Conatus Pharmaceuticals Inc. (CNAT) — Overweight

Initiating w/ OW: Emricasan A Promising Opportunity In Liver Disease

CONCLUSION

We are initiating coverage of Conatus Pharmaceuticals with a Overweight rating and $16 price target. We believe Conatus' lead drug, emricasan, represents a potential first-in-class treatment for patients at risk of developing fibrosis and/or cirrhosis due to underlying liver disease. We believe the six completed Phase I trials and four Phase II trials conducted by Idun and Pfizer de-risk the company's lead program, with trials showing promising efficacy via reduction in elevated liver enzyme levels and markers for inflammation and apoptosis to normal or near normal levels, as well as an acceptable tolerability profile. We believe Conatus' development strategy, which initially focuses on smaller indications with high unmet medical needs, should allow emricasan to reach the market more quickly, avoiding adverse events that could occur with chronic dosing and market segments with direct competition.

- **Promising initial clinical data.** We believe data from emricasan's 10 completed Phase I and II trials are encouraging, with early data showing sustained reduction in ALT and cCK18, two biomarkers associated with reduction in inflammation and apoptosis that drive liver disease. Additionally, previous clinical trials show emricasan to be well tolerated, with >500 patients studied. We believe the breadth of previous clinical experience helps de-risk the emricasan program.

- **Focus on niche markets with high unmet medical need.** We believe Conatus' development strategy, which focuses initially on indications with high unmet need, should allow emricasan to reach the market more quickly and establish its clinical benefit in market segments with no direct competition. We look to Acute on Chronic Liver Failure (ACLF) as emricasan's lead indication, with Phase IIb data expected in mid-2014. We are bullish on probability of success in the trial as we note it mimics previous Phase II trials which have shown positive efficacy changes via liver biomarkers.

- **$16 price target based on ACLF indication only.** Our $700mn peak sales estimate is based on ~35% share in the US and EU, ignoring other territories where Conatus has product rights. We assign no credit for emricasan's potential role in CLF or HCV-POLT, ~$215mn and ~$180mn peak sales opportunities respectively, each of which could generate meaningful upside to our estimates and price target.

RISKS TO ACHIEVEMENT OF PRICE TARGET

Principal risks to our price target include: 1) emergence of a safety signal or lack of efficacy; 2) new HCV anti-virals could reduce size of HCV-POLT market opportunity beyond our expectations 3) delay in emricasan to reach the market and 4) inability to raise capital.

COMPANY DESCRIPTION

Conatus focuses on treatments for liver disease.

PRICE: US$9.29
TARGET: US$16.00
DCF of projected 2015-2028 free cash flows, 15% discount rate

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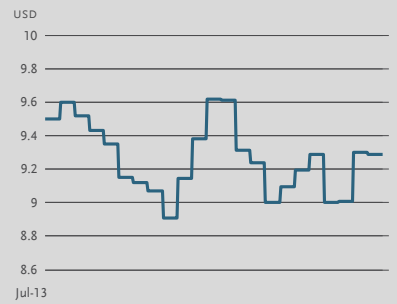
Changes	Previous	Current
Rating		Overweight
Price Tgt		US$16.00
FY13E Rev (mil)	—	US$0.0
FY14E Rev (mil)	—	US$0.0
FY13E EPS	—	US$(0.75)
FY14E EPS	—	US$(1.55)

52-Week High / Low	US$11.24 / US$8.26
Shares Out (mil)	16.5
Market Cap. (mil)	US$153.3
Book Value/Share	US$0.34
Net Cash Per Share	US$4.39
Debt to Total Capital	1%
Yield	0.00%
Fiscal Year End	Dec

Price Performance - 1 Year



Source: Bloomberg

YEAR	REVENUE (US$ m)						EARNINGS PER SHARE (US$)					
	Mar	Jun	Sep	Dec	FY	FY RM	Mar	Jun	Sep	Dec	FY	FY P/E
2012A	—	—	—	—	0.0	NA	—	—	—	—	(0.91)	NM
2013E	0.0A	0.0	0.0	0.0	0.0	NA	(0.13)A	(0.20)	(0.17)	(0.24)	(0.75)	NM
2014E	—	—	—	—	0.0	NA	—	—	—	—	(1.55)	NM

Conatus Pharmaceuticals (CNAT): Snapshot

➢ **Conatus Pharmaceuticals is a clinical stage biotechnology company focused on treatments for liver disease.**

➢ **Lead drug: emricasan, an oral pan-caspase protease inhibitor currently in Phase II**

- Initial indication: Acute on Chronic Liver Failure (ACLF). Phase IIb trial to commence Sept./Oct. 2013, data expected mid-2014.
  - Estimate ~80k patients in US; ~70k in EU5; ~$2bn potential market; assume ~35% share translating into ~$700mn peak sales in US & EU5
  - We view Phase IIb trial as relatively de-risked as 1) mimics previous Phase II trials which have shown efficacy via changes in liver biomarkers and 2) well tolerated in all previous trials (>500 patients studied)
- 2 potential follow-on indications:
  - Chronic Liver Failure (CLF): ~5,800 liver transplants vs ~11k patients on waiting list; ~$500mn potential market; assume <40% share supports ~$215mn peak sales estimate
  - Hepatitis C Post-Orthotopic Liver Transplant (HCV-POLT): could be ~$1.0bn market; we assume <20% share translating into ~$180mn peak sales opportunity
- Potential for label expansion to potential blockbuster markets (e.g. NASH with ~1.5mn patients)
- No direct competition in any of three lead indications

➢ **Conatus senior management team also an asset for the company**

- 80% from original Idun Pharmaceuticals
- 20%, including Chief Medical Officer, from Pfizer – oversaw all aspects of emricasan development at Pfizer

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Management Team

- **Steve Mento, PhD – President & CEO**
  - Former President & CEO of Idun Pharmaceuticals
  - Experience at Chiron, Viagene & Lederle-Praxis Biologicals

- **Alfred Spada, PhD – Chief Scientific Officer**
  - Former Vice President of Pharmaceutical & Preclinical Development at Idun
  - Previously Department Director of Medical & Analytical Chemistry at Aventis

- **Gary Burgess MB, ChB, M. Med – SVP Clinical Research & Chief Medical Officer**
  - Former Sr. Director & Clinical Portfolio Lead for Asia Research at Pfizer
    - Oversaw all aspects of Emricasan development

- **Charles Cashion – SVP Finance & CFO**
  - Former CFO of Idun
  - Previously at Quidel, Immune Response, Smith & Baxter

- **Daniel Ripley – Head of Corporate Development**
  - Formerly at Apricus Biosciences, BioBlocks, Kalypsys, Isis

Conatus Pharmaceuticals (CNAT): Investment Summary

What does the company do? Conatus is a clinical stage biotechnology company focused on the treatment of liver disease. Conatus' lead drug, emricasan, is an oral pan-caspase protease inhibitor currently in Phase II trials.

Key Pipeline Drug:

- **Emricasan:** a potential first-in-class, oral caspase protease inhibitor with Phase IIb trial expected to commence in Sept/Oct. 2013 for Acute on Chronic Liver Failure (ACLF). We model peak sales of ~$700mn in US and EU alone. Additional potential indications include Chronic Liver Failure (CLF) and Hepatitis C Post-Orthotopic Liver Transplant (HCV-POLT).

INVESTMENT THESIS:

We believe Conatus' lead drug, emricasan, represents a potential first-in-class treatment for patients at risk of developing fibrosis and/or cirrhosis due to underlying liver disease. We believe the six completed Phase I trials and four Phase II trials conducted by Idun and Pfizer de-risk the company's lead program, with trials showing promising efficacy via reduction in elevated liver enzyme levels and markers for inflammation and apoptosis to normal or near normal levels, as well as an acceptable tolerability profile. We believe Conatus' development strategy, which initially focuses on smaller indications with high unmet medical needs, should allow emricasan to reach the market more quickly, avoiding adverse events that could occur with chronic dosing and market segments with direct competition.

Valuation: $16 PT based on DCF valuation of projected free cash flows from 2015-2028E

Key Risks:

- Risks include 1) emergence of safety signal (i.e., malignancies); 2) new HCV anti-virals could reduce size of HCV-POLT market beyond our expectations; 3) inability to raise additional capital.

Next Potential Catalyst:

- Phase IIb data in ACLF in mid-2014.

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): DCF Valuation – PT of $16/share

- **12 month price target of $16 based on DCF valuation of projected free cash flows from 2015-2028**
  - Discounted through end 2014
  - We assume no terminal value as we extend our model through patent expiration
  - Although we calculate a WACC of 8% we have taken a conservative approach, using a 15% discount rate
  - Consistent valuation approach with other companies in our coverage universe

Conatus Pharmaceuticals (CNAT): DCF Valuation

➢ACLF indication only

Discounted Cash Flow (DCF) and Equity Valuation ($mn, except per share amount):	
Assumed Discount Rate (%)	*15.0%*
Discounted Net Cash Flow (2015-28)	**$222,431**
Terminal Growth Rate (%)	*No TV*
Implied Terminal Year FCF Multiple	0.0x
Present Value of Terminal Value	**$0**
Terminal Value as % of total	0.0%
Enterprise Value	**$222,431**
Add: Net Cash	47,328
Equity Value	**$269,759**
Shares Outstanding 2014E (million)	16,822.5
Equity Value per Share	**$16**

Equity Value Sensitivity Analysis

Terminal Growth	Discount Rate 12.5%	15.0%	17.5%	20.0%
No TV	$350,761	$269,759	$208,137	$161,012
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No TV	$350,761	$269,759	$208,137	$161,012

WACC Calculation	
Predicted beta	1
10-year Bond yield (risk-free rate) US	2.70%
Market return rm	8.0%
Market premium	5.3%
Cost of equity	**8.00%**
Cost of debt (before tax)	5.0%
Cost of debt (after tax 35%)	**3.3%**
Market Equity 2013E (mn)	140
Total Debt 2013E (mn)	1
Debt + Equity	141
WACC	**8.0%**

Source: Factset and Piper Jaffray

Value per Share

Terminal Growth	Discount Rate 12.5%	15.0%	17.5%	20.0%
No TV	$21	$16	$12	$10
No TV	$21	$16	$12	$10
No TV	$21	**$16**	$12	$10
No TV	$21	$16	$12	$10
No TV	$21	$16	$12	$10

Conatus Pharmaceuticals (CNAT)

Principal Risks

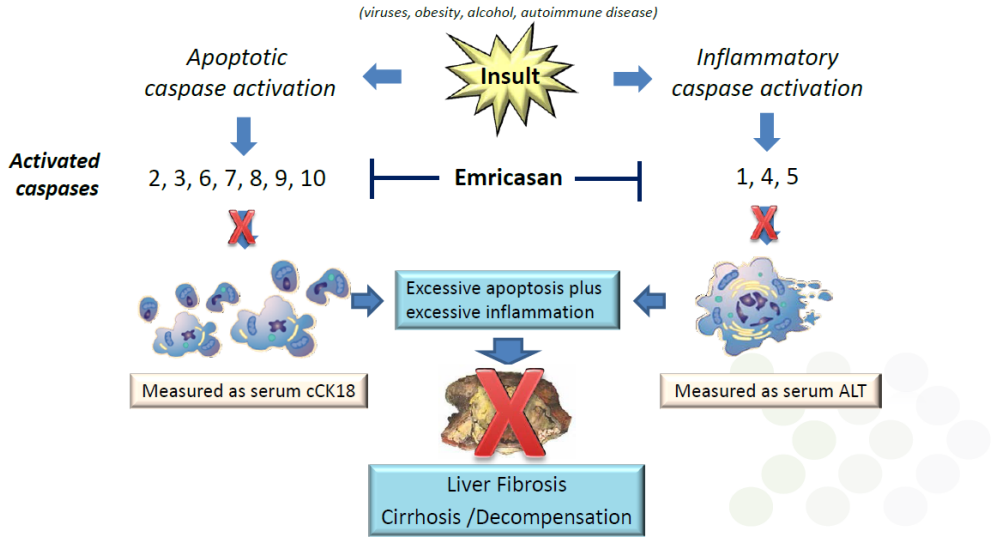
- **Emergence of a safety signal**
  - Emricasan was placed on clinical hold following emergence of inflammatory infiltrates (potential cancer signal) in mice in a preclinical trial. While emricasan showed no evidence of drug-related tumorgenicity via 6 month carcinogenicity study, should a safety signal reemerge, emricasan's further development or commercial adoption could be hindered.
    - January 2013: FDA cleared Conatus to commence with planned HCV-POLT trial which includes exposure up to 2 years
      - Addresses initial market opportunity & also supports evaluation in more chronic indications (e.g. NASH)
- **New HCV anti-virals could reduce size of HCV-POLT market beyond our expectations**
  - New DAAs could reduce disease progression and onset of cirrhosis, limiting opportunity among HCV-infected patients
    - Sales in HCV-POLT are not in our estimates despite key opinion leaders (KOLs) views that this market segment will remain viable despite increase in HCV cure rates.
- **Inability to raise additional capital**
  - Our model assumes a $150mn secondary offering in 2015. Inability to complete a capital raise would constrain Conatus's cash position, limiting its ability to successfully launch emricasan and/or complete development of other indications
    - IPO proceeds sufficient to emricasan ACLF Phase III data in 2016.
    - 2015 capital raise needed to pursue HCV-POLT clinical trials and execute commercial launch in ACLF.
- **Loss of key personnel**
  - Team has >10 years experience with emricasan. Departure of management could limit Conatus's ability to successfully complete development of emricasan

