UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report (date of earliest event reported): March 23, 2015

TONIX PHARMACEUTICALS HOLDING CORP.

(Exact name of registrant as specified in its charter)

Nevada (State or Other Jurisdiction of Incorporation) 001-36019

(Commission File Number) 26-1434750 (IRS Employer Identification No.)

509 Madison Avenue, Suite 306, New York, New York 10022 (Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (212) 980-9155

Copy of correspondence to:

Marc J. Ross, Esq. James M. Turner, Esq. Sichenzia Ross Friedman Ference LLP 61 Broadway New York, New York 10006 Tel: (212) 930-9700 Fax: (212) 930-9725

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

□ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

□ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

□ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

□ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

ITEM 7.01 Regulation FD Disclosure.

Tonix Pharmaceuticals Holding Corp. (the "Company") intends to utilize an updated investor presentation to conduct meetings with investors, stockholders and analysts and at investor conferences, and which the Company intends to place on its website, which may contain non-public information. A copy of the presentation is filed as Exhibit 99.01.

The information contained in Item 7.01 of this Current Report on Form 8-K, including Exhibit 99.01, is furnished pursuant to, and shall not be deemed to be "filed" for the purposes of, Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section. The information contained in Item 7.01 of this Current Report shall not be incorporated by reference into any registration statement or any other document filed pursuant to the Securities Act of 1933, as amended, except as otherwise expressly stated in such filing. By filing this Current Report on Form 8-K and furnishing the information contained in this Item 7.01, including Exhibit 99.01, the Company makes no admission as to the materiality of any such information that it is furnishing.

ITEM 9.01 Financial Statements and Exhibits.

(d) Exhibits.

99.01 Corporate Presentation by the Company for March 2015*

* Furnished herewith.

SIGNATURE

Pursuant to the requirement of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

TONIX PHARMACEUTICALS HOLDING CORP.

Date: March 23, 2015

By: <u>/s/SETH LEDERMAN</u> Seth Lederman Chief Executive Officer



NASDAQ: TNXP

March 2015

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Certain statements in this presentation regarding strategic plans, expectations and objectives for future operations or results are "forward-looking statements" as defined by the Private Securities Litigation Reform Act of 1995. These statements may be identified by the use of forward-looking words such as "anticipate," "believe," "forecast," "estimate" and "intend," among others. These forward-looking statements are based on Tonix's current expectations and actual results could differ materially. There are a number of factors that could cause actual events to differ materially from those indicated by such forward-looking statements. These factors include, but are not limited to, substantial competition; our possible need for additional financing; uncertainties of patent protection and litigation; uncertainties of government or third party payor reimbursement; limited research and development efforts and dependence upon third parties; and risks related to failure to obtain U.S Food and Drug Administration clearances or approvals and noncompliance with its regulations. As with any pharmaceutical under development, there are significant risks in the development, regulatory approval and commercialization of new products. The forwardlooking statements in this presentation are made as of the date of this presentation, even if subsequently made available by the Company on its website or otherwise. Tonix does not undertake an obligation to update or revise any forward-looking statement, except as required by law. Investors should read the risk factors set forth in the Annual Report on Form 10-K for the year ended December 31, 2014, as filed with the Securities and Exchange Commission (the "SEC") on February 27, 2015 and future periodic reports filed with the SEC on or after the date hereof. All of the Company's forward-looking statements are expressly qualified by all such risk factors and other cautionary statements.



New approaches to treating CNS disorders

First-in-class medicines for common disorders of the central nervous system (CNS)

Innovative treatment paradigms Late stage candidates Large unmet medical needs

Entered 2015 with three clinical development programs

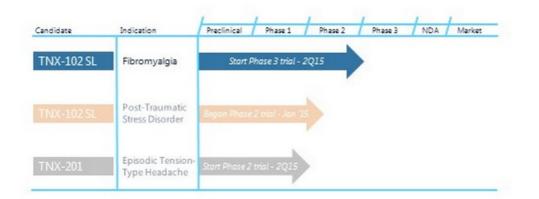


Capitalized to achieve key clinical readouts in all three programs

TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg and TNX-201 ((R)-isometheptene mucate) are Investigational New Drugs and are not approved for any indication.



