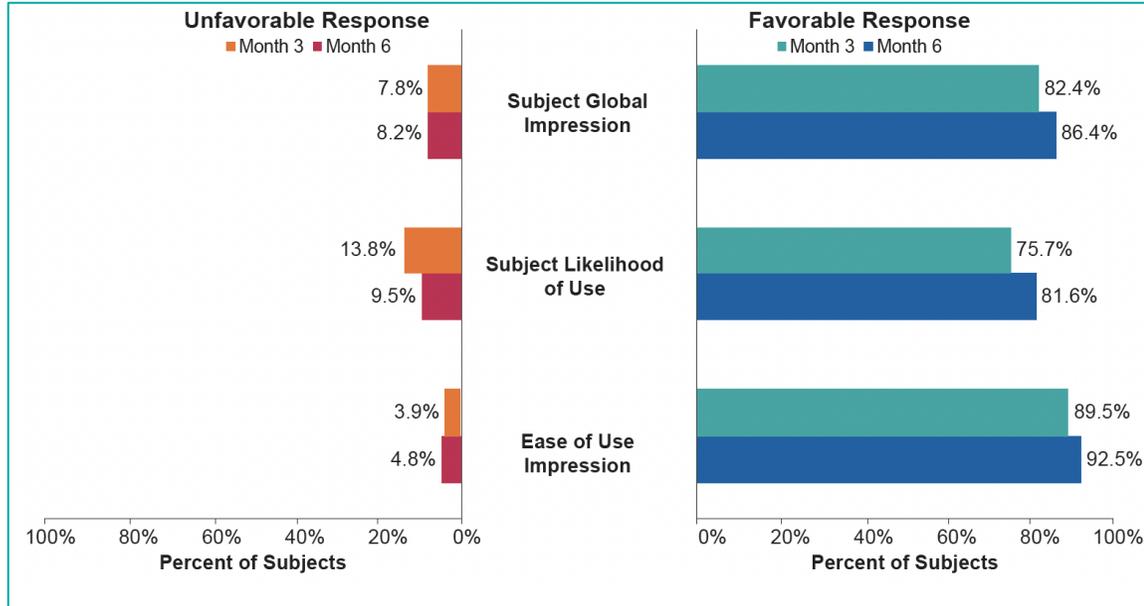
Related adverse events in >2% of subjects	N (%) of subjects reporting AE at least once (271 subjects)	% of attacks with AE (5,443 attacks)
Nasal discomfort	41 (15.1)	178 (3.3)
Dysgeusia	22 (8.1)	175 (3.2)
Nasal congestion	16 (5.9)	92 (1.7)
Nausea	12 (4.4)	15 (0.3)
Rhinorrhea	9 (3.3)	46 (0.8)
Vomiting	9 (3.3)	13 (0.2)
Nasal pain	8 (3.0)	10 (0.2)
Migraine	7 (2.6)	9 (0.2)

- **Observed anti-migraine activity²:** Subjects report pain freedom at 2 hours post-treatment in ~30% of attacks, with low utilization of second STS101 dose (<20% of attacks) or rescue medication (<5%)
- **Subjects have favorable impressions of STS101 and its effects on their migraines³**

1. Severe pain at time of treatment is the key predictor of lack of response at 2h, as migraine pain is less responsive to treatment when it has progressed to severe pain (Diener et al., Neurology 2004; Diener et al., Cephalalgia 2007; Lombard et al., Headache 2020)
2. Based on December 31, 2021 interim analysis of ASCEND data; Tepper et al., AHS mtg 2022 and June 2022 Satsuma KOL webinar
3. Ailani et al, AHS mtg 2022

