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OUTPERFORM

Reason for report:

FLASH NOTE

Michael Schmidt, Ph.D.
(617) 918-4588
Michael.Schmidt@Leerink.com

Jonathan Chang, Ph.D.
(617) 918-4015
Jonathan.Chang@Leerink.com

LEERINK SWANN

HEALTHCARE EQUITY RESEARCH

KARYOPHARM THERAPEUTICS, INC.

Selinexor Phase I Update at ASH Encouraging

Key Stats:	(NASDAQ:KPTI)
S&P 600 Health Care Index:	1,279.01
Price:	$16.91
52 Week High:	$19.09
52 Week Low:	$15.50
Shares Outstanding (mil):	28.7
Market Capitalization (mil):	$485.3

• **Bottom Line**: KPTI provided an incremental update from its ongoing single-agent Phase I dose-escalation trial in hematological cancers at ASH this weekend. Recall, the last update on this trial included data through September 20. Presentations at ASH included data from additional patients across the Phase I study which we believe confirms the efficacy and tolerability profile of Selinexor seen previously in patients with Multiple Myeloma, AML, and NHL. KPTI also enrolled three additional patients with Richter's Syndrome, all of which had disease stabilization at the time of data analysis. We continue to believe Selinexor has clear single agent activity across a broad range of indications and a manageable tolerability profile. Reiterate Outperform.

• **Multiple Myeloma (MM) data now available on 25 heavily pretreated patients.** Disease control rate improved to 80% (PR+MR+SD) from 71% at the last update (see attached table). Duration of disease control was also prolonged. Five patients are remaining on the therapy for over five months and two patients for over one year without clinically significant cumulative toxicity.

• **AML data further improved.** In 33 patients evaluable for response, complete remissions with complete (CR, n=4) or incomplete (CRi, n=1) hematologic recovery were observed (CR+CRi 15%). This compares favorably to the prior update, which had 2 CRs and one CRi (see attached data table). Overall, the disease control rate improved by 14 percentage points to 61% from 47%. Five patients remained on study for at least three months, with three of them on study for at least five months with no cumulative toxicity.

• **Non-Hodkin's Lymphoma (NHL) update includes now data on 11 DLBCL patients**. Selinexor's disease control rate improved from 60% to 73% in DLBCL. KPTI now has 2 additional PRs, and 3 new patient with disease stabilization.

• **Next up**: KPTI plans to report more data from the Phase I trial and investigator-sponsored single agent and combination studies in the first half of 2014. KPTI also reiterate its plans to initiate two randomized pivotal studies in the first half of next year.

• **Glossary**: AML=Acute Myelogenous Leukemia, CR=Complete response, CRi=Complete Response with Incomplete Hematological Recovery, DLBCL=Diffuse Large B-Cell Lymphoma, MR=Minimal Response, NHL=Non-Hodgkins Lymphoma, PR=Partial Response, SD=Stable Disease

Please refer to pages 7 - 9 for Important Disclosures, Price Charts and Analyst Certification.

Phase I Dose-Escalation (Hematological Ca

MM (Arm 1)	ASH 2013 Update		September 20, 2013 Update	
	Pts	%	Pts	%
Enrolled	25		20	
Evaluated	25		17	
PR	1	4%	1	6%
MR	4	16%	4	24%
SD	15	60%	7	41%
PD	4	16%	4	24%
WC	1	4%	1	6%
NE	0	0%	0	0%
PR+MR+SD	**20**	**80%**	**12**	**71%**

WM (Arm 1)	ASH 2013 Update		September 20, 2013 Update	
	Pts	%	Pts	%
Enrolled	3		2	
Evaluated	3		2	
PR	0	0	0	0%
MR	3	100%	2	100%
SD	0	0%	0	0%
PD	0	0%	0	0%
WC	0	0%	0	0%
NE	0	0%	0	0%

AML (Arm 2)	ASH 2013 Update		September 20, 2013 Update	
	Pts	%	Pts	%
Enrolled	38		34	
Evaluated	33		32	
CR	4	12%	2	6%
CRi	1	3%	1	3%
PR	3	9%	0	0%
SD	12	36%	12	38%
PD	11	33%	11	34%
WC	4	12%	4	13%
NE	2	6%	2	6%
CR+CRi+PR+SD	**20**	**61%**	**15**	**47%**

Source: Karyopharm data

Arm1 B-Cell Cancers

September 20 Update	Evaluated	PR		SD		PD		WC		NE		PR+SD	
CLL	4	2	50%	2	50%							4	100%
Richter's Syndrome	1	1	100%									1	100%
NHL	15	2	13%	8	53%							10	67%
DLBCL	5	1	20%	2	40%	2	40%					3	60%
MCL	3	1	33%	1	33%					1	33%	2	67%
FL	5			5	100%							5	100%
Transformed	2					2	100%					0	0%

