

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) August 16, 2013

RETROPHIN, INC.

(Exact name of registrant as specified in its charter)

Delaware

000-53293

26-2383102

(State or other jurisdiction
of incorporation)

(Commission
File Number)

(I.R.S. Employer
Identification No.)

777 Third Avenue, 22nd Floor, New York, NY

10017

(Address of principal executive offices)

(Zip Code)

Registrant's telephone number, including area code (646) 837-5863

(Former name or former address, if changed since last report.)

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:

- 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.

On August 16, 2013, Retrophin, Inc. released a presentation on its corporate website in connection with its conference call discussing recent developments in its business. The presentation is attached hereto as Exhibit 99.1 and is incorporated by reference herein.

Item 9.01. Financial Statements and Exhibits.

99.1 Conference call presentation, dated August 16, 2013.

SIGNATURE

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

RETROPHIN, INC.

Date: August 19, 2013

By: /s/ Marc Panoff

Name: Marc Panoff

Title: Chief Financial Officer

Retrophin

August 2013

Re **trophin**



Forward-Looking Statements

This presentation contains forward-looking statements, including statements about our prospects, competitive position, regulatory filings and agency actions, and the anticipated development, timing, data readouts and therapeutic scope of programs in our clinical pipeline. These forward-looking statements may be accompanied by such words as “anticipate,” “believe,” “estimate,” “expect,” “forecast,” “intend,” “may,” “plan,” “project,” “target,” “will” and other words and terms of similar meaning. You should not place undue reliance on these statements.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including the safety and efficacy of our product candidates, product competition, the occurrence of adverse safety events with our products, adverse market and economic conditions, our dependence on collaborations and other third parties over which we may not always have full control, failure to comply with government regulation, our ability to protect our intellectual property rights, and have sufficient rights to market our products and services together with the cost of doing so, problems with our manufacturing processes and our reliance on third parties, our ability to attract and retain qualified personnel, our level of indebtedness, environmental risks, change of control provisions in our collaborations and the other risks and uncertainties that are described in the Risk Factors section of our most recent annual or quarterly report and in other reports we have filed with the SEC.

These statements are based on our current beliefs and expectations and speak only as of the date of this presentation. We does not undertake any obligation to publicly update any forward-looking statements.

Retrophin 2013 Goals

- Advance RE-024 to IND-enabling toxicology or IND filing
- Initiate enrollment for the RE-021 FONT-3 trial
- Consummate a transformative business development transaction

Pantothenate Kinase Associated Neurodegeneration (PKAN)

- Lethal, autosomal recessive neurodegenerative disorder
 - Caused by mutations in PANK2, a kinase
 - Cause discovered in 2001 by Dr. Hayflick
 - Previously referred to as Hallervorden-Spatz Syndrome
- Dystonia is the cardinal symptom of PKAN
 - Atypical (25%) adult-onset, slower progression form
 - Classic (75%) childhood-onset, rapid progression form
- No FDA approved treatments
 - None on the horizon other than RE-024
- Ultra-orphan disease
 - Estimated 5,000 - 10,000 global patients WW

PKAN – Why Retrophin?

- “Brute-Force” Disease Screening
 - 2000+ orphan diseases
 - Ranked by prevalence, pharmacoeconomics/QOL, monogenicity, treatment need, pathogenesis complexity
- Example: Gaucher Disease
 - Very severe, monogenic, difficult to improve on Cerezyme
Decision: PASS
- Example: Cystic Fibrosis
 - Very severe, monogenic, no broadly useful treatments, difficult pathogenesis/disease process
Decision: PASS
- Example: ALS
 - Very severe, no genetic cause, no useful treatments, unknown pathogenesis
Decision: PASS
- Example: PKAN
 - Very severe, monogenic, no treatments, clear pathogenesis and path to a drug
Decision: RESEARCH FURTHER

Retrophin's R&D Approach

Catastrophic Properties

- Not always rare
- Lethal
- Pediatric
- High cost to system and patient
- Low QOL, inability to have a productive life
- Phase I/II approval possible