Pipeline led by TNX-102 SL for fibromyalgia



TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg and TNX-201 ((R)-isometheptene mucate) are Investigational New Drugs and are not approved for any indication.



Fibromyalgia market opportunity

Estimated to affect 5 - 15 million U.S. adults*

Three FDA approved prescription medications:

Class	Product	Company	Approval Year in FM
Membrane Stabilizer	Lyrica [®]	Pfizer	2007
	Cymbalta®	Eli Lilly	2008
SNRI	Savella®	Forest	2009

Tonix is pursuing a different approach:

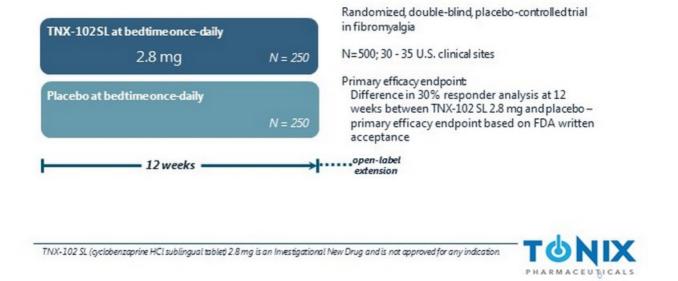
Sleep Quality	TNX-102 SL	Tonix	1H19
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* Lawrence et al, Arthritis Rheum 2008;58:26-35; Vincent et al, Arthritis Care Res 2013;65:786-792. ** Estimates based on information from publicly-available sources



SNRI = Serotonin Norepinephrine Reuptake Inhibitor

"AFFIRM" Phase 3 trial of TNX-102 SL in Fibromyalgia



Sleep quality is a new target for fibromyalgia therapy

Restorative sleep improves pain and other fibromyalgia symptoms >90% of fibromyalgia patients complain of poor sleep quality* Sleep quality improvement is not a feature of approved medications

Phase 2a study with low-dose cyclobenzaprine (CBP) capsule showed proof-of-concept**

TNX-102 SL is a sublingual tablet formulation of CBP

Pharmacokinetic profile well-suited to be dtime administration Tolerability profile well-suited to chronic use

Phase 2b BESTFIT results support Phase 3 program in fibromyalgia

Contribute to evidence of efficacy to support the planned NDA Phase 3 trial to begin in 2Q 2015

* Swick, Ther Adv Musculoskel Dis 2011.3:167-178 ** Moldofsky et al. J Rheum 2011;38:2653-63. TNX-102 SL (syclobenzaprine HCI sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



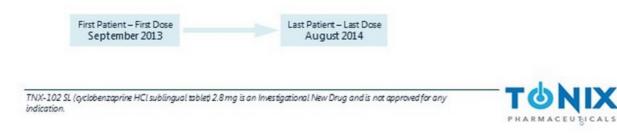
BESTFIT Phase 2b trial in fibromyalgia



Randomized, double-blind, placebo-controlled trial 2010 American College of Rheumatology diagnostic criteria for fibromyalgia 205 participants were randomized 1:1 at 17 U.S. sites One sublingual tablet of TNX-102 SL 2.8 mg or placebo daily at bedtime for twelve weeks

Primary efficacy endpoint

Mean change from baseline in the daily diary pain score during week 12 11-point (0-10) Numerical Rating Scale (NRS) to assess prior 24-hour average pain intensity



TNX-102 SL improved pain in fibromyalgia in the BESTFIT study

Outcome Measure at Week 12	Intent-to-Treat Population ⁺	p value	Method
Daily Pain Diary, NRS	Mean Change**	0.086 0.172	MMRM JTC-MI
Daily Pain Diary, NRS	Proportion Achieving 30% Improvement*	0.033	LR
Clinic NRS 7-day pain recall	Mean Change	0.029	MMRM
FIQ-R Pain Item	Mean Change	0.004	MMRM