ASH Update	Evaluated	PR		SD		PD		WC		NE		PR+SD	
CLL	4	2	50%	2	50%							4	100%
Richter's Syndrome	4	1	25%	3	75%							4	100%
NHL	22	5	23%	10	45%							15	68%
DLBCL	11	3	27%	5	45%	2	18%			1	9%	8	73%
MCL	3	1	33%	1	33%					1	33%	2	67%
FL	6	1	17%	4	67%			1	17%			5	83%
Transformed	2					2	100%					0	0%

Source: Karyopharm Data

Event
Phase I program
Phase I data update
End of Phase I FDA/EMA meeting
Phase I dose expansion data
Phase I dose expansion data
Phase I dose expansion data
Phase I data
Phase I data
Hematological cancers
Initiation of pivotal Phase II/III (single agent)
Initiation of pivotal Phase II/III (single agent)
Pivotal Phase II/III data
Pivotal Phase II/III data
Launch
Launch
Solid tumors
Initiate Phase II
Initiate Phase II
Phase II data
Phase II data
Investigator-Initiated Studies
Initiation Phase I/II

Source: Company filings and Leerink Swann estimates

Indication
Hematological cancers
Pivotal trial protocol review
Heme Arm 1 (MM, WM, DLBCL)
Heme Arm 2 (AML)
Solid tumors
Heme Arm 3 (TCL)
Food effect study in soft tissue/bone sacromas
elderly r/r AML
DLBCL or MM
elderly r/r AML
DLBCL or MM
r/r AML
DLBCL or MM
single agent solid tumor (gynecological)
single agent solid tumor (squamous cell cancers [lung, head and neck, esophageal)
single agent solid tumor (gynecological)
single agent solid tumor (squamous cell cancers [lung, head and neck, esophageal)
combination

Timing
ASH Dec. 12, 2013
4Q13
mid-14
mid-14
mid-14
2014
2014
2Q14
2Q14
1H16
1H16
1H17
1H17
1Q14
1Q14
2H15
2H15
2013/14

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Disclosures Appendix

Analyst Certification

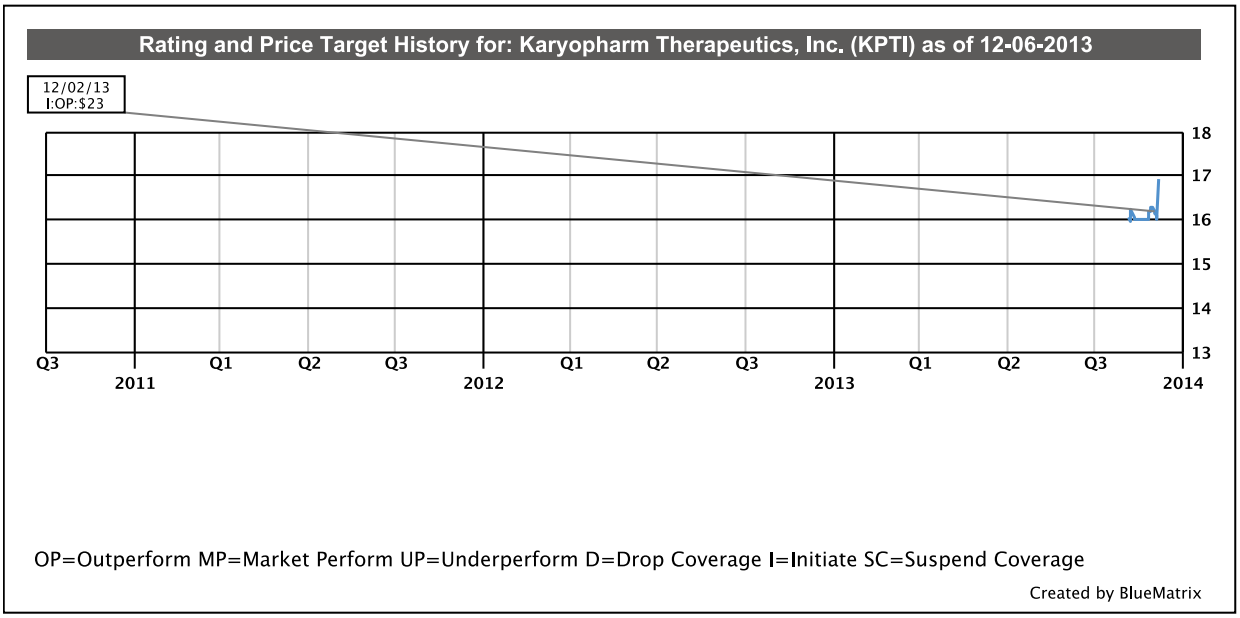
I, Michael Schmidt, Ph.D., certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation

We estimate a $23 fair value for KPTI shares in 12 months, based on a discounted cash flow (DCF) analysis. We apply a 12% discount rate to 35% probability of success-weighted Selinexor cash flows in three relapsed/refractory hematological cancer indications (AML, DLBCL, and MM). Potential Selinexor revenues derived from solid tumor indications as well as the preclinical and pet pipeline are upside to our valuation. Our valuation uses a terminal value derived by applying a 5x multiple to 2032 Selinexor revenue, discounted back by 18.25 periods. We believe use of a 5x revenue multiple is conservative compared to that of biotech industry average (6x). Based on our DCF analysis, we attribute $20/share to Selinexor and the rest to the preclinical pipeline and platform and the remainder to expected cash in one year.

