

Onconova Therapeutics, Inc. (ONTX)

Overweight

ASH KOL Diligence & Data Bode Well for Rigo' in MDS

CONCLUSION

Onconova presented updated data for transfusion independence for lower-risk MDS patients dosed with 8+ weeks of rigosertib. The poster provides data on 36 patients and we note transfusion independence is still high, at 14/36 (39%) of patients. Two patients remained independent for over a year and 5 remain independent (2 for over 6-months). Additionally, a genomic-methylation investigation of 32 samples indicates a clear profile of patients achieving CR and/or PR vs. those with a no response (NR) or normal subjects. Most importantly, the urinary side effects from Rigo' appear largely addressable through dosing schedule modifications. As the study has enrolled 51 patients at intermediate dosing, we look forward to future updates and additional studies in this setting.

- **2014 outlook.** Based on the ASH data and favorable KOL commentary on unmet need and Rigo' safety/efficacy profile, we now anticipate that the company will discuss data with FDA by mid '14 to determine a path forward in low risk MDS. Finally, we continue to look forward to the Phase 3 data in hi-risk MDS, while keeping the forthcoming pancreatic data in the "show me" category, and rate Onconova Overweight with a \$38 price target.
- **Dosing schedule enables convenient use.** Onconova presented data illustrating the impact of going from 560mg BID for 2 of a 3 week cycle (3rd week off) to 560mg AM / 280mg PM (2 of 3 weeks), and the effect on urinary adverse events is meaningful, in our view. The rate of grade 2 urinary AEs went from 43% (15/35) to 8% (1/15) and of grade 3 from 11% (4/35) to zero. This appears to address the major tolerability concern for rigosertib and should assist in conduct of future studies, we believe.
- **Methylation signature may provide for a companion diagnostic.** The company also presented data of an investigation looking to discern responders from non-responders (NRs) to rigosertib. As mentioned above a clear profile has emerged and includes mainly transcription-involved genes, but also genes involved in inflammation, apoptosis, and proliferation. A cohort of 20 patients is now being enrolled to confirm the signature and further its development.
- **Transfusion independence appears robust, possible subgroups of note.** While the numbers are still small, rigosertib appears to function best in patients that have had at least one prior dose of ESA, as the transfusion independence (TI) rate was 41% (15/37) in this subgroup vs. 14% (1/7) in the no prior ESA group.

RISKS TO ACHIEVEMENT OF PRICE TARGET

Principal risks include 1) failure of rigosertib to differentiate itself in clinical trials, 2) delay of rigosertib in reaching the market, 3) increased competition from similar drugs in development, including Celgene's oral Vidaza and Astex Pharmaceuticals' SGI-110.

COMPANY DESCRIPTION

Onconova focuses on cancer and radiation injury therapies

YEAR	REVENUE (US\$ m)						EARNINGS PER SHARE (US\$)					
	Mar	Jun	Sep	Dec	FY	FY RM	Mar	Jun	Sep	Dec	FY	FY P/E
2012A	—	—	—	—	46.2	7.3x	—	—	—	—	(15.35)	NM
2013E	1.1A	0.6A	1.1A	1.0	3.8	88.8x	(5.69)A	(4.81)A	(1.33)A	(1.02)	(6.63)	NM
2014E	—	—	—	—	104.0	3.2x	—	—	—	—	1.30	12.5x

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Onconova Therapeutics, Inc.

PRICE: US\$16.22

TARGET: US\$38.00

DCF of projected free cash flows for 2015-2026, with a 10% discount rate

Charles C. Duncan, PhD

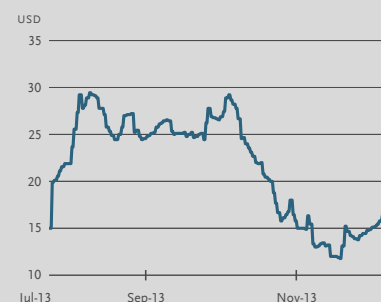
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Changes	Previous	Current
Rating	—	Overweight
Price Tgt	—	US\$38.00
FY13E Rev (mil)	—	US\$3.8
FY14E Rev (mil)	—	US\$104.0
FY13E EPS	—	US\$(6.63)
FY14E EPS	—	US\$1.30
52-Week High / Low	US\$31.13 / US\$11.73	
Shares Out (mil)	20.8	
Market Cap. (mil)	US\$337.4	
Avg Daily Vol (ooo)	230	
Book Value/Share	US\$0.85	
Net Cash Per Share	US\$3.33	
Debt to Total Capital	0%	
Yield	0.00%	
Fiscal Year End	Dec	

