Issuer Free Writing Prospectus
Filed Pursuant to Rule 433
Registration No. 333-232195

Investor Presentation

TONIX PHARMACEUTICALS

July 2019

Cautionary Note on Forward-Looking Statements

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 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 forward-looking statements in this presentation are made as of the date of this presentation, even if subsequently made available by Tonix 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, 2018, as filed with the Securities and Exchange Commission (the "SEC") on March 18, 2019, and periodic reports and current reports filed with the SEC on or after the date thereof, as well as the Registration Statement on Form S-1, as filed with the SEC on July 1, 2019. All of Tonix's forward-looking statements are expressly qualified by all such risk factors and other cautionary statements.

Free Writing Prospectus Statement

This presentation highlights basic information about us and the offering to which this communication relates. Because it is a summary, it does not contain all of the information that you should consider before investing in our securities.

We have filed a registration statement (including a prospectus, which currently is in preliminary form) with the U.S. Securities and Exchange Commission ("SEC") for the offering to which this presentation relates. The registration has not yet become effective. Before you invest, you should read the preliminary registration statement (including the risk factors described therein) and other documents we have filed with the SEC for more complete information about us and this offering. You may access these documents for free by visiting EDGAR on the SEC Web site at www.sec.gov.

The preliminary prospectus, dated July 1, 2019, is available on the SEC Web site at https://www.sec.gov/edgar/searchedgar/companysearch.html.

Alternatively, we or any underwriter participating in the offering will arrange to send you the preliminary prospectus and, when available, the final prospectus and/or any supplements thereto if you contact Aegis Capital Corp., 810 Seventh Avenue, 18th Floor, New York, NY 10019.

This presentation shall not constitute an offer to sell, or the solicitation of an offer to buy, nor will 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 the registration or qualification under the securities laws of such state or jurisdiction. The offering will only be made by means of a prospectus pursuant to a registration statement that is filed with the SEC after such registration statement becomes effective.

Offering Summary

Issuer:	Tonix Pharmaceuticals Holding Corp.
Ticker / Exchange:	TNXP / Nasdaq Global Market
Offering Size:	Approximately $10,400,000 (excluding 15% Over-Allotment)
Securities Issued:	Common Stock
Use of Proceeds:	• Fund Phase 3 development for lead product candidate, TNX-102 SL • Advance the development of a recently in-licensed product candidate, TNX-1300 • Working capital and other general corporate purposes
Sole Book-Runner:	Aegis Capital Corp.

Who we are:

- A clinical stage biopharmaceutical company dedicated to developing innovative treatments for patients and making meaningful contributions to society
- Focusing on small molecules and biologics to treat psychiatric, pain and addiction conditions as well as potential medical counter-measures to improve biodefense

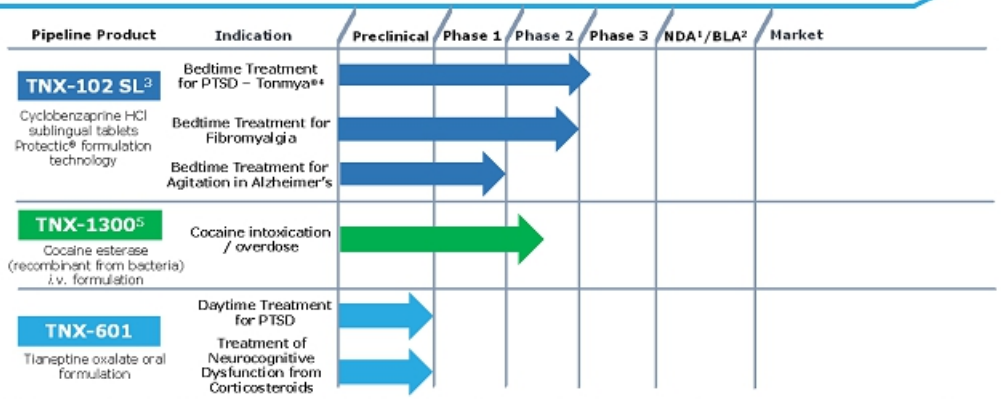
What we do:

- Target therapeutic areas with high need for improvement
  - Conditions with no, or inadequate treatments
  - Significant patient segments not well served by existing therapies
- Develop innovative treatment options
  - Scientifically unique and innovative
  - Supported by strong scientific rationale
  - Supported by preliminary clinical evidence and published literature
  - Utilize proven regulatory pathway and established clinical endpoint
  - Built on a foundation of proprietary intellectual property