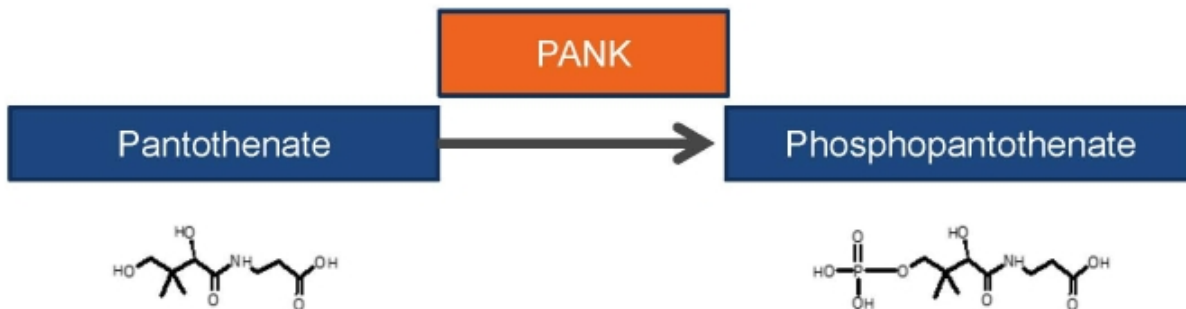
Retrophin

Understood Properties

- Often monogenic
- Traditional treatment modality
- Scientific consensus
- IND within 24 months
- Defined target engaged (replacement therapy, enzyme inhibition)

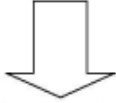
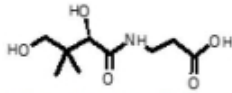
PANK (pantothenate kinase)

- Four human pantothenate kinase isoforms (E.C.2.7.1.33)
 - PANK1, 2, 3, 4
 - Isoforms of proteins expressed according to cell type & intracellular location
- Pantothenate kinase phosphorylates its substrate, pantothenate, into phosphopantothenate



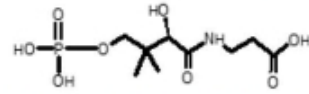
Coenzyme A Biosynthesis

pantothenate



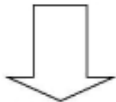
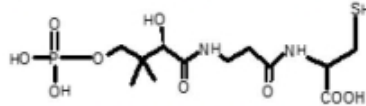
pantothenate kinase (PANK)

phosphopantothenate



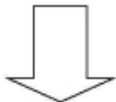
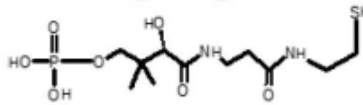
phosphopantothenate cysteine ligase (PPCL)

phosphopantothenoylcysteine



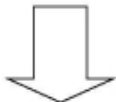
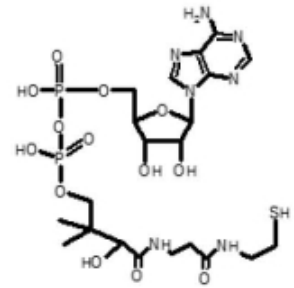
phosphopantothenoylcysteine decarboxylase (PPC-DC)

phosphopantetheine



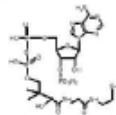
phosphopantetheine adenyl transferase (PPAT)