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Emricasan Background

- Potential first-in-class orally active caspase protease inhibitor, currently in Phase II
- Focusing on smaller liver disease indications **– no direct competition**
- Profile suggests drug to be potent inhibitor of apoptoptic and cytokine activating caspases
  - Potency across family of 11 caspases & selective for caspase family
- Can reduce excessive apoptosis & inflammation common to liver disease by inhibiting caspases
  - Animal modes show anti-fibrotic and anti-inflammatory activity
  - Early trials demonstrated reduction in biomarkers of liver cell death and inflammation
- Completed 6 Phase I trials and 4 Phase II trials in >500 patients **– de-risks the program**

Emricasan Inhibits Both Apoptotic & Inflammatory Caspase



Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Emricasan Background

- **Discovered by Idun (Conatus team)**
  - 80% of Conatus team from Idun
  - 20% from Pfizer including Chief Medical Officer who intended to develop emricasan in NASH
    - A seasoned management team with >10 years experience working with emricasan

- **Acquired by Pfizer at P2 for ~$300mn, took drug to P3 in liver fibrosis**
  - Emergence of inflammatory infiltrates (potential cancer signal) in preclinical study led to clinical hold
  - Pfizer was able to show infiltrates were mouse specific but FDA wanted 2 year carc study in rats
    - Pfizer viewed rats as incorrect model to reproduce signal seen in mice
  - Concurrently Pfizer shut down GI/Hepatology business unit following portfolio review
    - At time, emricasan patents only covered through 2018 – 2 year delay would have been significant

- **Reacquired by Conatus who resolved clinical hold via 6 month carcinogenicity study – showed no evidence of drug-related tumorgenicity**
  - Completed comprehensive review of Pfizer materials – confirmed infiltrates due to overdose in mice
  - Reached agreement with FDA to not only lift hold but get approval for 2 year exposure via HCV-POLT Phase III study
    - Second carc study required for approval: 2 year rat study
      - No cancer signal seen in rats to date; 6 month tox study also conducted in rat model

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT)

Market Opportunity

- **Initially limited to ACLF indication**
  - We estimate ACLF market has potential to be ~$2bn market though we assume ~35% share translating into ~$700mn peak sales opportunity

- **CLF & HCV-POLT are upside**
  - CLF could be $500mn market though we estimate ~40% share supports peak sales estimate of ~$215mn
  - HCV-POLT could be $1.2bn market but we assume <20% translating into ~$180mn peak sales opportunity

- **We assume sales in US and EU only**
  - Partnership for other geographies – additional source of upside

- **Potential for label expansion beyond three initial indications to potential blockbuster markets**

Source: Piper Jaffray

Conatus Pharmaceutical (CNAT)

Clinical Trial Summary: Design and Endpoints

- Next potential catalyst: Phase IIb ACLF data in mid-2014 (Trial to start Sept/Oct 2013)
- Data in chronic liver failure in late 2015, Phase III data in ACLF in late 2016

Indication	Phase	Expected Start	Expected Completion	Size	Design	Endpoints
Acute on Chronic Liver Failure (ACLF)	2b	Sept/Oct 2013	Mid-2014	60	28 day dose ranging study; follow up through month 6	Dose ranging Time to clinical worsening (liver transplant, next organ failure, death) Change in liver function biomarkers (cCK18, ALT)
Acute on Chronic Liver Failure (ACLF)	3	Mid-2015	Late 2016	390	28 days of treatment; active arm then re-randomized with treatment through 6 months; follow up through month 12	Time to clinical worsening (liver transplant, next organ failure, death) Change in liver function biomarkers (cCK18, ALT)
Chronic Liver Failure (CLF)	IIb	2H14	Late 2015	100	4 or 12 weeks of treatment; follow up through month 3	Time to clinical worsening (liver transplant, next organ failure, death) Change in liver function biomarkers (cCK18, ALT)
HCV Recurrant Post-Transplant (HCV-POLT)	2B/3*	2H13	Mid-2017	260	Treatment for 2 years; follow up through year 36	Disease progression via Ishek Fibrosis score Change in liver function biomarkers (cCK18, ALT)

* P2b in US; P3 in EU

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #1: What does the existing clinical data look like?

- Six Phase I healthy volunteer trials
- Four Phase II trials, >500 patient exposures
  - Duration of exposure up to 12 weeks; primarily in HCV

Emricasan Clinical Development Experience (Pfizer and Idun)

Population	Location	Treatment Groups	Dose/Days	Purpose	Outcome
Phase I Trials					
Healthy & liver impaired (n=76)	US	IV solution Single administration (Normal-30); Multiple administration (Normal-30); Mild hepatic dysfunction (16)	Single dose/ 7 days	Evaluate safety, tolerability & pharmakokinetics	Well tolerated; improved ALT
Healthy (n=24)	US	Capsule Randomized, open label, four way cross over single dose, PK dose proportionality study (5-500mg)	Single dose	Evaluate safety, tolerability & pharmakokinetics	Well tolerated; PK profiled
Healthy (n=24)	EU	Powder in capsule Single blind, randomized, placebo controlled, two-way crossover DDI study with ketoconazole	1 day	Investigate the steady state effects of ketoconazole on the PK, safety & tolerability of a single dose of IDN-6556	Well tolerated; no drug-drug-interaction with ketoconazole
Healthy (n=32)	US	Powder in capsule Double blind, randomized, placebo controlled, parallel group study multiple (escalating) dose oral administration	14 days	Evaluate safety, tolerability & pharmakokinetics	Well tolerated; PK profiled
Healthy (n=20)	EU & Singapore	Powder in capsule Randomized, double-blind, parallel group placebo-controlled study in multiple (escalating) dose oral admin	15 days	Evaluate safety, tolerability & pharmakokinetics	Well tolerated; no difference in PK in Asian population
Healthy (n=15)	US	Capsule Single blind, randomized, placebo controlled, two-way crossover DDI study with cyclosporine	27 days	Investigate the steady state effects of cyclosporine on the PK, safety & tolerability of a single dose of IDN-6556	Well tolerated; no effect on cyclosporine; no effect on cCK18 levels
Phase II Trials					
Liver Disease (HBV, HCV, NASH & PBC/PSC*) (n=105)	US & EU	Capsule Randomized, placebo-controlled, double-blind, ascending dose	14 days	Evaluate safety, tolerability, PK and the effects on liver enzymes and liver function test as markers of efficacy	Well tolerated; significantly lowered ALT levels
HCV (n=204)	US	Capsule Randomized, placebo-controlled, double blind parallel group, multicenter dose response trial	12 weeks	Evaluate safety and efficacy, effects on transaminases as markers of efficacy, PK, serum markers of mechanism of action apoptosis, inflammation and fibrosis	Well tolerated; significantly lowered ALT & AST, maintained during treatment; lowered cCK18
HCV (n=24)	US	Powder in capsule Multi-center, randomized double blind placebo controlled crossover dose response study	14 days	Evaluate low-dose emricasan in subjects with chronic HCV	Well tolerated; significantly lowered ALT levels
Transplant (n=99)	US & Germany	IV Randomized placebo-controlled, double blind study	24 hours	Evaluate safety, tolerability and efficacy in subjects undergoing POLT	Well tolerated; reduced apoptosis

* PBC = primary biliary cirrhosis; PSC = primary sclerosing cholangitis

Emricasan generally well tolerated

Extensive prior clinical experience helps de-risk the program

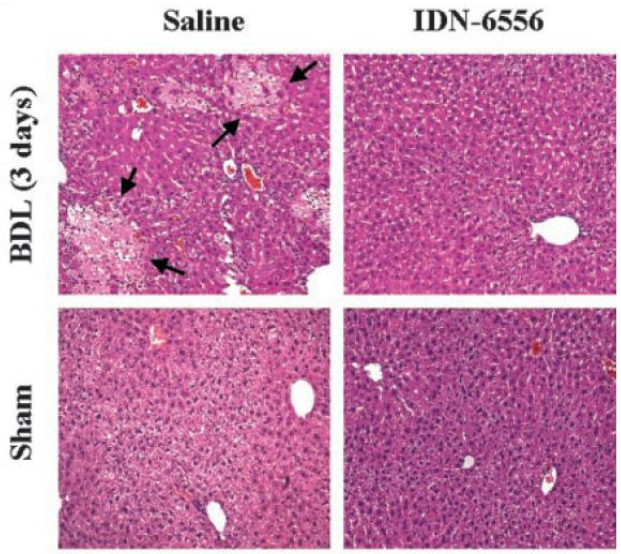
Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

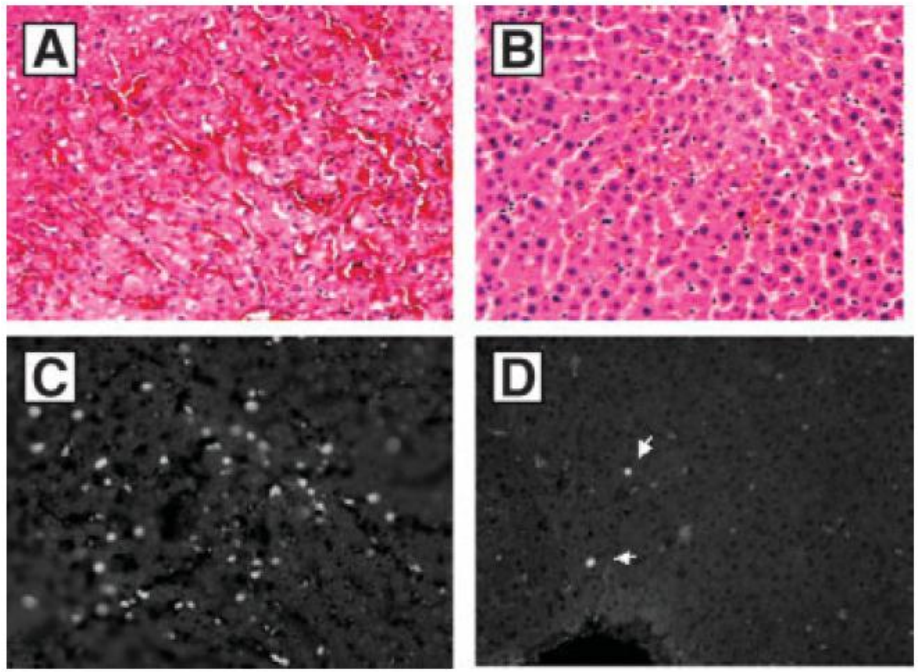
Question #1: What does the existing clinical data look like?