CNS Candidates in Development

Psychiatry, Pain and Addiction

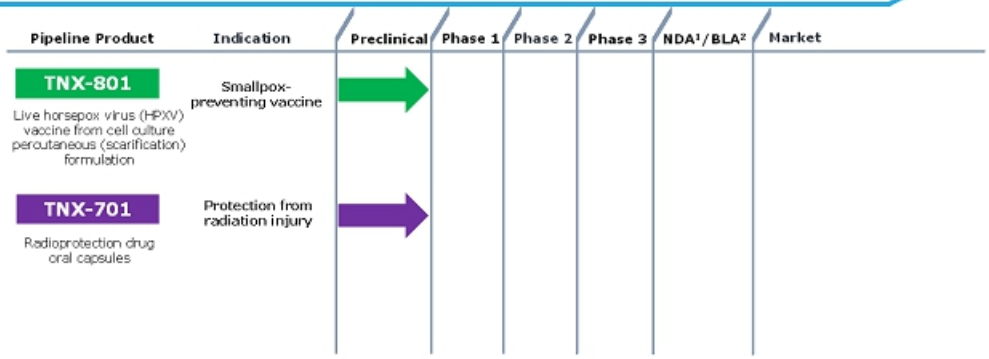
TNX-102 SL and TNX-601 owned outright with no royalties due



[1] NDA–New Drug Application; [2]BLA –Biologic Licensing Application; [3]TNX-102 SL (cyclobenzaprine HCl sublingual tablets) is an investigational new drug and has not been approved for any indication; [4]Tonmya has been conditionally accepted by the U.S. FDA as the proposed trade name for TNX-102 SL for the treatment of PTSD. [5]TNX-1300 (T172R/G173Q double-mutant cocaine esterase 200 mg, i.v. solution) is an investigational new biologic and has not been approved for any indication

Biodefense Candidates in Development

Biodefense programs owned outright with no royalties due



¹NDA- New Drug Application; ²BLA –Biologic Licensing Application

Management Team

Seth Lederman, MD
President & CEO

TARGENT Fusilev vela

Gregory Sullivan, MD
Chief Medical Officer

Columbia University Department of Psychiatry | New York State Psychiatric Institute

Bradley Saenger, CPA
Chief Financial Officer

Shire VERTEX Steward pwc

Jessica Morris
Chief Operating Officer

Deutsche Bank svb American Capital

TNX-102 SL Intellectual Property – U.S. Protection expected until 2034

Composition of matter (eutectic): **Protection expected to 2034/2035**	•United States Patent and Trademark Office (USPTO) issued U.S. Patent No. 9636408 in May 2017, U.S. Patent No. 9956188 in May 2018, and U.S. Patent No. 10117936 in Nov 2018 •China National Intellectual Property Administration issued Chinese Patent No. ZL 201480024011.1 in April 2019 •Indonesian Patent Office issued Indonesian Patent No. IDP000055516 in January 2019 •Saudi Arabian Patent Office issued Saudi Patent No. 6088 in September 2018 •Japanese Patent Office (JPO) issued Japanese Patent No. 6310542 in March 2018 •New Zealand Intellectual Property Office (NZIPO) issued New Zealand Patent No. 631152 in August 2017 •35 patent applications pending (5 being allowed in U.S, Australia, Europe, Taiwan, South Africa)
Composition of matter (sublingual): **Protection expected to 2033**	• NZIPO issued New Zealand Patent No. 631144 in March 2017 and Patent No. 726488 in January 2019 • Taiwanese Intellectual Property Office issued Taiwanese Patent No. I590820 in July 2017 and Patent No. I642429 in December 2018 • Australian Patent Office issued Australian Patent No. 2013274003 in October 2018 • JPO issued Japanese Patent No. 6259452 in Dec 2017 • 21 patent applications pending
Method of use (PTSD) for cyclobenzaprine: **Protection expected to 2030**	• Hong Kong Patent Office issued Hong Kong Patent No. HK1176235 in September 2018 • USPTO issued U.S. Patent 9918948 in March 2018 • European Patent Office issued European Patent No. 2501234B1 in Sept 2017 (validated in 37 countries). Opposition filed in June 2018 • 1 patent application pending