dephospho-CoA

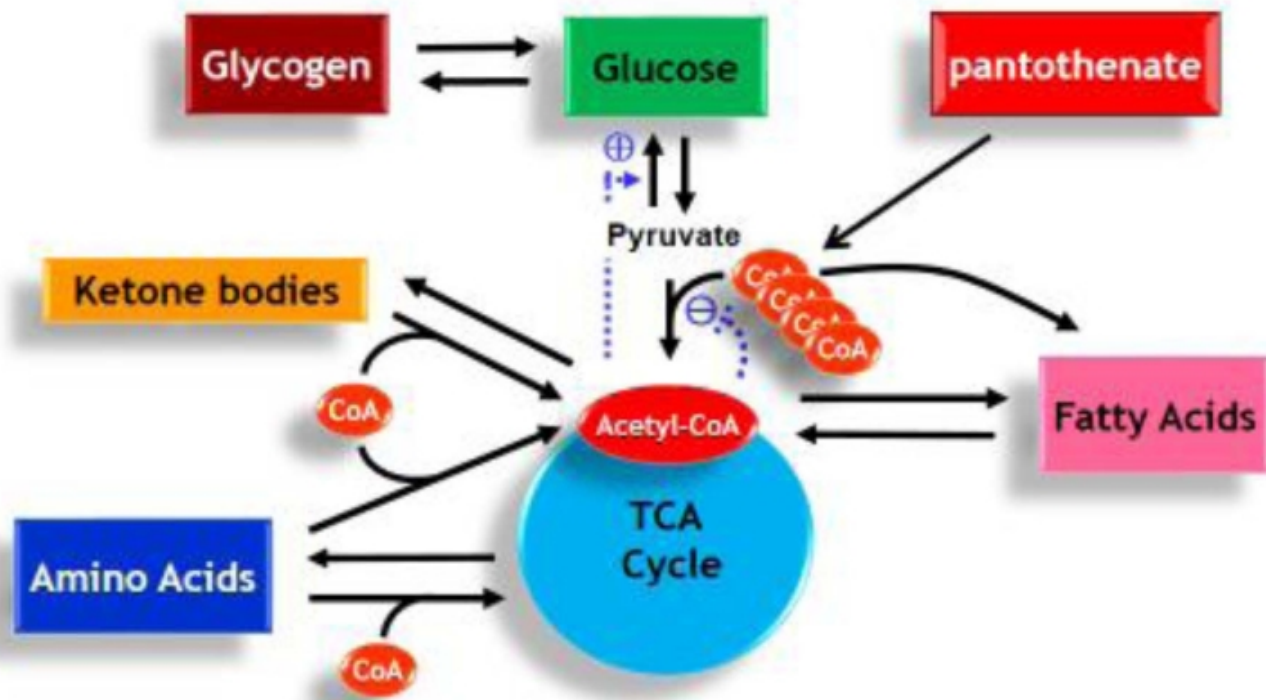


dephosphocoenzyme A kinase (DPCK)

Coenzyme A



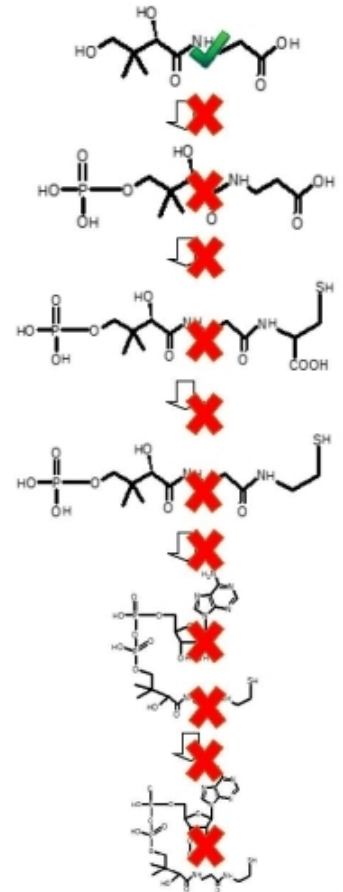
Coenzyme A Plays A Central Role in Metabolism



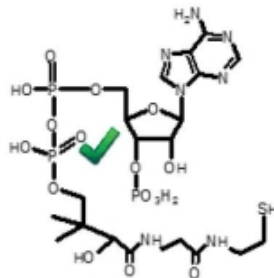
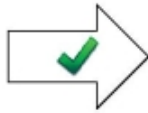
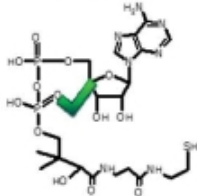
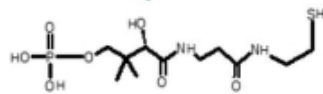
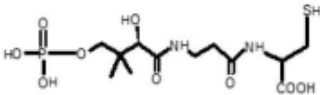
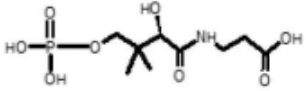
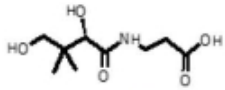
PANK2