NRS - Numeric Rating Scale for pair: FIQ-R = Fibromyalgia Impact Questionnaire-Revised MMRM = Moled-Effect Model Repeated Measure JTC-MI = Jump to Control-Multiple Imputation (FDA-preferred analysis): IR = Logistic Regression

** Declared primary endpoint; was primary and point for FDA approvals of Lyrica and Cymbalta * Declared secondary endpoint; will be the primary endpoint in the upcoming Phase 3 study + N=205 (TNX-102 SLN=103, placebo N=102)

Source: Phase 2b BESTRIT study preliminary data TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



p < 0.05 → achieved statistical significance

TNX-102 SL improved sleep quality in fibromyalgia in the BESTFIT study

Outcome Measure at Week 12	Intent-to-Treat Population	<i>p</i> value	Method
Daily Sleep Quality Diary, NRS	Mean Change*	<0.001	MMRM
PROMIS Sleep Disturbance	T-score Change*	0.005	MMRM
FIQ-R Sleep Quality Item	Mean Change	<0.001	MMRM
PROMIS - Patient-Reported Outcomes Measurement	Information System		
* Declared secondary endpoint		p < 0.05 → achieved statis significance	tical

Source: Phase 2b BESTRIT study preliminary data TNX-102 SL (cyclobenzaprine HCI sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



TNX-102 SL broadly improved fibromyalgia symptoms in the BESTFIT study

Outcome Measure at Week 12	Intent-to-Treat Population	p value	Method
Patient Global Impression of Change	Responder Analysis*	0.025	LR
FIQ-R Total Score	Mean Change*	0.014	MMRM
FIQ-R Symptom Domain	Mean Change	0.004	MMRM
FIQ-R Function Domain	Mean Change	0.060	MMRM
FIQ-R Anxiety Item	Mean Change	0.015	MMRM
FIQ-R Sensitivity Item	Mean Change	0.017	MMRM
FIQ-R Stiffness Item	Mean Change	0.039	MMRM

* Declared secondary endpoint

 $p < 0.05 \rightarrow$ achieved statistical significance

Source: Phase 2b BESTRIT study preliminary data TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



No serious adverse events (SAE) reported with TNX-102 SL

Systemic adverse events reported by at least 3.0% of the total study population	TNX-1025L (N=103)	Placebo (N=101)	Total (N=204)
Somnolence	19	6.9	4.4
Dry Mouth	3.9	4.0	3.9
Back Pain	4.9	3.0	3.9

Most frequent local adverse events were administration site reactions Previously reported in TNX-102 SL Phase 1 studies; no detectable bias on efficacy results

Transient tongue numbness (42%TNX-102 SL vs. 1% placebo) Abnomaltaste (8% TNX-102 SL vs. 0% placebo)

Trial completion rates of 86% with TNX-102SL vs. 83% with placebo

Source: Phase 2b BESTRT study preliminary data TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



Registration program for TNX-102 SL in fibromyalgia

Phase 2b BESTFIT study confirmed activity and tolerability

Statistically-significant improvements across key fibromyalgia symptoms were observed Systemic tolerability similar to placebo 2.8 mg daily dose confirmed for future development

Phase 3 AFFIRM study to commence in 2Q 2015

Randomized, double-blind, parallel-group, placebo-controlled N=500; 30-35 U.S. sites; 1:1 randomization 12-week study similar to the BESTFIT design One sublingual tablet of TNX-102 SL 2.8 mg or placebo daily at bedtime

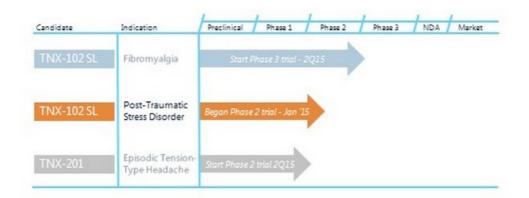
30% responder analysis at 12 weeks* - primary efficacy endpoint based on FDA written acceptance

* TNX-102 SL demonstrated p=0.03 in BESTRIT 30% pain responder analysis (pre-specified secondary endpoint)

TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



Phase 2 trial of TNX-102 SL for PTSD is recruiting



TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg and TNX-201 ((R)-isometheptene mucate) are Investigational New Drugs and are not approved for any indication.