Prevalence of PTSD Among Civilians and Veterans

4.7%
Adult population[1]

19-31%
Vietnam veterans[2]

>19%
Iraq/Afghanistan[3]

12 million American adults annually[1]

Women more likely to develop than men[1]

[1] Goldstein et al., 2016 (adjusted for 2019); [2]Norris, PTSD Res Quar. 2013;
[3]Analysis of VA Health Care Utilization among Operation Enduring Freedom, Operation Iraqi Freedom, and Operation New Dawn Veterans, from 1st Qtr FY 2002 through 2nd Qtr FY 2015, Washington, DC; Among 1.9M separated OEF/OIF/OND veterans, 1.2M have obtained VA healthcare; 685k evaluated by VA with possible mental disorder, and 379k diagnosed with PTSD.

Unmet Need for Effective and Safe Therapies for Treatment of PTSD

No FDA-approved products for PTSD since Pfizer's Zoloft® (sertraline) and GSK's Paxil® (paroxetine) circa 2000

- Neither has shown efficacy in military-related PTSD
- Male PTSD patients often unresponsive or intolerant of current treatments
- Side effects relating to sexual dysfunction, sleep disruption and weight gain are commonly reported

PTSD is signature wound of last 25 years of war

- Affects servicemember health and performance, force readiness, retention
- Believed to be the underlying cause of suicide in many cases

Tonmya: a Potential Bedtime Treatment for PTSD

First investigational new drug to show treatment effect in military-related PTSD in two potential pivotal efficacy studies

- Phase 2 study (P201/AtEase) showed Tonmya 5.6 mg had a signal of treatment effect at Week 12 as measured by CAPS-5[1]
- Phase 3 study (P301/HONOR) provided evidence of effectiveness as early as 4 weeks after treatment but diminished over time due to high placebo response
  - Retrospective analysis showed persistent effectiveness at Week 12 in subgroup with Time Since Trauma =9 years from screening
- Both studies can be used potentially as supportive evidence of efficacy and safety for Tonmya NDA submission
- No serious or unexpected adverse events related to Tonmya were reported

FDA feedback and acceptance of new Phase 3 study (P302/RECOVERY) received in November 2018[2]

[1] CAPS-5 = Clinician-Administered PTSD Scale for DSM-5
[2] FDA Meeting Minutes, November 26, 2018

Potential Therapeutic Advantages of Tonmya

Tonmya is believed to treat PTSD by improving sleep *quality*

- The brain naturally processes memories during sleep
- PTSD sufferers' emotionally charged memories disturb sleep and disrupt the natural processing of memories during sleep
- Tonmya is believed to normalize memory processing and facilitate extinction consolidation (breaking the link between "triggers" and PTSD symptoms)

Tonmya is *NEITHER* a benzodiazepine nor a narcotic

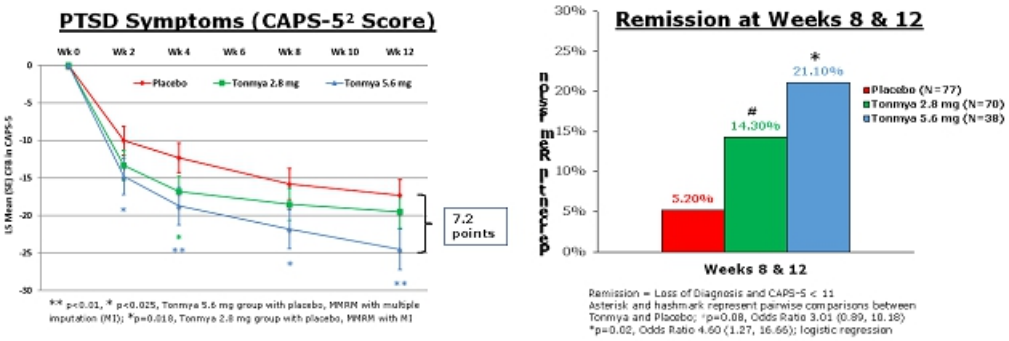
- The active ingredient of Tonmya, cyclobenzaprine, does **NOT** interact with the same receptors as traditional hypnotic sleep drugs associated with retrograde amnesia; is **NOT** an opiate

