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OUTPERFORM

Reason for report:

FLASH NOTE

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KARYOPHARM THERAPEUTICS, INC.

Preview on Upcoming News flow for Selinexor

• **Bottom Line**: We spoke with KPTI management yesterday, after hosting investor meetings for the company, to discuss upcoming news flow for selinexor at American Society of Hematology (ASH, Dec. 6-9) and beyond. With now 25 different single agent and combination trials ongoing (see table on pg. 3) and more planned to launch near-term, we believe 2015 shapes up to be an important year for KPTI, ahead of expected data from registration-directed single agent trials potentially in four different hematological cancers in 2016. We believe KPTI shares are currently valued for the probability-adjusted selinexor opportunity in late stage hematological cancers only, and we view potential activity in earlier lines of therapy (1), in synergistic combinations (2), or in solid tumor indications (3) as important near-term sources of upside to the current valuation. Reiterate OP.

• **Multiple Myeloma (MM):** At ASH (conference Dec. 6-9; abstracts on Nov. 6), KPTI expects to present an update on its ongoing dexamethasone (dex) combination trial. Recall this trial consists of two 10-patient cohorts being treated with 45mg/m2 or 60mg/m2 selinexor, respectively, plus low-dose dex. Promising initial data on 8 patients from the lower dose selinexor cohort were presented at EHA showing 4/8 responses, including one CR (link). 3/4 patients who initially responded are currently still in remission, according to KPTI who now completed enrolling all 10 patients in the 45mg/m2 selinexor arm. Mgmt noted that unlike in Diffused Large B-Cell Lymphoma (DLBCL) (see below), late stage multiple myeloma (MM) patients were too fragile to tolerate the higher 60mg/m2 selinexor dose (fatigue) of the second cohort, so mgmt plans to move forward with a registration-directed study in r/rMM (Pomalyst and/or Kyprolis relapsed pts) using a fixed dose of 80mg BIW, which corresponds to the 45mg/m2 selinexor dose plus a lower 40mg fixed dose arm. An update on the path to registration for single agent selinexor in MM is expected in 4Q following a near-term FDA meeting. We believe of high interest in MM is also data from two ongoing investigator sponsored trials (ISTs), one evaluating selinexor in combination with either Kyprolis and dex and one in combination with liposomal doxorubicin respectively. An abstract has been submitted for the Kyprolis combination study for ASH according to mgmt, but it is unclear if clinical data is included in the presentation.

• **Diffuse Large B Cell Lymphoma (DLBCL):** We expect KPTI to provide an update from its Phase I dose-ranging (12-50mg/m2) DLBCL cohort at ASH. KPTI has now 27 patients enrolled. Recall the last update on 24 patients was provided at EHA, showing a 25% overall response rate (ORR), which included one CR in a hard-to-treat "double-hit" third-line r/r DLBCL patient who relapsed from R-CHOP and R-ICE. Importantly, the ORR was 27% in 11 patients of the Germinal-Center B Cell (GCB) sub-type which is less responsive to certain anti-lymphoma therapies. The registration-directed "SADAL" trial will start recruiting patients in November (pls. see table on pg 3) and include 50% pts with the GCB sub-type. Recall, following an FDA meeting this July, KPTI designed the DLBCL registration-directed study design to include 200 patients with DLBCL after 2 to 4 prior lines of therapy, which will be randomized 1:1

Key Stats:	**(NASDAQ:KPTI)**
S&P 600 Health Care Index:	**1,313.96**
Price:	**$33.60**
52 Week High:	$47.98
52 Week Low:	$15.50
Shares Outstanding (mil):	29.7
Market Capitalization (mil):	$997.9

to low (60mg) versus high (100mg) fixed doses of selinexor given twice weekly (BIW). All patients will also receive 8-12mg of dexamethasone as supportive care. Data from that trial is expected in 2016. KPTI is currently evaluating trials for earlier lines of therapy in DLBCL and a A Phase I arm in combination with rituximab has been launched this summer.

• **Acute myeloid leukemia (AML)**: In AML, KPTI initiated the registration-directed single-agent "SOPRA" trial in r/r elderly AML this August. Overall survival (OS) data vs. best supportive care are expected in mid-16. KPTI does not expect to present any new monotherapy data at ASH and is focusing on accruing the SOPRA trial. However, we believe ongoing AML combination trials could provide meaningful catalysts in 2015. Data from a study in r/r AML in combination with decitabine (Dacogen) (initiated in March) is expected in 1H15. A study to evaluate cytarabine and idarubicin in combination Selinexor in r/r AML was initiated in September, with data available likely in mid-15. A single agent IST and a combination study in myelodylplasic syndrome (MDS) ("SELHEM") with fludarabine and cytarabine were initiated in August should have data in 2015 as well. An IST in newly diagnosed AML or myelodysplastic syndrome in combination with cytarabine is expected to launch near term.

• **Richter's Transformation (RT)**: No new Phase I data on RT is expected at ASH. Mgmt is focusing on completing the registration-directed "SIRRT" trial which was initiated in July. Mgmt believes the SIRRT trial could potentially be the first registration-directed study to complete and read-out even before the AML SOPRA trial. Mgmt believes a 20% single agent ORR would be approvable in RT approvable with a 30% ORR being a "home run".

• **Next meaningful Phase II data for solid tumors likely at ASCO (5/29 - 6/2, 2015), according to management.** 14 solid tumor trials are currently ongoing (see enclosed table), including five company-sponsored Phase II single agent trials in gynecological cancers (1), squamous cell cancers (2), glioblastoma (3), prostate cancer (4) and sarcoma (5). ISTs are ongoing in ovarian cancer, pre-chemo prostate cancer, lung and neuroendocrine tumors, melanoma, neoadjuvant rectal cancer, pancreatic cancer, and genetically selected salivary gland cancers.