- Patients with PANK2 deficiency cannot phosphorylate pantothenate (vitamin B5) into phosphopantothenate
- The human PANK2 isoform is expressed in the brain
 - We believe there are cell types which rely exclusively on PANK2 for CoA production in the brain
- Retrophin had two options to correct this disease
 - Replace the enzyme (PANK2)
 - Replace the substrate (phosphopantothenate)



RE-024



Pantothenate: dietary supply of Vitamin B5

PANK2 gene: mutated and defective



Even though PANK2 is mutated and cannot create phosphopantothenate, RE-024 can replace phosphopantothenate...



...and as a result, the rest of the Coenzyme A production chain can continue, as the remaining enzymes are intact in PKAN patients.



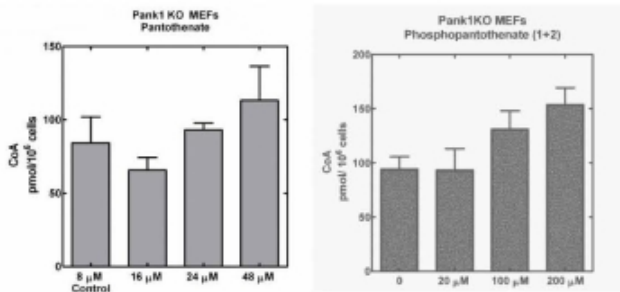
- Retrophin developed a library of phosphopantothenate molecules which serve as replacement therapy
 - Naked phosphopantothenate was predicted to not be viable
 - Unique “Pro-tide” chemistry used to overcome this challenge
- NCEs with no prior art or similar disclosure of structure in literature
- IP filed, 100% Retrophin owned
- Research collaboration with St. Jude Children’s Research Hospital



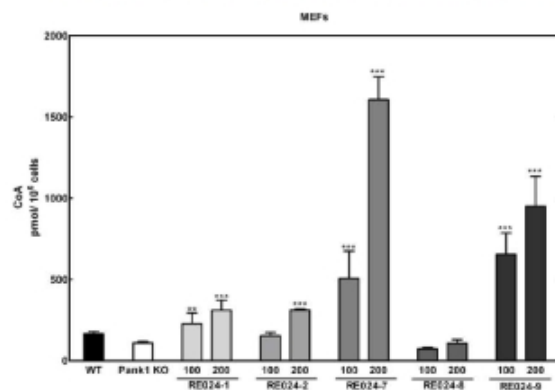
RE-024 In Vitro

- Mouse cells with PANK1 knockout show limited or no restoration of CoA with pantothenate or phosphopantothenate
- RE-024 species demonstrated profound CoA restoration

**CoA Levels in MEFs - HPLC
24-hr w/Control Cmpnds**

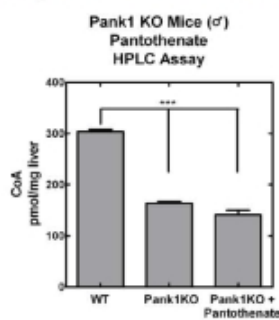


CoA Levels in MEFs - HPLC

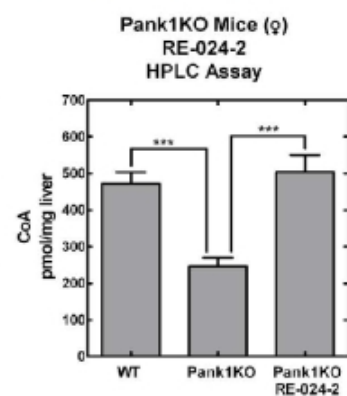
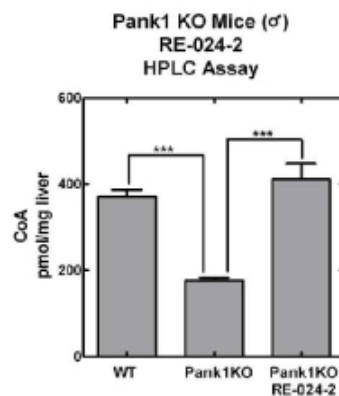