Price Performance - 1 Year

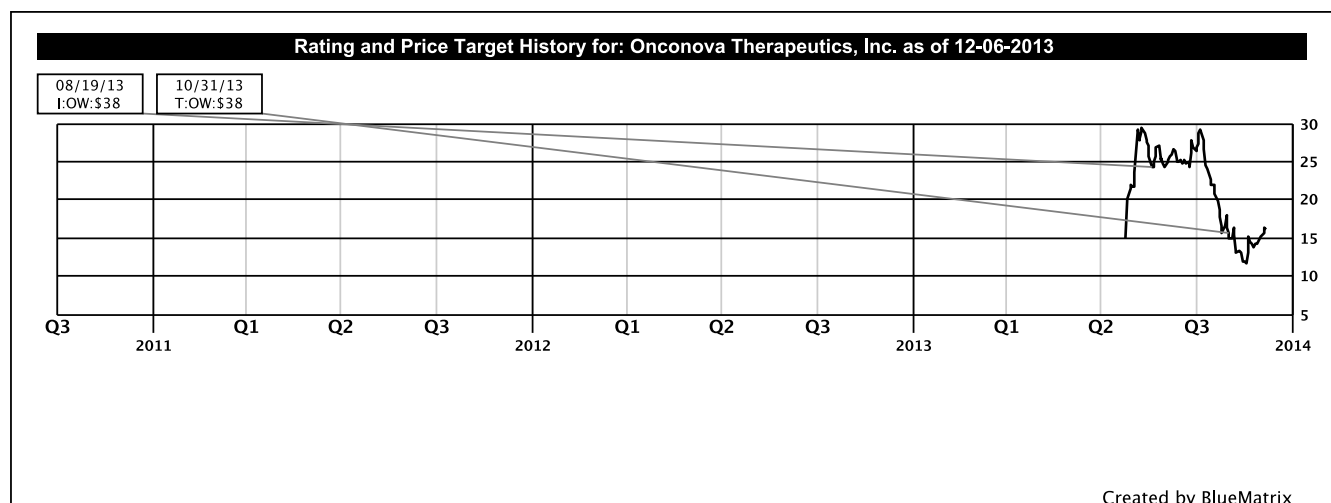


Source: Bloomberg

Onconova Earnings Model	2012A	1Q 13A	2Q 13A	3Q 13A	4Q 13E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
(\$ in thousands, except per share amounts)																			
US Rigosertib Sales		0	0	0	0	0	0	21,930	82,400	152,317	228,856	311,675	390,362	452,161	522,121	581,562	632,689	670,246	709,534
Int'l Rigosertib Sales		0	0	0	0	0	0	0	55,587	127,572	187,431	239,444	321,632	369,073	426,819	473,666	515,704	560,140	598,755
Total Rigosertib Sales		0	0	0	0	0	0	21,930	137,987	279,889	416,287	551,119	711,994	821,234	948,939	1,055,228	1,148,393	1,230,386	1,308,289
US Rigosertib Sales		0	0	0	0	0	0	21,930	82,400	152,317	228,856	311,675	390,362	452,161	522,121	581,562	632,689	670,246	709,534
Ex-US Royalty		0	0	0	0	0	0	0	7,782	22,963	37,486	52,678	77,192	95,959	110,973	123,153	134,083	145,636	155,676
License and milestone revenues		0	0	0	0	0	100,000	100,000	50,000	50,000	100,000	0	0	0	0	0	0	0	0
Collaboration R&D revenues		1,116	591	1,116	1,000	3,823	4,000	4,000	4,000	3,000	0	0	0	0	0	0	0	0	0
Total Revenues	46,190	1,116	591	1,116	1,000	3,823	104,000	125,930	144,182	228,280	366,342	364,353	467,553	548,120	633,094	704,715	766,772	815,883	865,210
Costs & Expenses:																			
Cost of Goods Sold	0	0	0	0	0	0	0	2,193	14,008	25,894	37,761	49,868	62,458	67,824	78,318	87,234	94,903	100,537	106,430
R&D	52,762	12,756	10,047	15,293	16,058	54,154	61,852	80,408	92,469	101,716	110,361	115,880	121,673	127,757	134,145	140,852	147,895	155,290	163,054
SG&A	15,707	3,346	3,117	5,927	6,046	18,436	15,170	32,980	46,171	55,406	63,716	71,362	78,499	84,778	89,865	94,358	99,076	104,030	109,232
Total Operating Expenses	68,469	16,102	13,164	21,220	22,103	72,589	77,022	115,580	152,648	183,015	211,839	237,110	262,630	280,360	302,328	322,445	341,875	359,857	378,716
Operating Income	(22,279)	(14,986)	(12,573)	(20,104)	(21,103)	(68,766)	26,978	10,350	(8,466)	45,265	154,503	127,243	204,923	267,760	330,765	382,270	424,897	456,026	486,494
Interest and Other Income (Expense), net	(7,633)	141	11	15	175	342	681	983	1,407	1,317	1,687	2,894	3,834	5,314	7,137	9,361	11,897	14,733	17,800
Interest Income	0	0	101	0	175	276	681	983	1,407	1,317	1,687	2,894	3,834	5,314	7,137	9,361	11,897	14,733	17,800
Interest Expense	(8,608)	0	0	(1)	0	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Income (Expense)	975	141	0	16	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0
Pretax Income (Loss)	(29,912)	(14,845)	(12,562)	(20,089)	(20,928)	(68,424)	27,659	11,333	(7,059)	46,581	156,190	130,136	208,757	273,074	337,902	391,631	436,794	470,759	504,294