Risks to Valuation

Early stage biotech companies such as KPTI face significant clinical and regulatory development risk, as well as commercial risks. KPTI also faces execution risk and financial risk. We estimate that KPTI's current cash will be sufficient to fund into early 2017, and the company may have additional financing needs before turning cash flow positive. The vast majority of our KPTI valuation is based on selinexor, the company's only clinical stage product candidate, so potential setbacks due to possible safety and/or efficacy related issues of selinexor could have a significant impact to our valuation.



Distribution of Ratings/Investment Banking Services (IB) as of 09/30/13				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OP]	111	64.90	27	24.00
HOLD [MP]	60	35.10	0	0.00
SELL [UP]	0	0.00	0	0.00

Explanation of Ratings

Outperform (Buy): **We expect this stock to outperform its benchmark over the next 12 months.**

Market Perform (Hold/Neutral): **We expect this stock to perform in line with its benchmark over the next 12 months.**

Underperform (Sell): **We expect this stock to underperform its benchmark over the next 12 months.The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.**

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than $2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over $2 billion.

Important Disclosures

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In the past 12 months, the Firm has received compensation for providing investment banking services to Karyopharm Therapeutics, Inc.

Leerink Swann LLC makes a market in Karyopharm Therapeutics, Inc.

Leerink Swann LLC has acted as the manager for a public offering of Karyopharm Therapeutics, Inc. in the past 12 months.

Leerink Swann LLC Equity Research

Director of Equity Research	**John L. Sullivan, CFA**	(617) 918-4875	john.sullivan@leerink.com
Associate Director of Research	**Alice C. Avanian, CFA**	(617) 918-4544	alice.avanian@leerink.com
Healthcare Strategy	**John L. Sullivan, CFA**	(617) 918-4875	john.sullivan@leerink.com
	Alice C. Avanian, CFA	(617) 918-4544	alice.avanian@leerink.com
Biotechnology	**Howard Liang, Ph.D.**	(617) 918-4857	howard.liang@leerink.com
	Joseph P. Schwartz	(617) 918-4575	joseph.schwartz@leerink.com
	Marko Kozul, M.D.	(415) 905-7221	marko.kozul@leerink.com
	Michael Schmidt, Ph.D.	(617) 918-4588	michael.schmidt@leerink.com
	Irene Lau	(415) 905-7256	irene.lau@leerink.com
	Gena Wang, Ph.D., CFA	(212) 277-6073	gena.wang@leerink.com
	Paul Matteis	(617) 918-4585	paul.matteis@leerink.com
Life Science Tools and Diagnostics	**Dan Leonard**	(212) 277-6116	dan.leonard@leerink.com
	Justin Bowers, CFA	(212) 277-6066	justin.bowers@leerink.com
Pharmaceuticals/Major	**Seamus Fernandez**	(617) 918-4011	seamus.fernandez@leerink.com
	Ario Arabi	(617) 918-4568	ario.arabi@leerink.com
Specialty Pharmaceuticals, Generics	**Jason M. Gerberry, JD**	(617) 918-4549	jason.gerberry@leerink.com
	Christopher W. Kuehnle, JD	(617) 918-4851	chris.kuehnle@leerink.com
Medical Devices, Cardiology & Orthopedics	**Danielle Antalffy**	(212) 277-6044	danielle.antalffy@leerink.com
	Richard Newitter	(212) 277-6088	richard.newitter@leerink.com
	Robert Marcus, CFA	(212) 277-6084	robert.marcus@leerink.com
	Ravi Misra	(212) 277-6049	ravi.misra@leerink.com
Healthcare Services	**Ana Gupte, Ph.D.**	(212) 277-6040	ana.gupte@leerink.com
Healthcare Technology & Distribution	**David Larsen, CFA**	(617) 918-4502	david.larsen@leerink.com
	Christopher Abbott	(617) 918-4010	chris.abbott@leerink.com
Sr. Editor/Supervisory Analyst	**Mary Ellen Eagan, CFA**	(617) 918-4837	maryellen.eagan@leerink.com
Supervisory Analysts	Robert Egan		bob.egan@leerink.com
	Amy N. Sonne		amy.sonne@leerink.com

New York
299 Park Avenue, 21st floor
New York, NY 10171
(888) 778-1653

Boston
One Federal Street, 37th Floor
Boston, MA 02110
(800) 808-7525

San Francisco
201 Spear Street, 16th Floor
San Francisco, CA 94105
(800) 778-1164