PTSD: A significant and growing public health problem

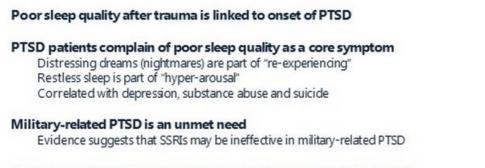
Post-traumatic stress disorder is a chronic, debilitating condition

Associated with suicide and unpredictable, violent behaviors

Patients desperate despite two FDA approved drugs; no new treatment in > 10 years Among 8.5 million U.S. patients, approximately half are receiving medical treatment* FDA approved prescription medications: Class Approval Year in PTSD Product Company Paxil® 2001 Glaxo SSRI Zoloft® Pfizer 1999 Tonix is pursuing a different approach: Sleep Quality TNX-102 SL Tonix 2H19E * Kessler et al, Arch Gen Psych 2005;62:617-627; Wang et al., Arch Gen Psych 2005;62:629-640. SSRI = Selective Serotonin Reuptake Inhibitor

High incidence among soldiers and veterans, but experiencing any trauma can lead to PTSD

Sleep quality is a new target for PTSD treatment



Response of PTSD in men to SSRIs has not been adequately studied

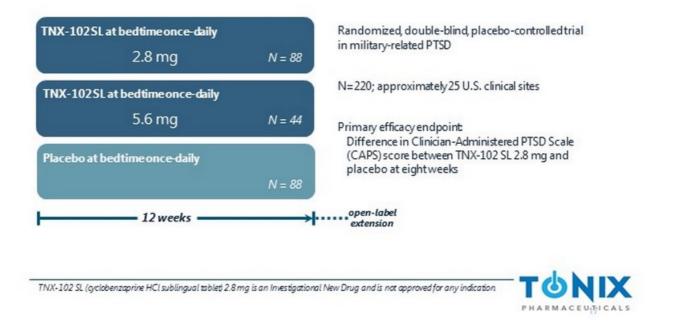
TNX-102 SL targets mechanisms associated with treating disturbed sleep in PTSD

TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



"AtEase" Phase 2 trial of TNX-102 SL in PTSD

www.ateasestudy.com



PTSD program with TNX-102 SL

Fibromyalgia program informs development of TNX-102 SL in PTSD Safety data from fibromyalgia studies are potentially supportive for PTSD program

Efficacy data support potential for activity in PTSD Improvements in several outcomes analyses of BESTFIT that relate to PTSD core symptoms: sleep; FIQ-R sensitivity; and FIQ-R anxiety

2.8 mg dose supported by BESTFIT study results

Phase 2 study of TNX-102 SL in military-related PTSD ("AtEase") is enrolling

TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg is an Investigational New Drug and is not approved for any indication



TNX-201 in development for episodic tension-type headache

Candidate	Indication	Preclinical	Phase 1	Phase 2	Phase 3	NDA	Market
TNX-102 SL	Fibromyalgia	Start P	hase3 trial	2Q15			
	Post-Traumatic Stress Disorder	Began Phase		5			
TNX-201	Episodic Tension- Type Headache	Start Phase 2	trial - 2Q15	•			

TNX-102 SL (cyclobenzaprine HCl sublingual tablet) 2.8 mg and TNX-201 ((R)-isometheptene mucate) are Investigational New Drugs and are not approved for any indication.



75 million adults in the U.S. experience frequent episodic tension-type headaches*

Constant band of pressure on the back/sides of head; "squeezed in a vice" feeling "Frequent" = one to 15 headaches per month over a three-month period Approximately 60% receive treatment**

All of the FDA approved prescription medications contain barbiturates

Over-the-counter medications are inadequate for many No new medications introduced for >40 years

Class	Product	Company	Regulatory Status	Approval Year in ETTH
	Fiorinal®	Actavis	Approved NDA	1976
Barbiturate	Fioricet ²	Actavis	Approved NDA	1992
Barbiturate + Opiate	Fiorinal with Codeine®	Actavis	Approved NDA	1990

* Schwartz et al., JAMA 1998;279:381-383; Onowdhuny: Ann Ind Acad Neurol 2012:15:83-88; company analysis of public literature.
** Scher et al., Cephalalgia 2010;30:321-328; company analysis of public literature.