Tonmya is non-addictive

- Cyclobenzaprine is the active ingredient of an orally ingested immediate release tablet (Flexeril®), approved 40 years ago
- Flexeril's current labeling indicates no abuse and dependence concern at higher doses than Tonmya (15-30 mg/day v. 5.6 mg/day); NDA can be filed without drug abuse and dependency assessment studies

Once-daily sublingual dose taken at bedtime enhances patient adherence

Tonmya Phase 2 Dose-Effect in Military-Related PTSD[1]

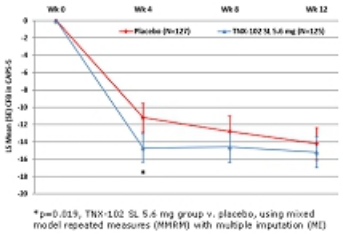


[1] Completed Phase 2 P201/AtEase study: Retrospective analysis of Tonmya 5.6 mg on CAPS-5 =33 (high-moderate) subgroup. Primary analysis of P201/AtEase, based on Tonmya 2.8 mg in participants with entry CAPS-5 =29 (moderate PTSD severity), was not statistically significant.
[2] CAPS-5 = Clinician administered PTSD Scale for DSM-5

Primary Outcome (CAPS-5) in Phase 3 (mITT) and ≥9 Years Time Since Trauma Subgroups

Phase 3 P301/HONOR Study[1]

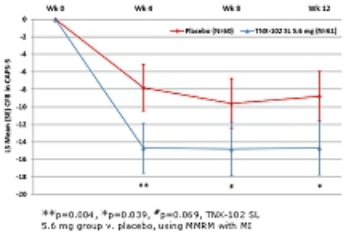
Modified intent to treat (mITT) population



*p=0.019, TNX-102 SL 5.6 mg group v. placebo, using mixed model repeated measures (MMRM) with multiple imputation (MI)

~50% mITT Population

Time Since Trauma (TST) =9 yrs



**p=0.004, *p=0.039, #p=0.069, TNX-102 SL 5.6 mg group v. placebo, using MMRM with MI

[1]Phase 3 P301/HONOR study: stopped in July 2018. Separation on primary endpoint did not cross pre-specified study continuation threshold at Week 12 in the interim analysis at ~50% randomization; no safety or tolerability issues discovered.

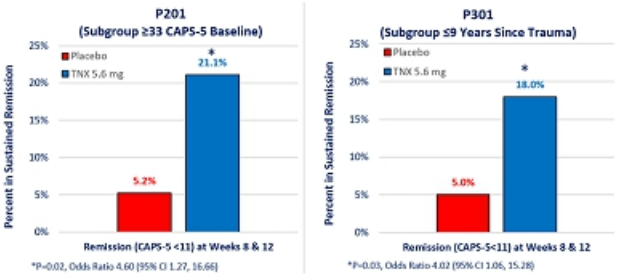
Sustained Remission in Phase 2 and Phase 3 Studies:
Retrospective Analyses of P201 Entry CAPS-5 ≥33 and P301 ≥9 Years Since Trauma Subgroups

Remission is a clinical state that is essentially asymptomatic

In order to confirm remission:

- Determined rates of participants who met remission status at *both* Week 8 and Week 12

Rate of remission in ≥9 years since trauma group in P301 is similar to baseline CAPS-5 = 33 group in P201[1]



[1] Majority of P201 participants were ≥ 9 years since trauma and ~80% of P201 participants and all of P301 participants were ≥ 33 CAPS-5 at baseline

Adverse Events (AEs) in P201/AtEase and P301/HONOR Studies

Category of Adverse Reaction Preferred Term	P201 Placebo (N=94)	P201 TNX 2.8 mg (N=93)	P201 TNX 5.6 mg (N=50)	P301 Placebo (N=134)	P301 TNX 5.6 mg (N=134)
Systemic Adverse Events*[1]					
Somnolence	6.4%	11.8%	16.0%	9.0%	15.7%
Dry mouth	10.6%	4.3%	16.0%		
Headache	4.3%	5.4%	12.0%		
Insomnia	8.5%	7.5%	6.0%		
Sedation	1.1%	2.2%	12.0%		
Local Administration Site Reactions*[2]					
Hypoaesthesia oral	2.1%	38.7%	36.0%	1.5%	37.3%
Paraesthesia oral	3.2%	16.1%	4.0%	0.7%	9.7%
Glossodynia	1.1%	3.2%	6.0%		
Product Taste Abnormal				3.0%	11.9%