- Preclinical data shows improvement in liver fibrosis and injury in mouse and rat models

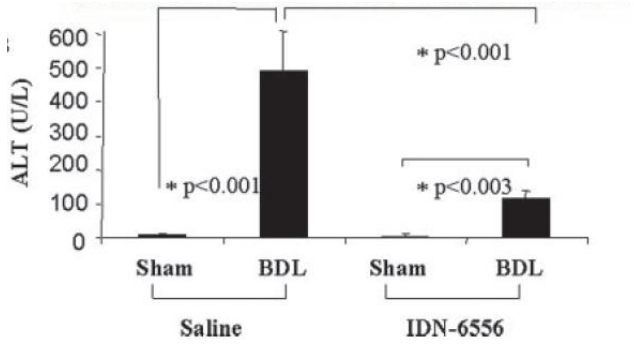
Hepatic Fibrosis Reduced in Mice Model



Reduction in Liver Injury via Rat Model



ALT Levels Reduced Also Reduced



Source: Company Reports & Piper Jaffray; IDN-6556 = emricasan

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #1: What does the existing clinical data look like?

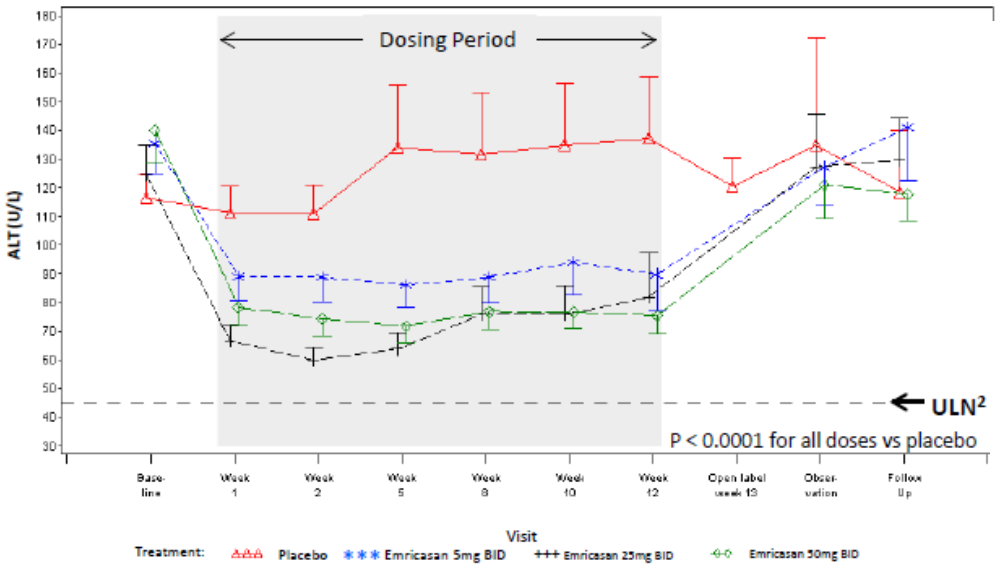
➢ Initial data focuses on changes in biomarkers for liver disease – reduce inflammation & apoptosis that drive liver disease

- **ALT:** elevated levels of ALT represent a general marker of liver cell death and inflammation
- **cCK18:** a protein cleaved by caspases during apoptosis
  - Reduction in serum cCK18 as marker of improved liver function

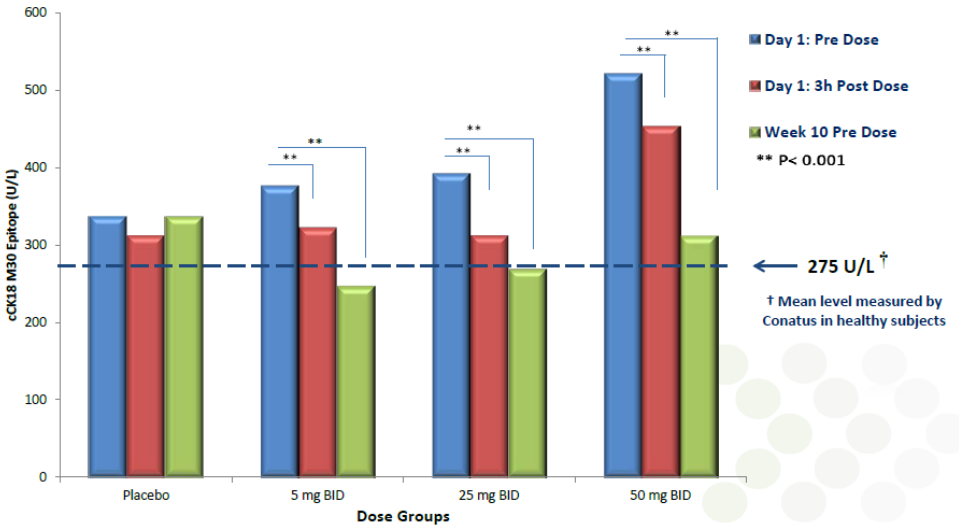
➢ Data is early but suggests sustained reduction in ALT and cCK18

- Phase IIb dose response study: n=204, non-cirrhotic HCV treatment failures with elevated ALT
- ALT returned to baseline upon treatment discontinuation
- cCK18 reached healthy patient level by Week 10
- AEs generally mild to moderate; no dose response relationship; no change in lab parameters

Change in ALT from Baseline



Change in cCK18 from Baseline



Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #1: What does the existing clinical data look like?

➢ Emricasan generally well tolerated in Phase IIb study in non-cirrhotic HCV patients

- 13 discontinuations but only 3 due to AE & only one on study drug (5mg BID)
- No clinically meaningful changes in lab values, vital signs, ECG or liver ultrasounds

	Placebo	Emricasan 5mg BID	25mg BID	50mg BID
N	51	55	50	48
Double-Blind Treatment Period				
Adverse Event	97	118	99	129
Patients with AE	30	42	31	36
AE occuring in >6 patients				
Headache	8	6	5	5
Fatigue	4	7	4	7
Nausea	2	6	1	6
Diarrhea	6	2	2	4
Back Pain	1	1	4	5
Upper Respiratory Tract Infection	1	2	2	5
Insomnia	2	4	2	1
Open-Label Treatment Period				
Adverse Events			34	
Patients with AE			17	
AE occuring in >1 patient				
Headache			2	
Fatigue			2	
Arthralgia			2	
Rash			2	

Most AEs mild/moderate

Source: Company Reports & Piper Jaffray

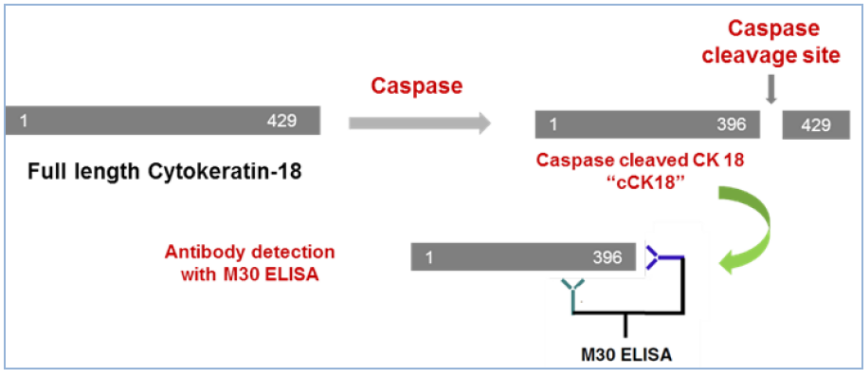
Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #2: What is the clinical relevance of Conatus's biomarkers?

Conatus trial endpoints evaluate change in biomarkers to assess improvement in liver function:

1. **cCK18:** released into blood when caspases cleave CK-18, a structural protein within cell
   - Detectable via enzyme-linked immunosorbent assay (ELISA)
   - Change in CK-18 caspase-cleavage fragments also endpoint in Gilead P2 trials of Gs-9450

Caspase Cleavage of Cytokeratin 18 (CK18) & Detection by ELISA



- **Reduction in serum cCK18 is a marker of improved liver function as shown in multiple clinical trials across various disease states**
  - **HCV:** serum apoptotic caspase activity has been shown to be strongly associated with severity of liver histological lesions (prevent liver from properly functioning)
  - **ACLF:** serum cCK18 higher in non-surviving patients than surviving patients
  - **CLF:** elevated cCK18 levels correlated with disease severity
  - **NASH:** risk of NASH increased with increasing CK-18 fragments (cCK18)
    - Also significantly higher in patients with fibrosis, including moderate to severe fibrosis vs. mild

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

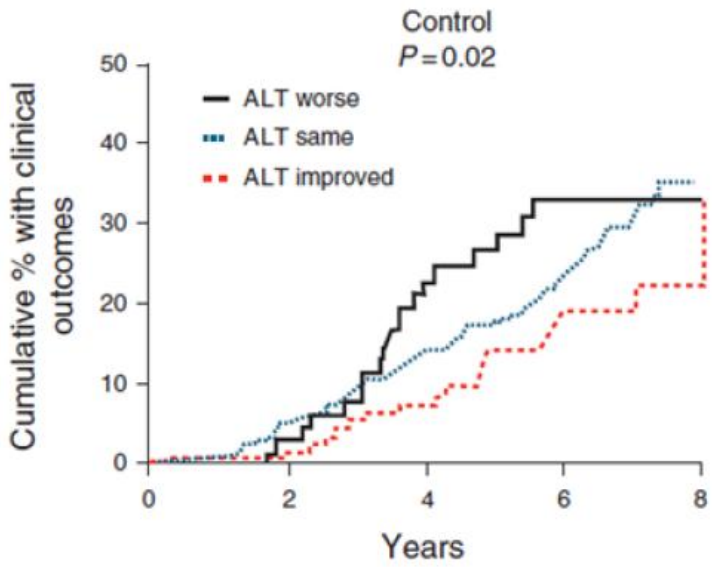
Question #2: What is the clinical relevance of Conatus' biomarkers?

2. **ALT:** enzyme produced by liver, elevated levels of ALT represent a general marker of liver injury and inflammation, more specific to liver than AST
   - We note that change in ALT was also an also endpoint in Gilead P2 trials of Gs-9450

➢ **Data from Roche's Phase III trial of Pegasys in HCV confirmed relevance of ALT.**

- Sub-group analysis from Hepatitis-C Antiviral Long-term Treatment against Cirrhosis (HALT-C) trial (n=834) showed reduced hepatic inflammation as determined via histology and reduced ALT was associated with reduced fibrosis progression and fewer clinical outcomes including hepatitic decompensation, liver cancer & death

ALT vs. Disease Progression in HCV via HALT-C Trial



Source: Company Reports & Piper Jaffray

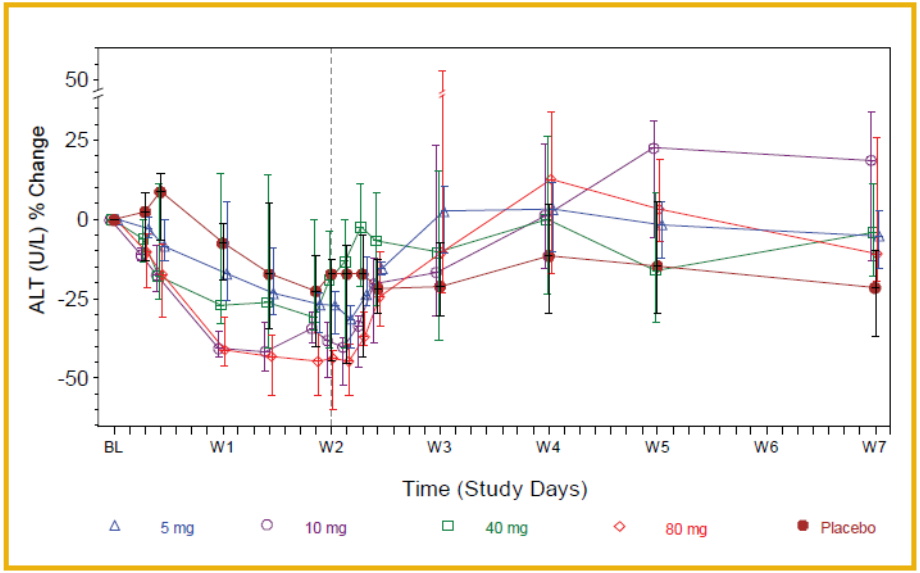
Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #3: What happened to Gilead's caspase inhibitor and is that an issue for the class?