TNX-201 in clinical development for ETTH

TNX-201 is (R)-isometheptene mucate

Tonix is developing TNX-201 for ETTH Phase 2 study to begin in 2Q 2015

Racemic isometheptene mucate is a mixture of (R) and (S) isomers Had been widely prescribed for many decades in the U.S. as: a single-agent medicine (pre-1962) a component of combination drug products Midrin[®] – NDA withdrawn Prodrin[®] – marketed under "unapproved drug category"

No product containing isometheptene mucate is currently FDA approved for any indication

TNX-201 ((R)-isometheptene mucate) is an Investigational New Drug and is not approved for any indication.



Phase 2 trial of TNX-201 in ETTH to begin in 2Q15

TNX-201		
	140 mg	N = 100
Placebo		
		N = 100

Randomized, double-blind, placebo-controlled trial in episodic tension-type headache

N=200; approximately 10 U.S. clinical sites

Primary efficacy endpoint:

Number of subjects who report "pain free" at two hours following one dose of study medication (upon first ETTH episode experienced)

To report top-line results in 4Q 2015

TNX-201 ((R)-isometheptene mucate) is an Investigational New Drug and is not approved for any indication.

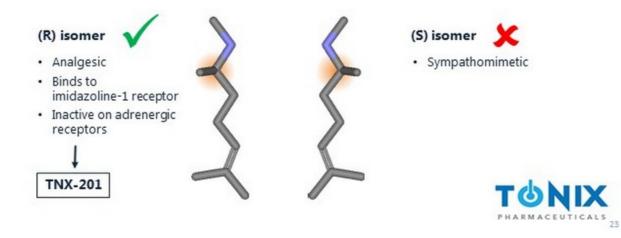


Isometheptene (IMH) isomers have distinct pharmacological activities

TNX-201 is a single isomer of IMH

The (R) and (S) isomers of IMH have different pharmacologies

Previously marketed IMH drugs were a mixture of two mirror-image isomers (racemic IMH)



Phase 1 study in healthy volunteers

Single ascending dose study (N=45) – three cohorts of 15 subjects Randomized to TNX-201, racemic IMH, or placebo (3:1:1 ratio, resp.)

	TNX-201 35 mg (N=9)	TNX-201 70 mg (N=9)	TNX-201 140 mg (N=9)	Racemic IMH 70 mg (N=9)	Placebo (N=9)
Subjects reporting ≥1 adverse event, %	22	11	0	11	33

Adverse events reported by TNX-201 subjects all rated as "mild" and most are not study drug-related No subject discontinued due to treatment-emergent adverse events Dose-related increase in TNX-201 plasma levels (C_{max}, AUC) No evidence of isomer interconversion

Results support the advancement of TNX-201 into Phase 2 development

TNX-201 ((R)-isometheptene mucate) is an Investigational New Drug and is not approved for any indication.



The imidazoline-1 receptor (I_1 -R) is a novel target for the treatment of pain

Characteristics

 $\label{eq:constraint} \begin{array}{l} Transmembrane\ receptor\\ Distinct\ from\ \alpha_2 AR\ and\ MAO\ receptor\ subtypes\\ No\ sequence\ similarity\ to\ GPCRs\ or\ ATP-sensitive\ K+\ channels\\ Shares\ similarities\ to\ ryanodine\ and\ cytokine\ receptors\\ \end{array}$

Mouse studies

 $I_1\mbox{-}R$ null mice show ${\mbox{\bf no}}\ {\mbox{difference}}$ in systolic blood pressure or heart rate compared to wild type