*only adverse events (AEs) are listed that are at a rate of = 5% in any TNX-treated group
*no values in a row for either study means the AE in the active group(s) in that study was at a rate of <5%

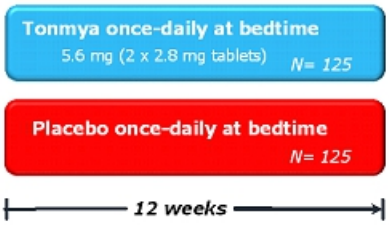
No serious or unexpected AEs in P201 or P301 related to Tonmya

- Systemic AEs comparable between studies and also consistent with those described in approved oral cyclobenzaprine product labeling
- Severity and incidence of oral hypoesthesia (oral numbness) are not dose related and similar in both studies

New Phase 3 P302/RECOVERY Study – Initiated 1Q 2019

General study characteristics:

- Randomized, double-blind, placebo-controlled study with baseline CAPS-5[1] = 33 in approximately 30 U.S. sites
- Enrollment restricted to study participants with PTSD who experienced an index trauma = 9 years from the date of screening
- Both civilian and military-related PTSD to be included



Primary endpoint:

- CAPS-5[1] mean change from baseline at Week 4 (Tonmya 5.6 mg vs. placebo)

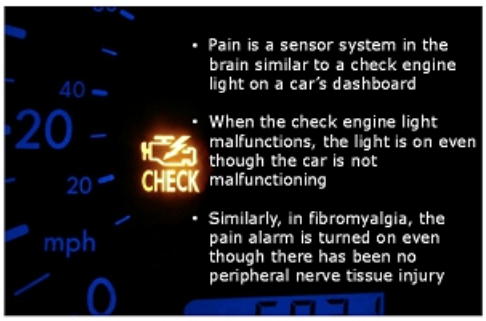
Key Secondary endpoints include:

- CAPS-5 mean change from baseline at Week 12 (Tonmya 5.6 mg vs. placebo)
- Change from baseline Clinical Global Impression – Severity scale
- Change from baseline Sheehan Disability Scale total score

Potential pivotal efficacy study to support NDA approval

[1]CAPS-5 = Clinician-Administered PTSD Scale for DSM-5

Fibromyalgia is a Chronic, Debilitating Disorder that Imposes a Significant Societal and Economic Burden



Volkswagen Check Engine [Photograph]. (2011, October 14). Wikipedia

- **Fibromyalgia is considered a neurobiological disorder characterized by[1]: chronic widespread pain, non restorative sleep, fatigue, diminished cognition**
  - Believed to result from inappropriate pain signaling in central nervous system in the absence of peripheral injury[1]
- **Causes significant impairment in all areas of life[2]**
  - Lower levels of health-related quality of life – reduced daily functioning
  - Interference with work (loss of productivity, disability)
- **Inflicts substantial strain on the healthcare system**
  - Average patient has 20 physician office visits per year[3]

[1]Phillips K & Clauw DJ, Best Pract Res Clin Rheumatol 2011; 25: 141.
[2]Schaefer et al., Pain Pract, 2015.
[3]Robinson et al, Pain Medicine 2013; 14: 1400.

Large Need for New Fibromyalgia Therapies that Provide Broad Symptom Improvement with Better Tolerability

- **Currently-approved medications may have side effects that limit long-term use[1]**
  - Many patients skip doses or discontinue altogether within months of treatment initiation
- **Medication-related side effects may be similar to fibromyalgia symptoms**
- **High rates of discontinuation, switching and augmentation**
  - Attempt to treat multiple symptoms and/or avoid intolerable side effects
  - Average of 2-3 medications used simultaneously[2]
  - The typical patient has tried six different medications[3]
- **Substantial off-label use of narcotic painkillers and prescription sleep aids[3]**
- **TNX-102 SL is a non-opioid, centrally-acting analgesic that may provide a new therapeutic option for fibromyalgia patients**

[1] Nuesch et al, Ann Rheum Dis 2013;72:955-62.
[2] Robinson RL, et al, Pain Medicine 2012;13:1366.
[3] Patient Trends: Fibromyalgia", Decision Resources, 2011.