Income Expense (Benefit)	0	0	0	432	0	0	0	567	(529)	6,987	31,238	32,534	62,627	95,576	118,266	137,071	152,878	164,766	176,503
Tax Rate	0.0%	0.0%	0.0%	-2.2%	0.0%	0.0%	0.0%	5.0%	7.5%	15.0%	20.0%	25.0%	30.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Other (Accr of preferred stock)	(3,953)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income (Loss) GAAP	(33,865)	(14,845)	(12,562)	(20,521)	(20,928)	(68,424)	27,659	10,766	(6,529)	39,594	124,952	97,602	146,130	177,498	219,636	254,560	283,916	305,993	327,791
Stock option expense	0	600	(1,032)	613	600	781	2,640	2,759	2,955	2,987	3,092	3,189	3,274	3,344	3,678	4,046	4,451	4,896	5,386
Other	2,978	(141)	0	(16)	0	(157)	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income (Loss) Non-GAAP	(30,887)	(14,386)	(13,594)	(19,924)	(20,328)	(67,800)	30,299	13,525	(3,574)	42,581	128,044	100,791	149,404	177,498	219,636	254,560	283,916	305,993	327,791
Diluted Earnings Per Share Non-GAAP	(\$14.00)	(\$5.52)	(\$5.21)	(\$1.29)	(\$0.99)	(\$6.56)	\$1.43	\$0.61	(\$0.15)	\$1.73	\$4.96	\$3.72	\$5.25	\$5.94	\$7.00	\$7.73	\$8.21	\$8.43	\$8.60
Basic Earnings Per Share Non-GAAP	(\$14.00)	(\$5.52)	(\$5.21)	(\$1.29)	(\$0.99)	(\$6.56)	\$1.43	\$0.61	(\$0.15)	\$1.73	\$4.96	\$3.72	\$5.25	\$5.94	\$7.00	\$7.73	\$8.21	\$8.43	\$8.60
Diluted Earnings Per Share GAAP	(\$15.35)	(\$5.69)	(\$4.81)	(\$1.33)	(\$1.02)	(\$6.63)	\$1.30	\$0.48	(\$0.28)	\$1.61	\$4.84	\$3.60	\$5.14	\$5.94	\$7.00	\$7.73	\$8.21	\$8.43	\$8.60
Basic Earnings Per Share GAAP	(\$15.35)	(\$5.69)	(\$4.81)	(\$1.33)	(\$1.02)	(\$6.63)	\$1.30	\$0.48	(\$0.28)	\$1.61	\$4.84	\$3.60	\$5.14	\$5.94	\$7.00	\$7.73	\$8.21	\$8.43	\$8.60
Diluted Shares Outstanding (th)	2,207	2,607	2,609	15,480	20,614	10,328	21,233	22,294	23,409	24,580	25,808	27,099	28,454	29,877	31,370	32,939	34,586	36,315	38,131
Basic Shares Outstanding (th)	2,207	2,607	2,609	15,480	20,614	10,328	21,233	22,294	23,409	24,580	25,808	27,099	28,454	29,877	31,370	32,939	34,586	36,315	38,131

Proprietary to Piper Jaffray & Co. December 9, 2013
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S: Suspending Coverage
OW: Overweight
N: Neutral
UW: Underweight
NA: Not Available
UR: Under Review

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Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OW]	345	58.18	72	20.87
HOLD [N]	225	37.94	17	7.56
SELL [UW]	23	3.88	1	4.35

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Analyst Certification — Charles C. Duncan, PhD, Sr. Research Analyst — Roy Buchanan, Ph.D., Research Analyst

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