- **Gilead was developing GS-9450, a caspase inhibitor, as a potential treatment for HCV**
  - On April 19, 2010, Gilead announced discontinuation of development due to emergence of drug induced liver disease in Phase IIb trial
  - Based on conversations with Gilead management this appears to be a drug-specific rather than class-specific safety issue
  - GS-9450 contained fluoromethyl ketone, which is known to potentially form toxic metabolites

GS-9450 Phase IIa data: Similar Efficacy Trend in ALT

Median ALT (U/L) % Change from Baseline



Mean Absolute Change from Baseline at D14

	ALT (U/L)			AST (U/L)		
	Baseline	D14	Change	Baseline	D14	Change
GS-9450 5mg (n=6)	112.3 (44.1)	81.6 (31.4)	-29.8 (22.5)	89.2 (30.0)	70.8 (24.1)	-22.0 (13.6)
GS-9450 10mg (n=6)	128.0 (52.4)	76.8 (37.9)	-51.2 (18.8)	74.7 (20.1)	54.7 (28.8)	-20.0 (18.1)
GS-9450 40mg (n=6)	87.0 (54.6)	69.5 (54.5)	-17.5 (16.4)	66.7 (39.1)	55.2 (39.7)	-11.5 (7.7)
GS-9450 80mg (n=7)	88.6 (50.4)	38.7 (18.6)	-33.8 (19.0)	71.9 (37.2)	38.7 (17.2)	-33.2 (30.8)
Placebo (n=8)	86.6 (41.0)	62.1 (18.2)	-26.4 (29.8)	60.0 (16.8)	49.3 (18.4)	-11.6 (18.7)

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

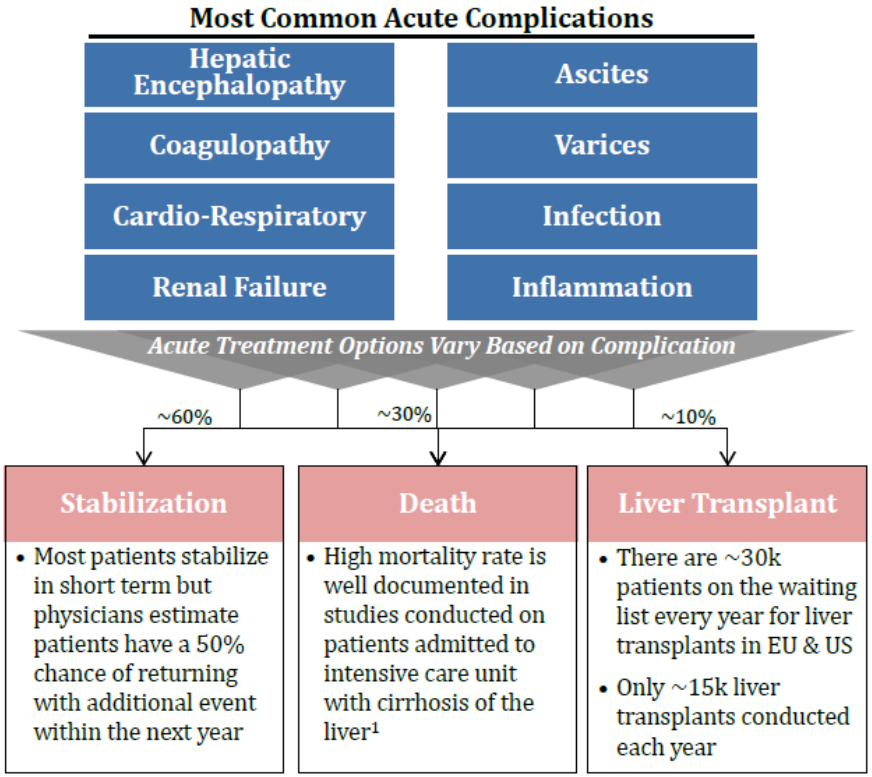
Question #4: What is the market opportunity for emricasan?

- Emricasan lead indication: Acute on Chronic Liver Failure (ACLF)
  - Condition where patient with compensated or decompensated cirrhosis experiences sudden loss in liver function
    - Have reasonably good liver function prior to acute incident
    - Patients often admitted to hospital for treatment
  - Current treatment limited to addressing acute issue – supportive care and transplant
  - 45% of patients expected to progress to next organ failure/death/transplantation within 28 days
  - Transplant could help but supply limited
  - Treatment goal: improving liver function during the acute event, allowing for return to stabilization or transplantation

- Framework for our ACLF Revenue Build
  - Estimate ~80,000 patients in US; ~70,000 in EU5
  - Estimate $2bn potential market
  - Assume <50% peak share with conservative duration of treatment of ≤6 weeks
  - Model reflects these territories only, with ROW as upside (likely via partnership)

- Potential for orphan drug designation (post-P2B data) in US & EU

Current ACLF Patient Flow



Model peak sales ~$700mn in US & EU

Source: Company Reports, Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #4: What is the market opportunity for emricasan?

ACLF 2017-2028 US Revenue Model

Acute on Chronic Liver Failure (ACLF) - US	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
US Adult Population (000s)	249,920	252,194	254,489	256,805	259,142	261,500	263,880	266,281	268,704	271,149	273,617	276,107
Growth Rate (%)	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*	*0.91%*
Prevalence of cirrhosis	5,807	5,860	5,913	5,967	6,022	6,076	6,132	6,187	6,244	6,301	6,358	6,416
% share	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*
Cirrhosis-related hospitalizations/deaths	149	150	152	153	154	156	157	159	160	162	163	164
% share	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*
Prevalence ACLF	74.4	75.1	75.8	76.5	77.2	77.9	78.6	79.3	80.0	80.8	81.5	82.2
Prevalance rate (%)	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*
Critical ACLF	22.3	22.5	22.7	22.9	23.2	23.4	23.6	23.8	24.0	24.2	24.4	24.7
% critical	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*
Emricasan share - critical ACLF	0.7	2.3	3.9	5.5	7.2	8.4	9.4	10.0	10.8	11.1	11.5	11.8
% share	*3.0%*	*10.0%*	*17.0%*	*24.0%*	*31.0%*	*36.0%*	*40.0%*	*42.0%*	*45.0%*	*46.0%*	*47.0%*	*48.0%*
Severe ACLF	37.2	37.6	37.9	38.2	38.6	38.9	39.3	39.7	40.0	40.4	40.7	41.1
% severe	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*
Emricasan share - severe ACLF	1.1	3.4	5.3	7.6	9.6	11.3	12.2	13.1	13.6	14.1	14.5	14.8
% share	*3.0%*	*9.0%*	*14.0%*	*20.0%*	*25.0%*	*29.0%*	*31.0%*	*33.0%*	*34.0%*	*35.0%*	*35.5%*	*36.0%*
Moderate ACLF	14.9	15.0	15.2	15.3	15.4	15.6	15.7	15.9	16.0	16.2	16.3	16.4
% moderate	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
Emricasan share - moderate ACLF	0.0	0.0	0.1	0.4	0.7	1.2	1.5	1.7	2.0	2.1	2.3	2.5
% share	*0.0%*	*0.0%*	*0.8%*	*2.8%*	*4.3%*	*8.0%*	*9.5%*	*11.0%*	*12.5%*	*13.0%*	*14.0%*	*15.0%*
Total patients on emricasan	2	6	9	14	17	21	23	25	26	27	28	29
Average weeks of treatment across all segments	3.4	3.7	3.9	4.1	4.3	4.5	4.8	5.0	5.3	5.3	5.3	5.3
Net cost per week	$2,250	$2,295	$2,341	$2,388	$2,435	$2,484	$2,534	$2,585	$2,636	$2,689	$2,743	$2,798
Emricasan US ACLF Revenues ($mns)	**$14**	**$47.2**	**$84.6**	**$132.7**	**$184.6**	**$235.9**	**$279.8**	**$321.6**	**$366.1**	**$388.2**	**$409.4**	**$430.0**
Growth	*nm*	*nm*	*79.3%*	*56.9%*	*39.1%*	*27.8%*	*18.6%*	*14.9%*	*13.8%*	*6.0%*	*5.5%*	*5.0%*

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #4: What is the market opportunity for emricasan?

ACLF 2017-2028 EU5 Revenue Model

Acute on Chronic Liver Failure (ACLF) - EU	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
EU5 Population (000s)	325,642	327,271	328,907	330,552	332,204	333,865	335,535	337,212	338,898	340,593	342,296	344,007
Growth Rate (%)	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*
Prevalence of cirrhosis	5,757	5,786	5,815	5,844	5,873	5,902	5,932	5,961	5,991	6,021	6,051	6,081
% share	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*	*1.8%*
Cirrhosis-related hospitalizations/deaths	148	148	149	150	151	151	152	153	154	154	155	156
% share	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*
Prevalence ACLF	73.8	74.2	74.5	74.9	75.3	75.7	76.0	76.4	76.8	77.2	77.6	78.0
Prevalance rate (%)	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*
Critical ACLF	22.1	22.2	22.4	22.5	22.6	22.7	22.8	22.9	23.0	23.2	23.3	23.4
% critical	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*	*30%*
Emricasan share - critical ACLF	0.4	1.1	2.7	3.8	5.2	6.6	7.8	8.7	9.4	10.0	10.2	10.5
% share	*1.8%*	*5.0%*	*12.0%*	*17.0%*	*23.0%*	*29.0%*	*34.0%*	*38.0%*	*41.0%*	*43.0%*	*44.0%*	*45.0%*
Severe ACLF	36.9	37.1	37.3	37.5	37.6	37.8	38.0	38.2	38.4	38.6	38.8	39.0
% severe	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*	*50%*
Emricasan share - severe ACLF	0.4	1.5	3.0	4.9	7.2	8.7	10.3	11.7	12.8	13.6	14.3	14.8
% share	*1.0%*	*4.0%*	*8.0%*	*13.0%*	*19.0%*	*23.0%*	*27.0%*	*30.5%*	*33.3%*	*35.3%*	*37.0%*	*38.0%*
Moderate ACLF	14.8	14.8	14.9	15.0	15.1	15.1	15.2	15.3	15.4	15.4	15.5	15.6
% moderate	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
Emricasan share - moderate ACLF	0.0	0.0	0.0	0.2	0.6	1.1	1.4	1.5	1.7	1.8	1.9	1.9
% share	*0.0%*	*0.0%*	*0.0%*	*1.3%*	*4.0%*	*7.0%*	*9.0%*	*10.0%*	*11.0%*	*11.8%*	*12.0%*	*12.5%*
Total patients on emricasan	1	3	6	9	13	16	19	22	24	25	26	27
Average weeks of treatment across all segments	2.7	2.9	3.3	3.4	3.7	4.0	4.1	4.4	4.7	4.8	4.9	4.9
Net cost per week	$2,250	$2,228	$2,205	$2,183	$2,161	$2,140	$2,118	$2,097	$2,076	$2,055	$2,035	$2,015
Emricasan EU5 ACLF Revenues ($mns)	**$4.6**	**$16.6**	**$40.6**	**$66.0**	**$102.7**	**$139.0**	**$168.1**	**$202.5**	**$235.6**	**$249.1**	**$263.1**	**$268.9**
Growth	*nm*	*nm*	*143.9%*	*62.6%*	*55.6%*	*35.3%*	*20.9%*	*20.5%*	*16.3%*	*5.7%*	*5.6%*	*2.2%*

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #5: What are Potential Sources for Upside; CLF Opportunity?