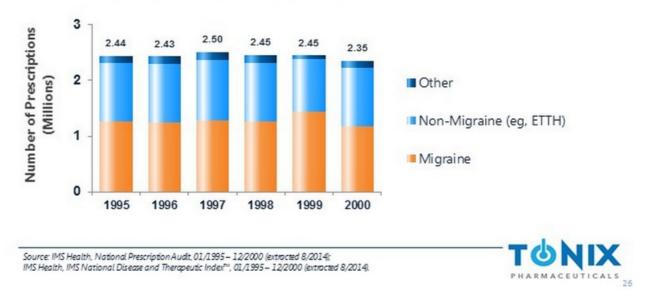
 $\rm I_1\text{-}R$ null mice show a reduction in pain threshold compared to wild type in both the hot plate and tail flick tests

Piletz JE et al, DNA Cell Biol 2000; 19319-329. Zhang L et al, CNS Neurosa Ther 2013;19:978-981.



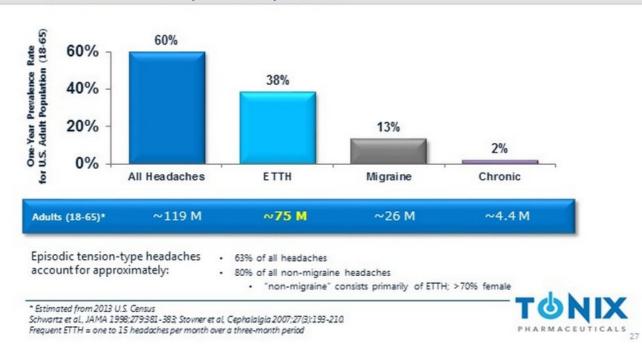
Racemic isometheptene combination (RIC) prescriptions had been commonly written

Number of RIC prescriptions peaked at 2.5 million



Usage of RIC Prescriptions for All Diagnoses

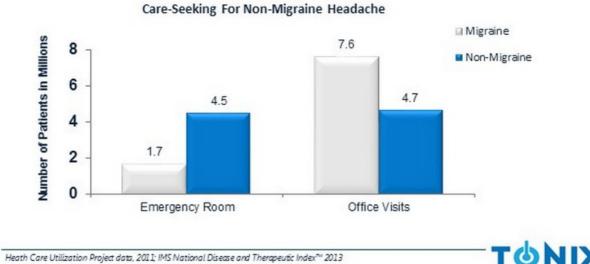
ETTH is the most common type of headache



30% of U.S. adults experience frequent ETTH

Patients with ETTH seek medical attention

Non-migraine headaches lead to 9.2 million emergency room or office visits each year



х ICALS 28

Intellectual property

All IP wholly-owned by Tonix without obligations to others

TNX-102 SL	
Fibromyalgia, PTSD	

Composition-of-matter (eutectic)

Patentsfiled Protection expected to 2034

Pharmacokinetics (PK) Patentsfiled Protection expected to 2033

Method-of-use

Fibromyalgia: patents issued, 3Q 2020 expiry PTSD: patents filed



Composition-of-matter (isomer) Patentsfiled Protection expected to 2033

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NASDAQ: TNXP

Cash reported at December 31, 2014	\$ 38.2 million
Net proceeds from common stock offering in 1Q15	\$ 29.0 million

Shares outstanding (Feb 27, 2015)

16.1 million



Management team



Milestones - recent and upcoming

TNX-102SL - Fibromyalgia

- 3 September 2014 Reported top line results from Phase 2b BESTFIT study
- January 2015 - Reported FDA acceptance of 30% responder analysis as Phase 3 primary endpoint
- □ 2Q 2015 □ 2H 2016 - Begin Phase 3 AFFIRM study
 - Report top-line results from AFFIRM study

TNX-102SL - Post-Traumatic Stress Disorder

- 2 December 2014 Began recruiting Phase 2 At Ease study in military-related PTSD
 - Provide update on enrollment and timing of results from AtEase
- □ 1H 2015 □ 1H 2016 Report top-line results from AtEase study

TNX-201-Episodic Tension-Type Headache

- December 2014 Completed Phase 1 clinical pharmacology study
- □ 2Q 2015 - Begin Phase 2 study in ETTH
- □ 4Q 2015 - Report top-line results from Phase 2 study

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NASDAQ: TNXP

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