TNX-1300* for the Treatment of Cocaine Intoxication

Recombinant protein that degrades cocaine in the bloodstream[1]

- Double-mutant cocaine esterase

Phase 2 study completed by Rickett Benckiser (TNX-1300 was formerly RBP-8000)[2]

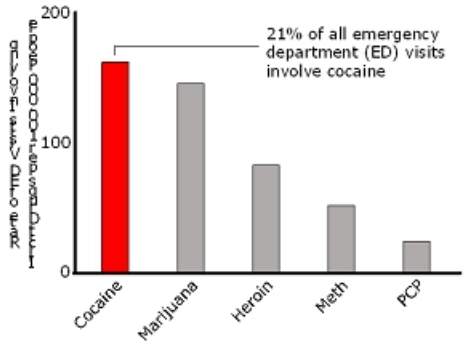
- Volunteer cocaine abusers received cocaine 50 mg *i.v.* infusion over 10 minutes
- TNX-1300 given one minute after completion of cocaine infusion
  - Rapidly reversed the physiologic effects of cocaine; cocaine plasma exposures dropped by 90% within two minutes
  - Well tolerated with the most frequently reported adverse events being gastrointestinal disorders (including dry mouth, nausea); nervous systems disorders (including headache, dizziness) and skin and subcutaneous tissue disorders (including hyperhidrosis, dermatitis)

**TNX-1300 (T172R/G173Q double-mutant cocaine esterase 200 mg, i.v. solution) is an investigational new biologic and has not been approved for any indication.*

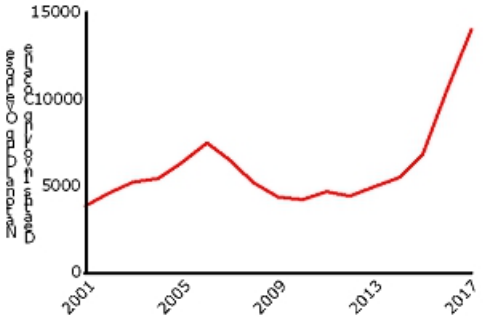
[1] Gao D et al, Mol Pharmacol. 2009. 75(2):318-23.
[2] Nasser AF et al, J Addict Dis. 2014;33(4):289-302.

Cocaine Intoxication Is a Growing Problem in the U.S.

Cocaine is involved in more emergency department (ED) visits than any other illicit substance[1]



Drug overdose deaths involving cocaine have increased dramatically in recent years[2]

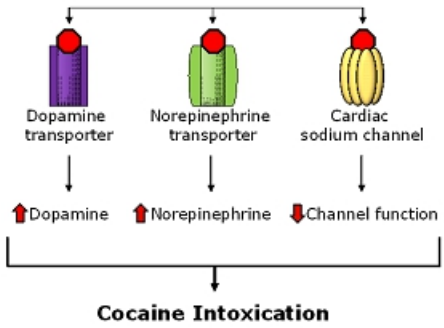


1. CBHSQ. DAWN 2011. Rockville, MD: SAMHSA; 2013
2. NIDA. Overdose death rates. https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates.

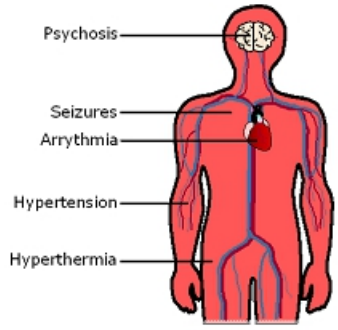
Note: Figures are for illustrative purposes

Cocaine Intoxication Is the Result of Cocaine's Activity at Multiple Targets

In addition to dopamine transporters, cocaine also blocks other targets[1]



The effects of cocaine intoxication include[1]:

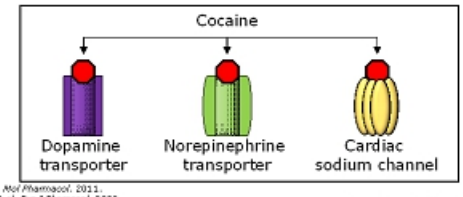


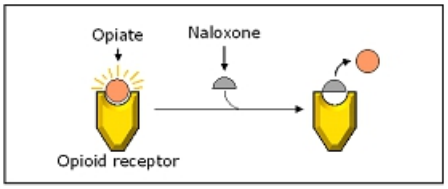
1. Brim et al. *Mol Pharmacol.* 2011.