- Chronic Liver Failure (CLF): Patient has chronic decompensation & liver function unlikely to improve
  - Transplant primary treatment option
    - High unmet medical need – demand for liver transplants exceeds supply
      - ~5,800 liver transplants annually vs. ~11k patients on waiting list
    - Some patients ineligible due to advanced disease
      - Transplant eligibility determined by Model for End-Stage Liver Disease (MELD) score
        - Range: 6-40; higher score translates into greater transplant urgency
        - Transplant average: 20; target range in Conatus trials: 20-30
  - Treatment goal: stabilize patient until transplant eligible or survival until time of transplantation

- P2B expected to commence 2H14
  - Trial goal: extend time to clinical worsening (transplant, death, next organ failure)
  - Potential launch 2017

- ~$215mn peak sales potential – all upside, not included in current valuation
  - ~$500mn potential market
  - Expect similar duration of therapy and pricing as ACLF
  - ~$10k/month; ≤6 weeks DOT

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #5: What are Potential Sources for Upside; CLF Opportunity?

CLF 2017-2028 Revenue Model

Chronic Liver Disease - US	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Liver Transplant Waiting List	17,950	18,113	18,278	18,444	18,612	18,781	18,952	19,125	19,299	19,474	19,652	19,830
Annual Liver Transplants	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805
Remaining Patients on Waitlist	12,145	12,308	12,473	12,639	12,807	12,976	13,147	13,320	13,494	13,669	13,847	14,025
Patients on emricasan	729	1,477	2,619	3,539	4,098	4,542	4,864	5,061	5,060	5,194	5,469	5,610
% penetration	*6.0%*	*12.0%*	*21.0%*	*28.0%*	*32.0%*	*35.0%*	*37.0%*	*38.0%*	*37.5%*	*38.0%*	*39.5%*	*40.0%*
Price/Patient/Week	$4,000	$4,080	$4,162	$4,245	$4,330	$4,416	$4,505	$4,595	$4,687	$4,780	$4,876	$4,973
Price Increase	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Weeks of therapy/year	4.0	4.3	4.5	4.8	5.0	5.3	5.5	5.8	6.0	6.0	6.0	6.0
Compliance	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Annual Cost of therapy	$14,400	$15,606	$16,854	$18,147	$19,484	$20,867	$22,298	$23,778	$25,308	$25,814	$26,330	$26,857
Emricasan US CLF Revenues ($mns)	**$10**	**$23**	**$44**	**$64**	**$80**	**$95**	**$108**	**$120**	**$128**	**$134**	**$144**	**$151**
Growth	*nm*	*nm*	*91.5%*	*45.5%*	*24.3%*	*18.7%*	*14.5%*	*11.0%*	*6.4%*	*4.7%*	*7.4%*	*4.6%*

Chronic Liver Disease - EU	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Liver Transplant Waiting List	10,304	10,355	10,407	10,459	10,511	10,564	10,617	10,670	10,723	10,777	10,831	10,885
Annual Liver Transplants	3,415	3,415	3,415	3,415	3,415	3,415	3,415	3,415	3,415	3,415	3,415	3,415
Remaining Patients on Waitlist	6,889	6,941	6,992	7,044	7,097	7,149	7,202	7,255	7,309	7,362	7,416	7,470
Patients on emricasan	362	989	1,573	2,149	2,661	3,003	3,241	3,410	3,508	3,607	3,708	3,810
% penetration	*5.3%*	*14.3%*	*22.5%*	*30.5%*	*37.5%*	*42.0%*	*45.0%*	*47.0%*	*48.0%*	*49.0%*	*50.0%*	*51.0%*
Price/Patient/Week	$4,000	$3,960	$3,920	$3,881	$3,842	$3,804	$3,766	$3,728	$3,691	$3,654	$3,618	$3,581
Price Increase	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)
Weeks of therapy/year	3.3	3.5	3.8	4.0	4.3	4.5	4.8	5.0	5.3	5.3	5.3	5.3
Compliance	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Annual Cost of therapy	$11,700	$12,474	$13,231	$13,972	$14,697	$15,406	$16,099	$16,777	$17,440	$17,265	$17,093	$16,922
Emricasan EU CLF Revenues ($mns)	**$4**	**$12**	**$21**	**$30**	**$39**	**$46**	**$52**	**$57**	**$61**	**$62**	**$63**	**$64**
Growth	*nm*	*nm*	*68.7%*	*44.2%*	*30.3%*	*18.3%*	*12.8%*	*9.6%*	*6.9%*	*1.8%*	*1.8%*	*1.7%*
Total CLF Revenues ($mns)	**$14.7**	**$35.4**	**$65.0**	**$94.2**	**$119.0**	**$141.0**	**$160.6**	**$177.6**	**$189.2**	**$196.4**	**$207.4**	**$215.1**
Growth	*nm*	*nm*	*83.6%*	*45.1%*	*26.2%*	*18.6%*	*13.9%*	*10.5%*	*6.6%*	*3.8%*	*5.6%*	*3.7%*

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #5: What are Potential Sources for Upside; HCV-POLT Opportunity?

Hepatitis C Post-Orthotopic Liver Transplant (HCV-POLT)

- HCV disease typically returns despite liver transplant
  - Cirrhosis & fibrosis can return in as little as two years – can progress at faster rate then initial exposure
  - Current treatment includes re-transplantation & re-treatment with anti-HCV drugs
  - Treatment goal: delay progression to cirrhosis
  - Expect significant unpredictability in this segment given rapid advancements in HCV treatment
    - Believe population will remain robust despite entrance of new DAA drugs into HCV market due to liver supply constraints

- P2b trial expected to commence in 2H13
  - **Trial goal:** P3 enabling study in US; Delay time to cirrhosis – 2 year treatment period
    - Have agreement with EMA that 1pt change in Ishak staging will be sufficient for disease progression labeling claim; halt progression while PBO arm continues to progress
      - Could also validate emricasan's anti-fibrotic potential, potentially supporting use in chronic diseases (eg NASHJ
  - Expect launch in 2017

- ~$180mn peak sales potential – all upside, not included in current valuation
  - Expect similar duration of therapy and pricing as ACLF
  - ~$4k/month; 9 months DOT

- Potential for orphan drug designation in US
  - Unlikely in EU as regulators see potential for broader applicability in fibrosis

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #5: What are Potential Sources for Upside; HCV-POLT Opportunity?

HCV-POLT 2017-2028 Revenue Model

HCV-POLT - US	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
HCV-POLT Prevalent Population	15,315	15,487	15,816	15,990	16,155	16,175	16,056	15,804	15,565	15,339	15,123	14,919
Total Liver Transplants	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805	5,805
% failing to achieve SVR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Liver transplants co-infected with HCV	1161	1161	1016	1016	871	726	581	581	581	581	581	581
% of transplants co-infected with HCV	*20.0%*	*20.0%*	*17.5%*	*17.5%*	*15.0%*	*12.5%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Patient Deaths	989	832	842	850	851	845	832	819	807	796	785	775
Mortality Rate (%)	*6.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Eligible Population	15,487	15,816	15,990	16,155	16,175	16,056	15,804	15,565	15,339	15,123	14,919	14,724
Emricasan Penetration	155	316	480	727	1,092	1,445	1,738	1,868	1,994	2,042	2,238	2,945
Market share (%)	*1.0%*	*2.0%*	*3.0%*	*4.5%*	*6.8%*	*9.0%*	*11.0%*	*12.0%*	*13.0%*	*13.5%*	*15.0%*	*20.0%*
		1.00%	1.00%	1.50%	2.25%	2.25%	2.00%	1.00%	1.00%	0.50%	1.50%	5.00%
Price/Patient/Month	$4,000	$4,080	$4,162	$4,245	$4,330	$4,416	$4,505	$4,595	$4,687	$4,780	$4,876	$4,973
Price Increase	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Months of therapy/year	3.5	5.5	6.5	8.0	8.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Compliance	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Annual Cost of therapy	$11,900	$19,074	$22,993	$28,865	$31,282	$33,785	$34,461	$35,150	$35,853	$36,570	$37,301	$38,047
Emricasan US HCV-POLT Revenues ($mns)	**$2**	**$6**	**$11**	**$21**	**$34**	**$49**	**$60**	**$66**	**$71**	**$75**	**$83**	**$112**
Growth	*nm*	*nm*	*82.8%*	*90.3%*	*62.8%*	*42.9%*	*22.7%*	*9.6%*	*8.9%*	*4.4%*	*11.8%*	*34.2%*

HCV-POLT - EU5	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
HCV-POLT Prevalent Population	14,510	14,673	14,985	15,150	15,307	15,325	15,212	14,974	14,748	14,533	14,329	14,135
Total Liver Transplants	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500
% failing to achieve SVR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Liver transplants co-infected with HCV	1100	1100	963	963	825	688	550	550	550	550	550	550
% of transplants co-infected with HCV	*20.0%*	*20.0%*	*17.5%*	*17.5%*	*15.0%*	*12.5%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Patient Deaths	937	789	797	806	807	801	788	776	765	754	744	734
Mortality Rate (%)	*6.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Eligible Population	14,673	14,985	15,150	15,307	15,325	15,212	14,974	14,748	14,533	14,329	14,135	13,950
Emricasan Penetration	73	187	341	536	805	1,141	1,423	1,549	1,671	1,719	1,908	2,581
Market share (%)	*0.5%*	*1.3%*	*2.3%*	*3.5%*	*5.3%*	*7.5%*	*9.5%*	*10.5%*	*11.5%*	*12.0%*	*13.5%*	*18.5%*
		0.75%	1.00%	1.25%	1.75%	2.25%	2.00%	1.00%	1.00%	0.50%	1.50%	5.00%
Price/Patient/Month	$4,000	$3,960	$3,920	$3,881	$3,842	$3,804	$3,766	$3,728	$3,691	$3,654	$3,618	$3,581
Price Increase	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)	(1.0%)
Months of therapy/year	2.8	4.0	6.0	7.8	8.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Compliance	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Annual Cost of therapy	$9,350	$13,464	$19,994	$25,567	$26,128	$27,484	$27,209	$26,937	$26,667	$26,401	$26,137	$25,875
Emricasan EU HCV-POLT Revenues ($mns)	**$1**	**$3**	**$7**	**$14**	**$21**	**$31**	**$39**	**$42**	**$45**	**$45**	**$50**	**$67**
Growth	*nm*	*nm*	*170.2%*	*101.0%*	*53.5%*	*49.2%*	*23.4%*	*7.8%*	*6.8%*	*1.9%*	*9.9%*	*33.9%*
Total HCV-POLT Revenues ($mns)	**$2.5**	**$8.6**	**$17.8**	**$34.7**	**$55.2**	**$80.2**	**$98.6**	**$107.4**	**$116.1**	**$120.1**	**$133.3**	**$178.8**
Growth	*nm*	*nm*	*108.6%*	*94.4%*	*59.1%*	*45.3%*	*23.0%*	*8.9%*	*8.1%*	*3.4%*	*11.1%*	*34.1%*

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #5: What are Potential Sources for Upside; Other Indications?

Expansion to other liver disease indications with greater duration of therapy

- Non-Alcoholic Steatohepatitis (NASH) – est. patient population of ~1.5mn
- Alcoholic Liver Disease (ALD) – est. patient population of >4mn
- HCV Treatment Failures – est. patient population of ~1.5mn

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Our Thoughts on Key Issues

Question #6: Is there any competition?