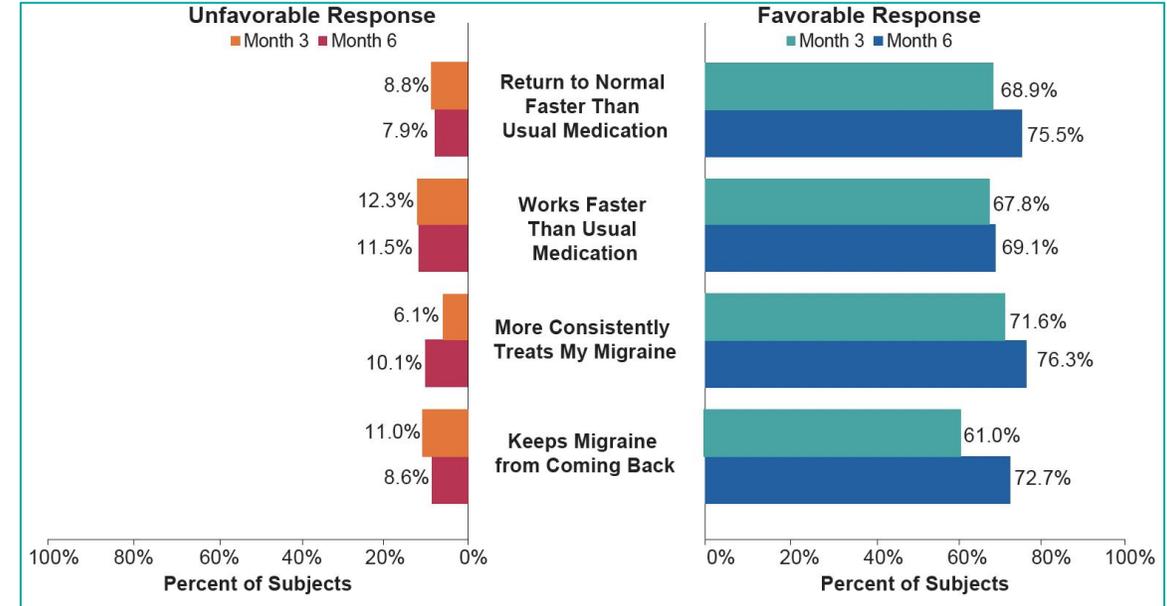
ASCEND subjects have favorable impressions of STS101 and its anti-migraine effects

Subject impressions of STS101



n=153-153 at month 3; 147 at month 6

Subject impressions of STS101 effect on their migraines



n=146-148 at month 3; 139 at month 6

	Response options		
	Unfavorable	Neutral	Favorable
Subject global impression	Very poor, Poor	No opinion	Good, Very good
Subject likelihood of use	Very unlikely, Unlikely	No opinion	Likely, Very likely
Ease of use impression	Not easy at all, Not easy	No opinion	Easy, Very easy

	Response options		
	Unfavorable	Neutral	Favorable
Return to normal faster than usual medication	Strongly disagree, disagree	Neutral	Agree, Strongly agree
Works faster than usual medication			
More consistently works than usual medication			
Keeps migraine from coming back			

SUMMIT Phase 3 efficacy trial ongoing

Fully enrolled; top-line results expected Q4 2022

SUMMIT trial design

To qualify, patients must have experienced in each of the prior 3 months:

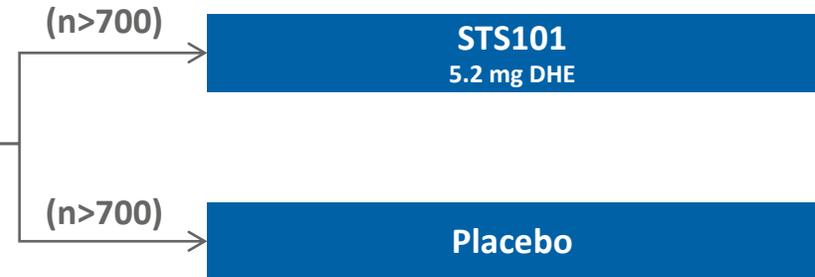
- ≥ 2 and ≤ 8 migraines
- < 15 days headache days

- Designed per published FDA guidance for developing acute treatment of migraine drugs (Feb 2018)
- FDA agreed in principle with SUMMIT design and that product label could include SUMMIT efficacy data

Screening period



Treatment of single migraine attack within 56 days of randomization



Endpoints & powering

- **Co-primary: Freedom from pain and most-bothersome symptom** (photophobia, phonophobia, or nausea) at 2 hours post-treatment
- Multiple secondary endpoints and prospective analyses of subgroups to potentially enhance the differentiated clinical profile of STS101