- PANK1 knockout mice have profound liver CoA decrease relative to wild-type
 - Pantothenate does not rescue this
 - RE-024 rescues this phenotype back to wild-type (or slightly above)
 - RE-024 has drug-like solubility, cell permeability
 - Predicted to be non-toxic

CoA Levels in Liver - HPLC 5 days w/ control cmpnd

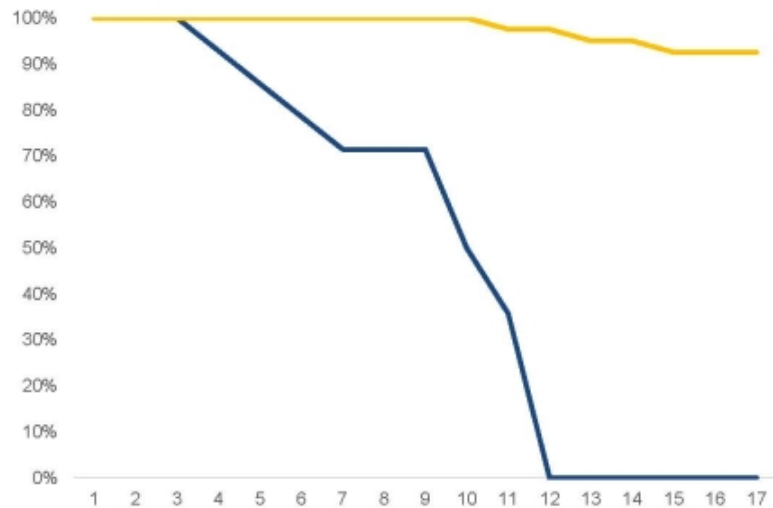


CoA Levels in Liver – HPLC 5 days w/ RE024 cmpnd



RE-024 Survival

- Healthy mice were given hopantenate, a pan-pantothenate kinase inhibitor which induces death in mice
 - We starved mice of Vitamin B5 to ensure rapid death
- 93% of mice on RE-024 survived
- 0% of mice on placebo survived
- $P < 0.0001$



RE-024 Next Steps

- Launching RE-024 toxicology program imminently
- Urging regulators to allow for early access to RE-024 given limited likelihood of toxicity given metabolic fate
- Planning pivotal Phase I/II trial for 2014
- Will continue working on RE-024 library and backups

Autism

- >1% of the U.S. population (3,000,000+ people) have autism
 - 70% male
 - 70% with severe cognitive impairment (IQ<70)
 - Similar patient pool size and economic opportunity to Alzheimer's
 - 90% cannot hold regular job in adulthood (*Mottron et al., 2011*)
 - 1 in 50-88 children born with autism (CDC)
 - Was 1 in 1000 just 10 years ago
- No approved treatments
 - Risperdal approved for aggression in autism
- Pharmacoeconomic emergency
 - Lifetime cost of autism is \$3.2 million
 - **Out-of-pocket** cost to patients and family of \$8,000 PPPY
 - Retrophin estimates a new drug can be priced at \$10,000 - \$30,000 PPPY
- Three key symptoms diagnose autism
 - Language/communication difficulty
 - Obsession, stereotyped compulsion, repetitive behaviors
 - Social cognition defect

Schizophrenia

- No new mechanism of action in schizophrenia in decades
 - All drugs are dopamine antagonists with some serotonin interaction
- Schizophrenia is one of the largest pharmaceutical markets and still represents a market of unmet medical need
 - Zyprexa \$5 billion peak sales
 - Abilify \$6 billion peak sales
 - Risperdal \$4 billion peak sales
 - Seroquel \$5 billion peak sales

2013 Milestones

RE-021	
Initiate “FONT-3” study (potential pivotal)	H2 2013
PKAN	
IND-enabling toxicology	H2 2013
IND/CTA filing	Q4 2013
Autism & Schizophrenia	
Close transaction	Q3/Q4 2013

Retrophin

August 2013

Re  trophin