- **No direct competition to emricsan in initial three lead indications**
  - Focus on smaller indications should allow for faster time to market
  - Expect orphan designation in ACLF – we believe Conatus will wait for P2B data prior to filing

Company	Drug	Indication/Status	Endpoints
Caspase Programs			
Gilead	GS-9450	HCV/Discontinued due to drug induced liver disease	Trials focused on safety parameters, changes in ALT/AST, CK-18 caspase cleavage fragment levels & apoptotic cells
Acute Liver Failure			
Alfact Innovation	ALF-5755	Nonacetaminophen severe acute hepatitis & early stage acute liver failure/no development update since 2011	Change in prothrombin rate, ALT, AST
Digna Biotech	Cardiotrophin-1	Acute liver failure/Phase I	Safety; PK/PD
Vital Therapies	Elad system	Fulminant hepatic failure & acute alcoholic hepatitis/Phase II	Survival
Liver Fibrosis			
Fibrogen/Medarex	FG-3019	Liver fibrosis due to HBV/Phase II	Efficacy/Safety
Gilead	simtuzumab	Idiopathic pulmonary fibrosis (IPF) & liver fibrosis/Phase II	Safety; antibody formation; PK/PD
GSK	Farglitazar	HCV/Discontinued due to lack of antifibrotic activity	Change in liver fibrosis
Chronic Liver Disease			
Ocera Therapeutics	OCR-002	Acute liver failure due to acetominophen; cirrhosis and upper GI bleeding/Phase II	Safety; change in venous ammonia, neurological function; hepatic encephalopathy

Similar endpoints to Conatus

Source: StreetAccount Drug Database; Piper Jaffary

Conatus Pharmaceuticals (CNAT): Milestone Table

Program	Disorder	Type	Event	Expected Timing
Emricasan	Acute on Chronic Liver Failure (ACLF)	Clinical Data	Phase IIb data from dose-ranging trial: n=60, 4-arm dose ranging trial evaluating 5mg BID, 25mg BID, 50mg BID vs. PBO for 28 days; follow up to 6 months; key endpoints: dose selection; change in biomarkers including cCK18	Mid-2014
		Clinical Data	Phase III data from ACLF survival trial: n=390; emricasan 25mg BID for 1 month followed by 25mg BID or PBO through Month 6 vs. PBO; follow up to Month 12; key endpoints: changes in clinical worsening at Day 28 including first occurrence of all-cause transplant free mortality or progression to multi-organ failure; changes in biomarkers including cCK18	Late 2016
		Regulatory	File for US & EU regulatory approval	1H 2017
		Regulatory	US & EU regulatory approval	2H 2017
	Chronic Liver Failure (CLF)	Clinical Data	Phase IIB data from liver stabilization trial: n=90, emricasan vs. PBO, dose TBD; follow up to 3 months; key endpoints: time to clinical worsening; change in biomarkers including cCK18	Late-2015
		Regulatory	File for US & EU regulatory approval	1H 2016
		Regulatory	US & EU regulatory approval	2H 2016
	HCV Recurrence Post Transplant (HCV-POLT)	Regulatory	Public Workshop on the Trial Design and Endpoints for Liver Disease Secondary to Nonalcoholic Fatty Liver Disease (NAFLD)	Sept. 5-6, 2013
		Clinical Data	Phase III data: n=260; 25mg BID vs. PBO for 2 years with follow up through Year 3; key endpoints: change from baseline in Ishak Histological Activity Index; changes in biomarkers including cCK18	Mid-2017
		Regulatory	File for US & EU regulatory approval	1H 2018
		Regulatory	US & EU regulatory approval	2H 2018

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): Pipeline

Product	Indication	Preclin	I	II	III	Reg	Launch	Est. Peak Yr. Rev.	Partners	Competitors	Comments
Emricasan	Acute on Chronic Liver Failure (ACLF)						2017	$700mn			Oral caspase protease inhibitor in development for treatment of liver disease
	Chronic Liver Failure (CLF)						2017	$215mn			
	Hepatitis C Post-Orthotopic Liver Transplant (HCV-POLT)						2017	$180mn			

Source: Piper Jaffray

Conatus Pharmaceuticals (CNAT): Patent Estate

Polymorph Composition & Method

- Expires 2028 (US) & 2027 (Int'l)
- US Patent number: 7,692,038B2
- All known polymorphs (2) & 1 amorphous form have been identified and are covered
  - Prevents development of crystalline form – a common workaround to polymorph patents

Composition of Matter

- Expires 2018 (US) & 2017 (Int'l)
- Issued worldwide
- US Patent numbers: 6,197,750B1, 6,544,951B2, 7,053,056B2
  - Hatch-Waxman could extend to 2022

Method of Use

- Expires 2018 (US) & 2018 (Int'l)
- US Patent number: 7,183,260B2

Orphan Designation Update

- No EMA orphan designation in POLT – agency sees utility of emricasan in larger markets (e.g. NASH)
- Filed in US: decision on POLT pending – expected early-mid September
- POLT decision does not impact ACLF in US or EU

SUPPLEMENTAL INFORMATION

Conatus Pharmaceuticals (CNAT): Caspase Inhibition Overview

- Caspases are intracellular enzymes believed to be central mediators of cell apoptosis (programmed cell death)
- Divided into two categories: 1) initiators – activate effectors; 2) effectors – responsible for cell death
  - Selectively cleave structural proteins including those involved in DNA repair & signaling
- Caspase inhibition associated with prevention of cell death (apoptosis)

Human Caspases, Activation & Function

Caspase	IC_{50}(nM)*	Activation mechanism	Functions
Initiators:			
Capase-2	20.0	ER stress	Activate executioner caspases
Caspase-8	0.2	Receptor mediated	Death receptor signaling, cell proliferation and non-enzymatic functions
Caspase-10	1.4	Receptor mediated	Death receptor signaling
Caspase-9	0.3	Cytochrome c / apoptosome	Caspase 3/7 activation – post-mitochondrial stress
Executioners:			
Caspase-3	2.0	Caspase-8 and 9	Cleavage of cellular substrates
Caspase-6	4.0	Caspase-3 and 7	Cleavage of cellular substrates
Caspase-7	0.2	Caspase-8 and 9	Cleavage of cellular substrates
Cytokine Activators:			
Caspase-1	0.4	Inflammasome complex	IL-1β and IL-18 maturation
Caspase-4	0.06	Inflammasome complex	IL-1β and IL-18 maturation
Caspase-5	0.01	Inflammasome complex	IL-1β and IL-18 maturation
* k3/Ki ($M^{-1}s^{-1}$): 10^7 - 10^3			

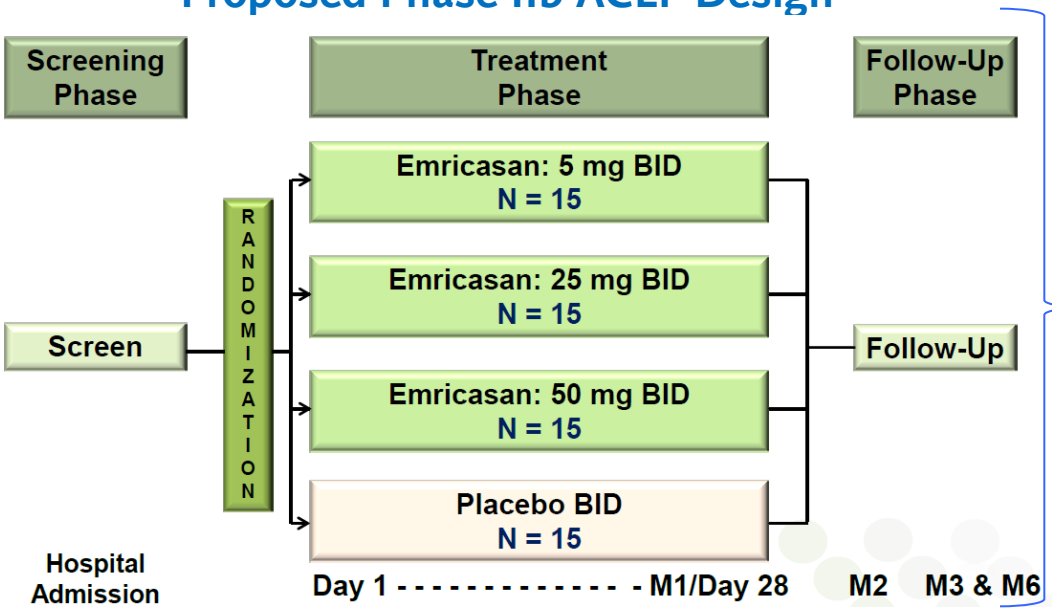
Apoptosis driven primarily by caspases 3 & 7

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): ACLF Phase IIb Trial Design

- Phase IIb dose ranging study to commence 2H13 (n=60)
- Endpoints:
  - Confirmation of dose – will be used in both ACFL & CLF
  - Time to occurrence of liver transplant, progression to next organ failure or death
  - Assessment of changes in ALT & cCK18
  - Expect tumor rate in low single digits in PBO arm (on percentage basis)
    - CT scan not being used due to concern for use of contrast dye in patient population
      - Renal compromised, pre-cirrhotic (F2-F4 on Ishak Fibrosis scale)
      - Concurrently screening for tumor markers: alpha-fetoprotein (AFP) & CA19-9

Proposed Phase IIb ACLF Design



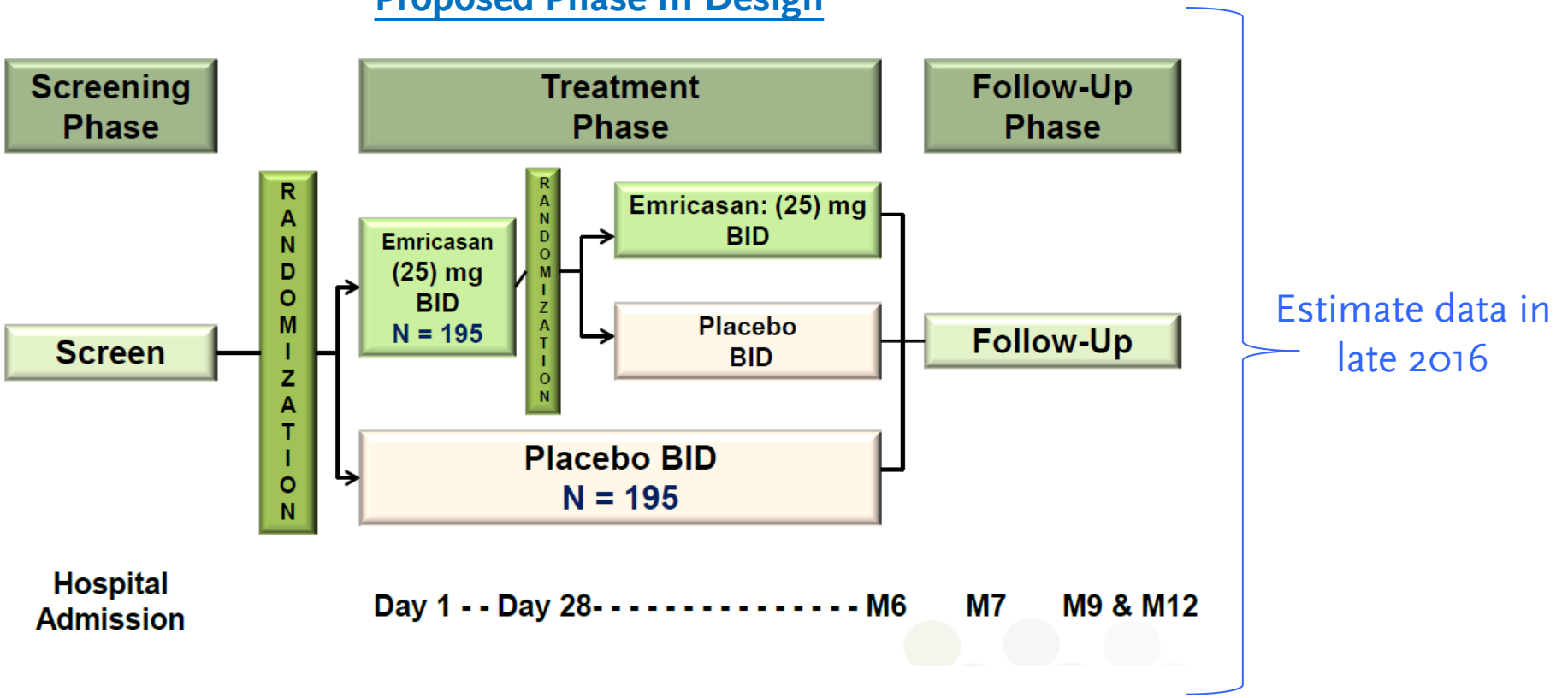
Data expected mid-2014

Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): ACLF Phase III Trial Design

- **Phase III trial to focus on time to clinical worsening**
  - Time to clinical worsening (transplant, death, next-organ failure) following 28 days of treatment
  - Changes in biomarkers, MELD score (measures severity of chronic liver disease)
  - Expected to commence mid-2015