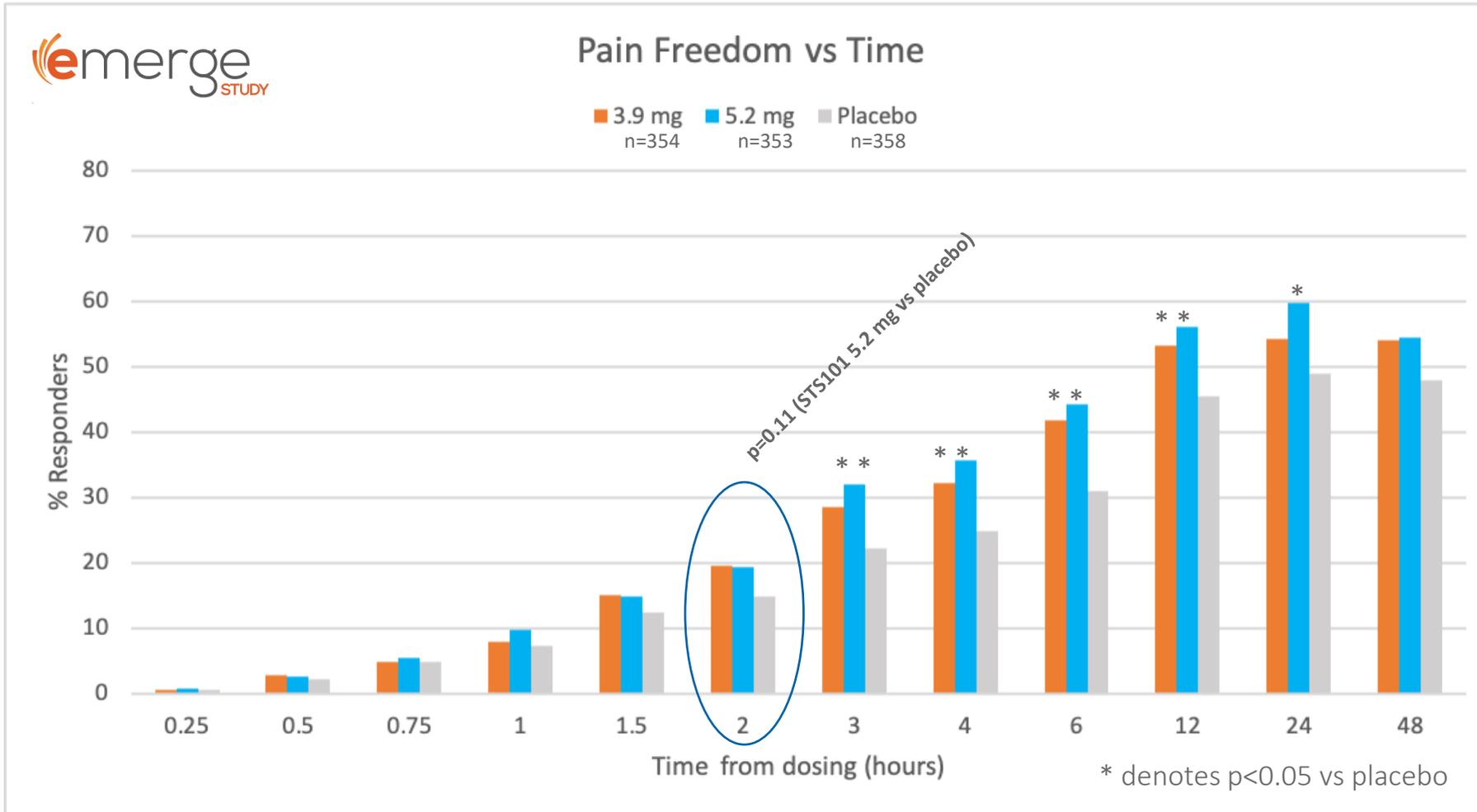
Secondary endpoints

- Sustained pain freedom (at 24h and 48h)
- Rescue medication usage
- Pain relief
- Avoidance of relapse
- Functional and quality-of-life endpoints
- Patient global impression

Powering

- % Free from Pain at 2h: 99% power to detect 10% therapeutic gain with STS101 response rate = 25%
- % Free from MBS at 2h: 95% power to detect 10% therapeutic gain with STS101 response rate = 45%

Ongoing SUMMIT Ph3 efficacy trial incorporates “lessons learned” from previous EMERGE Ph3 trial, which narrowly missed significance on co-primary endpoints (at 2h)



STS101 5.2 mg was numerically superior to Placebo at all time points and to STS101 3.9 mg at 9 of 12 time points

Difference vs Placebo was significant at 3 hours (p<0.05) and all time points thereafter through 24 hours

EMERGE Study Topline Data September 2020; mITT Population

Subjects with missing data at a time point imputed as nonresponders

SUMMIT trial is designed to address reasons for near-miss on co-primary endpoints in EMERGE trial

1. STS101 under-delivery

- Improved subject training /instructions for use and made minor modifications to STS101 delivery device

Mean delivered dose increased (from 73% in EMERGE to >90% in ASCEND) with significantly lower variability*

2. Early eDiary data entry

- EMERGE subjects entered efficacy data for 2h time point at ~1h:47m on average. Adjusted eDiary prompts for data entry to align with nominal time points.