Pharmacotherapies for Cocaine Intoxication Have Not Been Effective

Treatments for opiates not effective for cocaine:

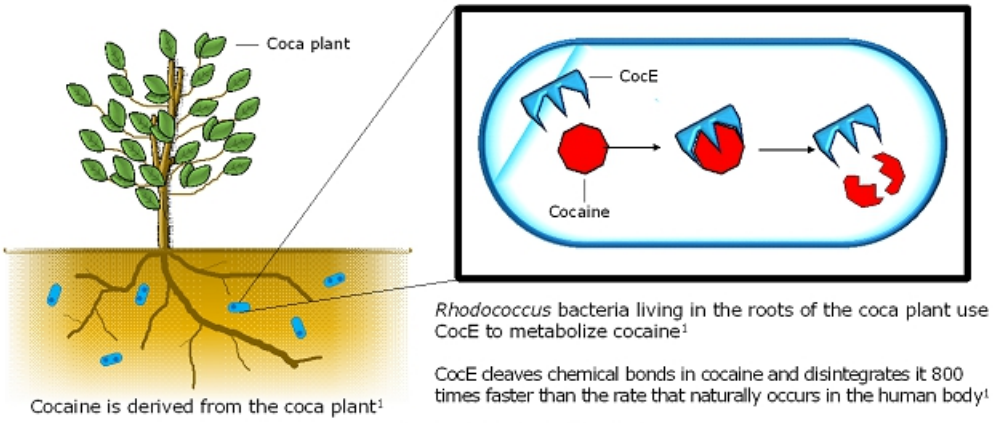
	Cocaine	Opiates
MOA of Toxicity	Complex; mediated by multiple targets with distinct biological functions[1]	Simple; mediated by opioid receptors[2]
Pharmacology	Antagonist[1]	Agonists[2]
Pharmacotherapy	**No FDA-approved medication exists**[1]	Naloxone[2]





1. Brim et al. *Mol Pharmacol*. 2011.
2. Melichar et al. *Eur J Pharmacol*. 2003.
3. Narasimhan et al. *Future Medicinal Chemistry*. 2012.

TNX-1300 (Cocaine Esterase or CocE) Is a Fast-acting Cocaine Antidote



Cocaine is derived from the coca plant[1]

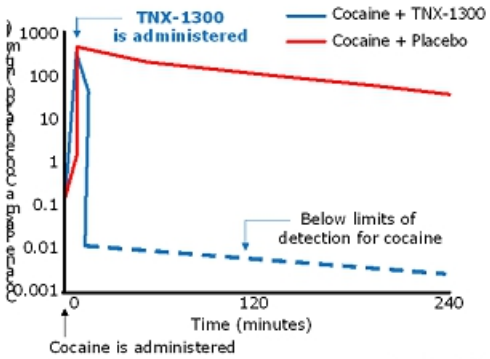
Rhodococcus bacteria living in the roots of the coca plant use CocE to metabolize cocaine[1]

CocE cleaves chemical bonds in cocaine and disintegrates it 800 times faster than the rate that naturally occurs in the human body[1]

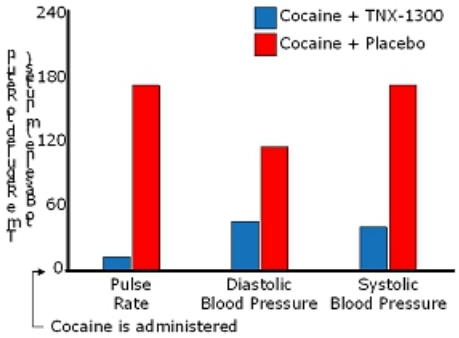
1. Narasimhan D et al. *Future Med Chem*. 2012.