Proposed Phase III Design

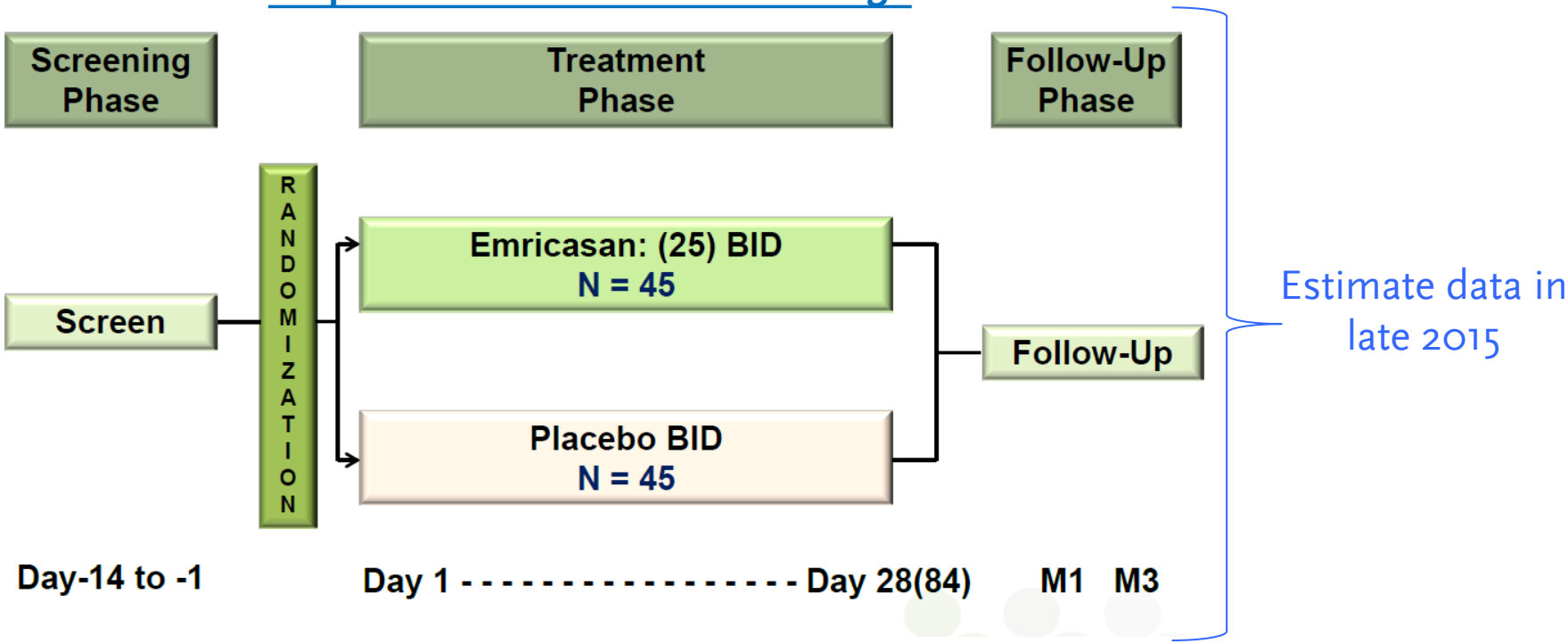


Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): CLF Trial Design

- Phase IIb(n=90) trial to commence 2H14 – assess time to clinical worsening
  - ACLF dose ranging trial to support dose selection in CLF
- Endpoints:
  - Time to clinical worsening
  - Assessment of changes in ALT, AST & cCK18

Proposed CLF Phase IIb Trial Design

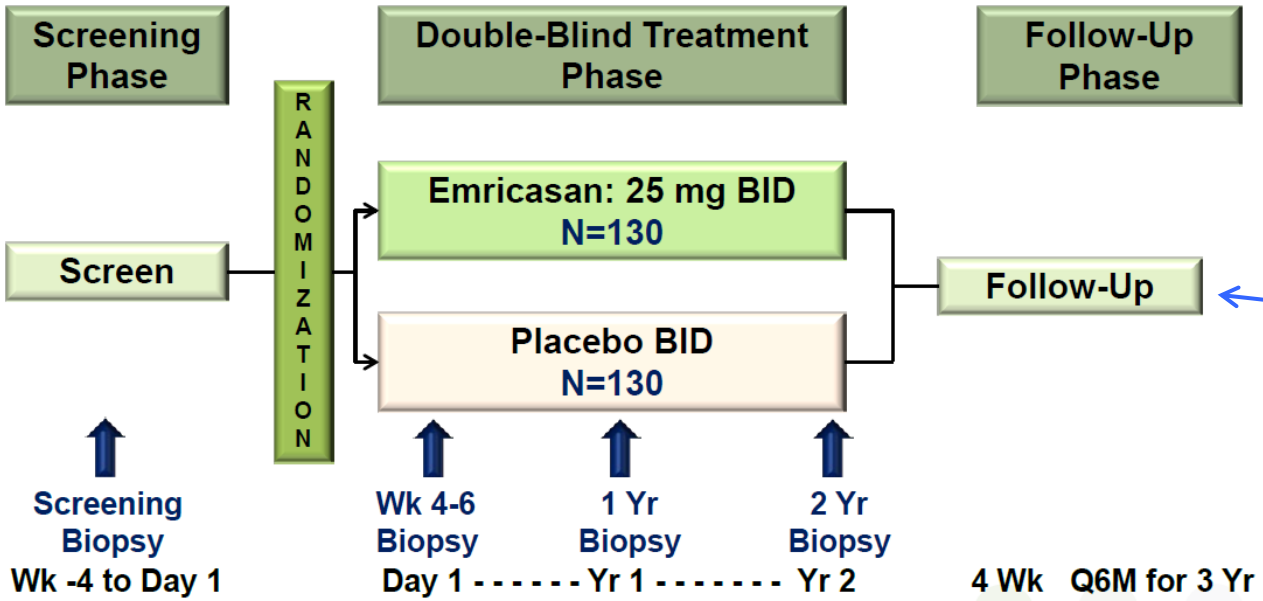


Source: Company Reports & Piper Jaffray

Conatus Pharmaceuticals (CNAT): HCV-POLT Trial Design

- **Phase IIb (n=260) trial to commence 2H13 – treatment goal stabilize or slow progression of liver fibrosis – reduce percent of patients expected to advance ≥1 Ishak stage from 55% to 30%**
  - Trial is Phase III in EU
  - Endpoints:
    - Liver histology via Ishak Fibrosis Score (measures fibrosis on 0-6 scale)
    - Assessment of changes in ALT, AST & cCK18

Proposed HCV-POLT Phase II/III Trial Design



Stopping progression of fibrosis could support label expansion into other indications e.g. NASH

Source: Company Reports & Piper Jaffray

($ in thousands, except per share amounts)

Conatus Pharmaceuticals Earnings Model	2012A	1Q 13A	2Q 13E	3Q 13E	4Q 13E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	'16E-'20E CAGR
($ in 000s, except per share amounts)														
US Emricasan Sales	0	0	0	0	0	0	0	0	0	13,566	47,192	84,593	132,706	
Ex-US Emricasan Sales	0	0	0	0	0	0	0	0	0	4,607	16,643	40,597	66,030	
Total Product Sales	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,174**	**63,835**	**125,190**	**198,736**	
Other Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Revenues	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18,174**	**63,835**	**125,190**	**198,736**	
Costs & Expenses:														
Cost of Goods Sold	0	0	0	0	0	0	0	0	0	3,907	13,405	25,664	39,747	
R&D	5,528	968	1,161	1,742	3,049	6,920	20,759	23,873	28,647	38,674	50,276	62,845	69,129	**25%**
SG&A	3,086	749	824	1,030	1,287	3,889	6,806	10,209	19,397	27,155	32,586	37,474	41,971	**21%**
Total Operating Expenses	8,615	1,717	1,985	2,772	4,335	10,809	27,565	34,081	48,044	69,736	96,268	125,983	150,848	**33%**
Operating Income	**(8,614.6)**	**(1,717)**	**(1,985)**	**(2,772)**	**(4,335)**	**(10,809)**	**(27,565)**	**(34,081)**	**(48,044)**	**(51,563)**	**(32,433)**	**(793)**	**47,888**	
Interest Income	26	0	24	16	361	402	1,381	961	3,154	2,328	1,392	782	724	**-31%**
Interest Expense	(70)	(18)	0	0	0	(18)	0	0	0	0	0	0	0	
Other income (expense), net	(90)	(563)	0	0	0	(563)	0	0	0	0	0	0	0	
Pretax Income (Loss)	**(8,749)**	**(2,297)**	**(1,961)**	**(2,756)**	**(3,974)**	**(10,987)**	**(26,184)**	**(33,120)**	**(44,890)**	**(49,235)**	**(31,041)**	**(11)**	**48,612**	
Provision for (benefit from) income taxes	0	0	0	0	0	0	0	0	0	0	(1,552)	(2)	12,153	
Tax Rate	0%	0%	0%	0%	0%	0%	0.0%	0.0%	0.0%	0.0%	5.0%	15.0%	25.0%	
Other	92	547	0	0	0	547	0	0	0	0	0	0	0	
Net Income (Loss) GAAP	**(8,658)**	**(1,750)**	**(1,961)**	**(2,756)**	**(3,974)**	**(10,440)**	**(26,184)**	**(33,120)**	**(44,890)**	**(49,235)**	**(29,489)**	**(9)**	**36,459**	
Stock option expense, tax adjusted	144	21	25	25	25	96	99	101	104	106	111	109	106	
Other	90	563	0	0	0	563	0	0	0	0	0	0	0	
Net Income (Loss) Non-GAAP	**(8,423)**	**(1,165)**	**(1,936)**	**(2,731)**	**(3,949)**	**(9,781)**	**(26,085)**	**(33,019)**	**(44,786)**	**(49,128)**	**(29,378)**	**100**	**36,566**	
Diluted Earnings Per Share Non-GAAP	**($0.91)**	**($0.13)**	**($0.20)**	**($0.17)**	**($0.24)**	**($0.75)**	**($1.55)**	**($1.22)**	**($1.61)**	**($1.72)**	**($1.01)**	**$0.00**	**$1.22**	
Earnings Per Share, Diluted Fully Taxed						nm	nm	nm	nm	nm	nm	$0.00	$1.06	
Basic Earnings Per Share Non-GAAP	($0.91)	($0.13)	($0.20)	($0.17)	($0.24)	($0.75)	($1.55)	($1.22)	($1.63)	($1.76)	($1.04)	$0.00	$1.25	
Diluted Earnings Per Share GAAP	**($0.94)**	**($0.19)**	**($0.20)**	**($0.17)**	**($0.24)**	**($0.80)**	**($1.56)**	**($1.22)**	**($1.61)**	**($1.73)**	**($1.01)**	**($0.00)**	**$1.22**	
Basic Earnings Per Share GAAP	($0.94)	($0.19)	($0.20)	($0.17)	($0.24)	($0.80)	($1.56)	($1.22)	($1.63)	($1.77)	($1.04)	($0.00)	$1.25	
Diluted Shares Outstanding (000s)	**9,255**	9,299	9,575	16,475	16,574	**12,981**	**16,823**	**27,159**	**27,838**	**28,534**	**29,105**	**29,541**	**29,984**	**2%**
Basic Shares Outstanding (000s)	9,255	9,299	9,575	16,475	16,574	12,981	16,823	27,075	27,481	27,893	28,312	28,736	29,167	2%
Margin Analysis														
Gross product margin (% of Rev.)									78.0%	78.5%	79.0%	79.5%	80.0%	
R&D (% of Rev.)	nm	nm	nm	nm	nm	nm	nm	nm	#DIV/0!	213%	79%	50%	35%	
SG&A (% of Rev.)	nm	nm	nm	nm	nm	nm	nm	nm	#DIV/0!	149%	51%	30%	21%	
Operating margin	nm	nm	nm	nm	nm	nm	nm	nm	#DIV/0!	nm	nm	nm	24%	
Pre-tax income (% of Rev.)	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	24%	
Net income Non-GAAP (% of Rev.)	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	18%	
Growth % y/y														
Product sales		nm	nm	nm	nm	nm	nm	nm	nm	#DIV/0!	251%	96%	59%	
Total revenue		**nm**	**nm**	**nm**	**nm**	**nm**	**nm**	**nm**	**nm**	**#DIV/0!**	**251%**	**96%**	**59%**	
R&D		nm	nm	nm	nm	25.2%	200.0%	15.0%	20.0%	35.0%	30.0%	25.0%	10.0%	
SG&A		nm	nm	nm	nm	26.0%	75.0%	50.0%	90.0%	40.0%	20.0%	15.0%	12.0%	
Pre-tax income		nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	
Net Income Non-GAAP		nm	nm	nm	nm									
EPS, diluted Non-GAAP		nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	35928%	
Growth % q/q														
Total revenue	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	91%	55%	
R&D	nm	nm	20.0%	50.0%	75.0%	25%	200%	15%	20%	35%	30%	25%	10%	
SG&A	nm	nm	10.0%	25.0%	25.0%	26%	75%	50%	90%	40%	20%	15%	12%	
Pre-tax income	nm	nm	-14.6%	40.5%	44.2%	26%	138%	26%	36%	10%	-37%	-100%	-436564%	
Net Income Non-GAAP	nm	nm	66.1%	41.1%	44.6%									
EPS, diluted Non-GAAP	nm	nm	61.3%	-18.0%	43.8%	nm	nm	nm	nm	nm	nm	nm	nm	