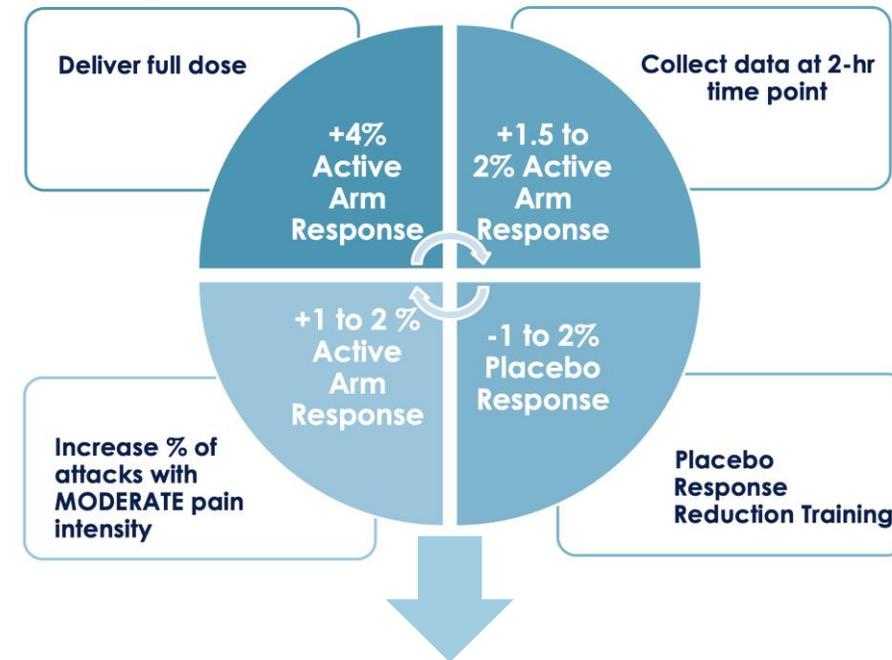
3. High proportions of severe/difficult-to-treat attacks

- Adjusted screening procedures and instruct subjects to treat qualifying migraines as soon as pain intensity reaches "moderate"

4. High placebo response rate given severity of treated attacks

- Placebo Response Reduction training of sites and subjects
- 2-arm study will reduce expectation of receiving active vs EMERGE (3-arms: 2 active + placebo)

Estimated impact of changes on PF at 2h in SUMMIT



Estimated Response Rates (PF@2h)*	
STS101	Placebo
23-28%	12-15%

In addition, larger sample size of ~700/arm increases statistical power

*Values are hypothetical, based on our internal modeling and may not accurately predict clinical trial results

* based on analysis of used STS101 delivery devices sampled from ASCEND trial

Sensitivity analyses underscore that SUMMIT trial has high likelihood of success

	STS101 5.2 mg	Placebo	p-value
EMERGE trial (actual)			
n (mITT population)	353	358	
2h PF (%)	19.3	14.8	0.11
SUMMIT trial			
n (mITT population)	650	650	
2h Pain Free (%) with same effect size as EMERGE	19.3	14.8	0.032
with eDiary entry times adjusted	22.4	16.6	0.008
with only +2 percentage point increase in active arm response rate due to improved delivery	24.4	16.6	0.0004
with % of severe pain attacks reduced from 50% to 40%	25.5	16.7	0.00009
with lower placebo response rate	25.5	15.0	0.000003

← Even with same effect size as in EMERGE, i.e., no improvement, the increase in SUMMIT sample size alone achieves p<0.05

↓ Cumulative increases in effect size resulting from adjustments to trial design, conduct and improved delivery should further reduce p-value

*Values are hypothetical, based on our internal modeling and may not accurately predict clinical trial results

Key STS101 program take-aways

- ✓ **Unique and optimized PK profile should translate to robust efficacy and favorable tolerability**
- ✓ **Anti-migraine activity demonstrated at 2 hours**
 - Numerical superiority observed in EMERGE Ph3 for both Pain Freedom and Freedom-from-MBS endpoints
 - ~30% Pain Freedom at 2 hours to date in open-label ASCEND Ph3, with > 8,000 migraine attacks treated
- ✓ **Low AE rates and favorable safety and tolerability in all clinical trials to date**
 - >1,000 subjects have self-administered STS101 5.2 mg to treat >8,500 migraine attacks
- ✓ **SUMMIT Ph3 efficacy trial on track for Q4 2022 readout**
 - Incorporates key learnings from EMERGE Ph3 trial
- ✓ **Highly-differentiated product profile positions STS101 for commercial success**
 - Easy-to-use
 - Differentiated label with efficacy claims unique to STS101
 - Physicians view as 1st-line branded treatment option for triptan-insufficient responders