TNX-1300 (CocE) Accelerates Recovery From Cocaine Intoxication in Humans

TNX-1300 cleaves cocaine in humans and removes it from the blood circulation[1] (N=29)



TNX-1300 accelerates recovery from cocaine intoxication without inducing serious side effects[1]



1. Nasser A et al. *J Addict Dis*. 2014.

Note: Figures are for illustrative purposes

TNX-601 (Tianeptine Oxalate): A Potential Clinical Candidate for PTSD

Pre-IND Candidate

Targeting a Condition with Significant Unmet Need

Targeted as a 1st line monotherapy for PTSD: oral formulation for daytime dosing

- ✓ **Leverages expertise in PTSD (clinical and regulatory experience, market analysis, etc.)**
- ✓ **Mechanism of Action (MOA) is different from TNX-102 SL**

- Tianeptine sodium (amorphous), first marketed for depression in France in 1989, is approved as an antidepressant in the EU, Russia, Asia and Latin America; established post-marketing experience
- Identified new oxalate salt with improved pharmaceutical properties ideal for reformulation
- Preliminary human pharmacokinetic and safety data (non-IND study) from selected formulation expected in second half 2019

Patents and patent applications directed to tianeptine

- Issued patent directed to methods of treating cognitive impairment associated with corticosteroid treatment
- Patent application directed to oxalate salt

Clinical evidence for PTSD

- Several studies have shown tianeptine to be active in the treatment of PTSD[1–4]

[1] Franciškovic T, et al. Psychiatr Danub. 2011 Sep;23(3):257-63. PMID: 21963693
[2] Rumyantseva GM and, Stepanov AL. Neurosci Behav Physiol. 2008 Jan;38(1):55-61. PMID: 18097761
[3] Aleksandrovskii IA, et al. Zh Nevrol Psikhiatr Im S S Korsakova. 2005;105(11):24-9. PMID: 16329631 [Russian]
[4] Onder E, et al. Eur Psychiatry. 2006 (3):174-9. PMID: 15964747

TNX-801 (Synthesized Live Horsepox Virus): A Smallpox-Preventing Vaccine Candidate

Pre-IND Stage

Potential improvement over current biodefense tools against smallpox

- Leverages Tonix's government affairs effort
- Collaboration with Professor David Evans and Dr. Ryan Noyce at University of Alberta
- Demonstrated protective vaccine activity in mice
- Patent application on novel vaccine submitted

Regulatory strategy

- We intend to meet with FDA to discuss the most efficient and appropriate investigational plan to support approval, either:
  - Application of the "Animal Rule", or
  - Conducting an active comparator study using ACAM2000
- Good Manufacturing Practice (GMP) viral production process in development

Targeting a Potential Public Health Issue

Material threat medical countermeasure under 21st Century Cures Act

- Qualifies for **Priority Review Voucher (PRV)** upon licensure*
  - **PRVs have no expiration date, are transferrable and have sold for ~$125 M**

*BLA/NDA priority 6-month review is expected.

Milestones – Recently Completed and Upcoming

☑	November 2018	Received FDA minutes confirming agreement on the design of P302/RECOVERY study
☑	March 2019	Met with FDA to discuss new FM Phase 3 study design using TNX-102 SL 5.6 mg
☑	March 2019	P302/RECOVERY study initiated
☑	April 2019	Received FDA formal minutes with clear guidance and support on new Phase 3 FM study
☑	May 2019	In-licensed TNX-1300, product candidate in Phase 2 development for cocaine intoxication
☐	Second Half 2019	Preliminary human pharmacokinetic and safety data (non-IND study) from selected TNX-601 (tianeptine oxalate) formulation expected
☐	First Half 2020	Topline data from P302/RECOVERY study expected

Summary

Two Phase 3 Programs in indications affecting millions of Americans

- Tonmya for PTSD: affects 12 million adults in U.S.; currently conducting Phase 3 trial with data expected next year; bedtime treatment
- TNX-102 SL for Fibromyalgia: affects between 5-10 million adults in U.S.; in Phase 3 development

Two Phase 2 Programs in indications for which there is no FDA-approved drug available

- TNX-1300 for Cocaine Intoxication: biologic; ready for Phase 2
- TNX-102 SL for Agitation in Alzheimer's Disease: ready for Phase 2/3

Pipeline products to improve biodefense and leverage PTSD expertise

- TNX-601: tianeptine oxalate in formulation development for daytime treatment of PTSD
- TNX-801: smallpox-preventing vaccine in preclinical development; demonstrated protective vaccine activity in mice; GMP viral production process in development
- TNX-701: oral radioprotection drug in preclinical development; demonstrated radioprotective effect in mice

TONIX PHARMACEUTICALS
NASDAQ: TNXP

Thank you!