CNAT: Ian Somaiya; 212.284.9305

Conatus Pharmaceuticals Balance Sheet ($ in 000s)	2012A	1Q 13A	2Q 13E	3Q 13E	4Q 13E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Current assets:													
Cash and cash equivalents	4,036	4,840	3,209	72,282	69,049	69,049	48,073	157,685	116,390	69,596	39,096	36,215	69,475
Short Term Investments	3,989	255	255	255	255	255	255	255	255	255	255	255	255
Accounts receivables	0	0	0	0	0	0	0	0	0	1,454	5,107	10,015	11,924
Inventories	0	0	0	0	0	0	0	0	0	909	3,192	6,260	7,949
Prepaid expenses and other current assets	76	83	0	0	0	0	0	0	0	727	2,553	5,008	7,949
Total current assets	**8,102**	**5,179**	**3,464**	**72,537**	**69,304**	**69,304**	**48,328**	**157,940**	**116,645**	**72,941**	**50,203**	**57,752**	**97,553**
Property and equipment, net	30	27	27	26	26	26	25	23	22	21	20	19	18
Developed Technology, net	0	0	0	0	0	0	0	0	0	0	0	0	0
Goodwill	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Assets	14	40	40	40	40	40	40	40	40	40	40	40	40
Total assets	**8,146**	**5,246**	**3,531**	**72,604**	**69,370**	**69,370**	**48,393**	**158,003**	**116,707**	**73,002**	**50,263**	**57,811**	**97,612**
Current liabilities:													
Accounts payable & accrued expenses	1,087	390	555	971	1,621	1,621	2,756	3,408	4,804	6,974	9,627	12,598	12,068
Accrued compensation	326	351	351	351	351	351	351	351	351	351	351	351	351
Accrued expenses and other current liabilities	0	0	19	32	54	54	2,756	3,408	4,804	6,974	9,627	12,598	15,085
Current portion of notes payable net of debt discount	0	0	0	0	0	0	0	0	0	0	0	0	0
Total current liabilities	**1,413**	**741**	**924**	**1,354**	**2,026**	**2,026**	**5,864**	**7,167**	**9,959**	**14,298**	**19,604**	**25,547**	**27,503**
Preferred stock warrant liability	160	708	708	708	708	708	708	708	708	708	708	708	708
Long-term portion of notes payable	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Other liabilities	0	0	37	65	108	108	1,378	1,704	2,402	3,487	4,813	6,299	7,542
Total liabilities	**2,573**	**2,448**	**2,669**	**3,126**	**3,842**	**3,842**	**8,949**	**10,579**	**14,069**	**19,492**	**26,125**	**33,554**	**36,753**
Stockholders' equity:													
Convertible Preferred Stock	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908	63,908
Preferred stock	0	0	0	0	0	0	0	0	0	0	0	0	0
Common stock	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Additional paid in capital	471	0	0	71,346	71,346	71,346	71,346	212,346	212,346	212,346	212,346	212,346	212,346
Accumulated other comprehensive gain	1	0	0	0	0	0	0	0	0	0	0	0	0
Retained Earnings	(58,808)	(61,111)	(63,047)	(65,777)	(69,726)	(69,726)	(95,811)	(128,830)	(173,616)	(222,745)	(252,116)	(251,997)	(215,396)
Total stockholders' equity	**(58,336)**	**(61,111)**	**(63,046)**	**5,569**	**1,620**	**1,620**	**(24,465)**	**83,516**	**38,730**	**(10,399)**	**(39,770)**	**(39,651)**	**(3,050)**
Total liabilities and stockholders' equity	**8,146**	**5,246**	**3,531**	**72,604**	**69,370**	**69,370**	**48,393**	**158,003**	**116,707**	**73,002**	**50,263**	**57,811**	**97,612**

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Conatus Pharmaceuticals Statement of Cash Flows	2012A	1Q 13A	2Q 13E	3Q 13E	4Q 13E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
($ in 000s)													
Net Income (Loss)	(8,749)	(2,297)	(1,961)	(2,756)	(3,974)	(10,987)	(26,184)	(33,120)	(44,890)	(49,235)	(29,489)	(9)	36,459
Adjustments													
Depreciation and amortization	9	3	0	0	0	4	1	1	1	1	1	1	1
Acquired in-process R&D	0	0	0	0	0	0	0	0	0	0	0	0	
Stock based compensation	144	21	25	25	25	96	99	101	104	106	117	129	142
Non-cash financing costs	92	547	0	0	0								
Other	172	9	0	0	0	9	0	0	0	0	0	0	0
Change in assets and liabilities:													
Account receivables	0	0	0	0	0	0	0	0	0	(1,454)	(3,653)	(4,908)	(1,909)
Inventories	0	0	0	0	0	0	0	0	0	(909)	(2,283)	(3,068)	(1,690)
Prepaid expenses & other assets	89	(7)	83	0	0	76	0	0	0	(727)	(1,826)	(2,454)	(2,942)
Other Assets	0	(26)	0	0	0	(26)	0	0	0	0	0	0	(530)
Accounts payable	(92)	(697)	165	416	650	534	1,135	652	1,396	2,169	2,653	2,972	
Accrued and other current liabilities	(229)	15	56	42	65	178	3,973	978	2,094	3,254	3,980	4,457	3,730
Deferred Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0
Net cash provided by (used in) operating activities	**(8,564)**	**(2,431)**	**(1,632)**	**(2,273)**	**(3,233)**	**(10,116)**	**(20,976)**	**(31,388)**	**(41,295)**	**(46,794)**	**(30,500)**	**(2,881)**	**33,260**
CASH FLOWS FROM INVESTING ACTIVITIES													
Purchases of property and equipment	(18)	0	0	0	0	0	0	0	0	0	0	0	0
Purchase of investments	(10,309)	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from maturities of investments	19,838	3,725	0	0	0	3,725	0	0	0	0	0	0	0
Cash paid to acquire in-process R&D	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Net cash used in investing activities	**9,511**	**3,725**	**0**	**0**	**0**	**3,725**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CASH FLOWS FROM FINANCING ACTIVITIES													
Proceeds from issuance of common stock, net	16	11	0	71,346	0	71,357	0	141,000	0	0	0	0	0
Proceeds (payments) of investments	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds (payments) from notes payable	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from issuance of convertible preferred stock, net	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from issuance of convertible notes	0	0	0	0	0	0	0	0	0	0	0	0	0
Proceeds from exercise of stock options	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	(500)	0	0	0	(500)	0	0	0	0	0	0	0
Net cash provided by financing activities	**16**	**(489)**	**0**	**71,346**	**0**	**70,857**	**0**	**141,000**	**0**	**0**	**0**	**0**	**0**
Effect of exchange rate on cash	0	0	0	0	0	0	0	0	0	0	0	0	0
Net increase in cash and cash equivalents	963	804	(1,632)	69,073	(3,233)	64,465	(20,976)	109,612	(41,295)	(46,794)	(30,500)	(2,881)	33,260
Cash and cash equivalents at beginning of period	3,073	4,036	4,840	3,209	72,282	4,036	69,049	48,073	157,685	116,390	69,596	39,096	36,215
Cash and cash equivalents at end of period	**4,036**	**4,840**	**3,209**	**72,282**	**69,049**	**68,501**	**48,073**	**157,685**	**116,390**	**69,596**	**39,096**	**36,215**	**69,475**

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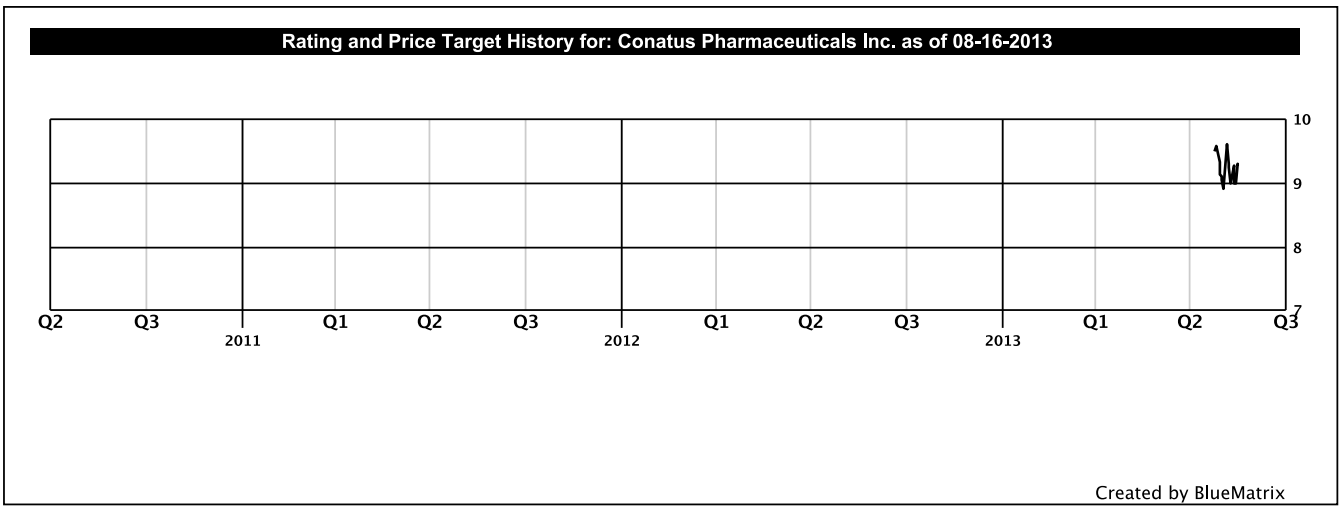
IMPORTANT RESEARCH DISCLOSURES



Notes: The boxes on the Rating and Price Target History chart above indicate the date of the Research Note, the rating, and the price target. Each box represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first Note written during the past three years.

Legend:
I: Initiating Coverage
R: Resuming Coverage
T: Transferring Coverage
D: Discontinuing Coverage
S: Suspending Coverage
OW: Overweight
N: Neutral
UW: Underweight
NA: Not Available
UR: Under Review

Distribution of Ratings/IB Services
Piper Jaffray

			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OW]	341	57.12	68	19.94
HOLD [N]	226	37.86	15	6.64
SELL [UW]	30	5.03	0	0.00

Note: Distribution of Ratings/IB Services shows the number of companies currently in each rating category from which Piper Jaffray and its affiliates received compensation for investment banking services within the past 12 months. FINRA rules require disclosure of which ratings most closely correspond with "buy," "hold," and "sell" recommendations. Piper Jaffray ratings are not the equivalent of buy, hold or sell, but instead represent recommended relative weightings. Nevertheless, Overweight corresponds most closely with buy, Neutral with hold and Underweight with sell. See Stock Rating definitions below.

Analyst Certification — M Ian Somaiya, Sr. Research Analyst
— Matthew W. Luchini, Research Analyst
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