	Events and milestones
Q2 2021	✓ Complete Phase 1 safety and pharmacokinetic study with STS101 5.2 mg and two higher dose strengths; select dose strength for Phase 3
Mid-2021	✓ Initiate new STS101 SUMMIT Phase 3 efficacy trial
Q2 2022	✓ Present new STS101 and DHE data at American Academy of Neurology and American Headache Society annual scientific meetings
Q3 2022	Report topline results from ASCEND trial
Q4 2022	Report topline results from SUMMIT trial
Q1 2023	File STS101 NDA

Cash runway into 2H 2023 and through key milestones

Significant long-term barriers to competitive entry / generics

Broad IP estate reflects innovative nature of STS101 and our drug delivery technologies

More than sixty issued and pending U.S. and foreign patents covering formulations, dosages, devices, and methods of treatment

- **United States:** Ten issued U.S. patents with estimated last expiration in December 2039
- **Ex-U.S.:** 13 issued and allowed patents, and we expect issued and pending STS101 patents to have similar lives as in the U.S.

Additional competitive barriers

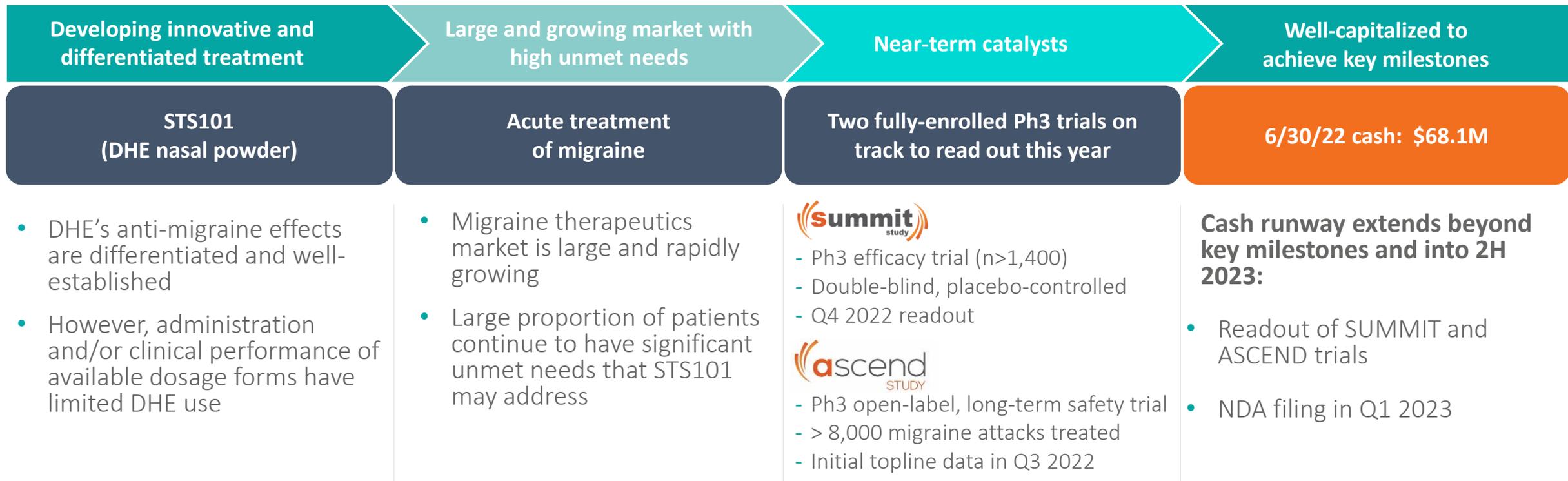
Know-how and trade secrets related to the STS101 formulation, delivery device, and manufacturing processes

- Historically, drug-device combinations are challenging to genericize (e.g., ADVAIR®)
- STS101 is the result of extensive formulation and device R&D over a long period of time

- Cash, cash equivalents and marketable securities as of 6/30/2022: \$68.1M
- Basic shares outstanding as of 6/30/2022: 31.6M (not including 5.3M options outstanding)
- Cash, cash equivalents and marketable securities expected to fund operations into 2H 2023 and through key milestones

Financial results	Q2 2022	YTD 2022
R&D	\$12.5M	\$24.1M
G&A	3.9M	7.9M
Net loss	\$(16.3M)	\$(31.8M)
Accumulated deficit at 6/30/2022		\$(173.5M)

Summary



STS101



- Proprietary, advanced formulation technology and easy-to-use delivery device
- Broad and long-lived IP estate with expected U.S. patent protection through late 2039

- Team with strong track record of execution
- Significant value creation opportunity



Thank you