Selinexor Clinical Trials Overview, Liquid Tumors

Phase	Indication	Treatment	Sponsor	n =	Primary Endpoint	ID	Status	Initiated	Primary Completion
Phase 2*	Relapsed AML, elderly pts (SOPRA trial)	Selinexor vs. physician's choice	KPTI	150	OS	NCT02088541	Recruiting	Mar-14	Apr-15
Phase 2	Newly diagnosed eldery AML or MDS	Selinexor + cytarabine (Ara-C) vs. Ara-C	IST				Planned		
Phase 2	Relapsed/refractory AML (SAIL)	Selinexor + Ara-C and Idarubicin	KPTI	25	ORR	NCT02249091	Recruiting	Sep-14	Jun-15
Phase 2	MDS refractory to HMAs	Selinexor	IST	20	ORR	NCT02228525	Recruiting	Aug-14	Aug-16
Phase 1/2	Relapsed/refractory leukemia or MDS (SELHEM)	Selinexor + fludarabine and Ara-C	IST	36	Safety/ORR	NCT02212561	Recruiting	Aug-14	Sep-17
Phase 1	Relapsed/refractory AML	Selinexor + decitabine (Dacogen)	IST	42	safety, MTD	NCT02093403	Recruiting	Mar-14	Jul-17
Phase 1	Relapsed childhood ALL and AML	Selinexor	IST	28	safety, MTD	NCT02091245	Recruiting	Mar-14	May-17
Phase 2*	Relapsed/refractory DLBCL (SADAL)	Selinexor high dose vs. low dose + low-Dose Dex	KPTI	200	ORR	NCT02227251	Not yet recruiting	Nov-14	Jul-16
Phase 2	DLBCL (earleir lines of Tx)	Selinexor combination					Planned		
Phase 2*	Relapsed/refractory Richter's Transformation (SIRRT)	Selinexor	KPTI	50	ORR	NCT02138786	Not yet recruiting	Jul-14	Dec-14
Phase 2*	T Cell lymphoma (TCL)	Selinexor	KPTI				Planned		
Phase 2*	Relapsed/refractory Multiple Myeloma	Selinexor + low-dose Dexamethasone (Dex)	KPTI				Planned		
Phase 1/2	Relapsed/refractory Multiple Myeloma	Selinexor + Pegylated Liposomal Doxorubicin	IST	47	MTD, ORR	NCT02186834	Recruiting	Sep-14	Mar-16
Phase 1	Relapsed/refractory Multiple Myeloma	Selinexor + Carfilzomib + Dex	IST	48	MTD, ORR, safety	NCT02199665	Not yet recruiting	Jul-14	Apr-16
Phase 1	Relapsed/refractory Multiple Myeloma	Selinexor + IMIDs	KPTI				Planned		
Phase 1	Advanced hematological malignancies	Selinexor	KPTI	249	safety	NCT01607892	Recruiting	Jun-12	Jan-16

Selinexor Clinical Trials Overview, Solid Tumors

Phase	Indication	Treatment	Sponsor	n =	Primary Endpoint	ID	Status	Initiated	Primary Completion
Phase 2	Ovarian, endometrial, cervical carcinoma (SIGN)	Selinexor	KPTI	63	DCR	NCT02025985	Recruiting	Jan-14	Mar-15
Phase 1	Ovarian, endometrial cancer	Selinexor + Paclitaxel and Carboplatin	IST	48	MTD, ORR	NCT02269293	Recruiting	Oct-14	Oct-16
Phase 2	Recurrent glioblastoma after radiation/TMZ (KING)	Selinexor	KPTI	30	6 month PFS	NCT01986348	Recruiting	Mar-14	Jun-15
Phase 2	SCC of head and neck, lung, or esophagus	Selinexor	KPTI	66	3-month DCR	NCT02213133	Recruiting	Jul-14	Nov-15
Phase 2	mCRPC (SHIP)	Selinexor	KPTI	50	CBR	NCT02146833	Recruiting	May-14	Dec-14
Phase 2	pre-chemo mCRPC after Zytiga and/or Xtandi	Selinexor	IST	54	rPFS	NCT02215161	Not yet recruiting	Aug-14	Dec-17
Phase 2	Lung and Gastroenteropancreatic Tumors	Selinexor	IST	20	ORR	NCT02250885	Recruiting	Aug-14	Aug-15
Phase 1	Effects of food and formulation in sarcoma	Selinexor	KPTI	20	PK	NCT01896505	Recruiting	Jul-13	Dec-13
Phase 1	Unresectable melanoma	Selinexor	IST	20	safety	NCT02120222	Recruiting	Apr-14	Jul-17
Phase 1	Solid tumors (Asian patients)	Selinexor	IST	30	safety	NCT02078349	Recruiting	Feb-14	Feb-16
Phase 1	Neoadjuvant Advanced Rectal Cancer	Selinexor + chemoradiation	IST	28	safety	NCT02137356	Not yet recruiting	Jun-14	Jun-17
Phase 1/2	Metastatic Pancreatic Cancer	Selinexor + Gemcitabine + Paclitaxel Nanoparticle	IST	43	MTD, ORR, PFS	NCT02178436	Not yet recruiting	Jun-14	Aug-15
Phase 1	Genetically selected Salivary gland cancers	Selinexor	IST	30	PR, CR	NCT02069730	Recruiting	Jun-14	Apr-19
Phase 1	Advanced solid tumors	Selinexor	KPTI	90	safety	NCT01607905	Recruiting	Jun-12	Jan-16

**potentially pivotal/registration-directed trial*

Source: clinicaltrials.gov, KPTI

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Disclosures Appendix

Analyst Certification

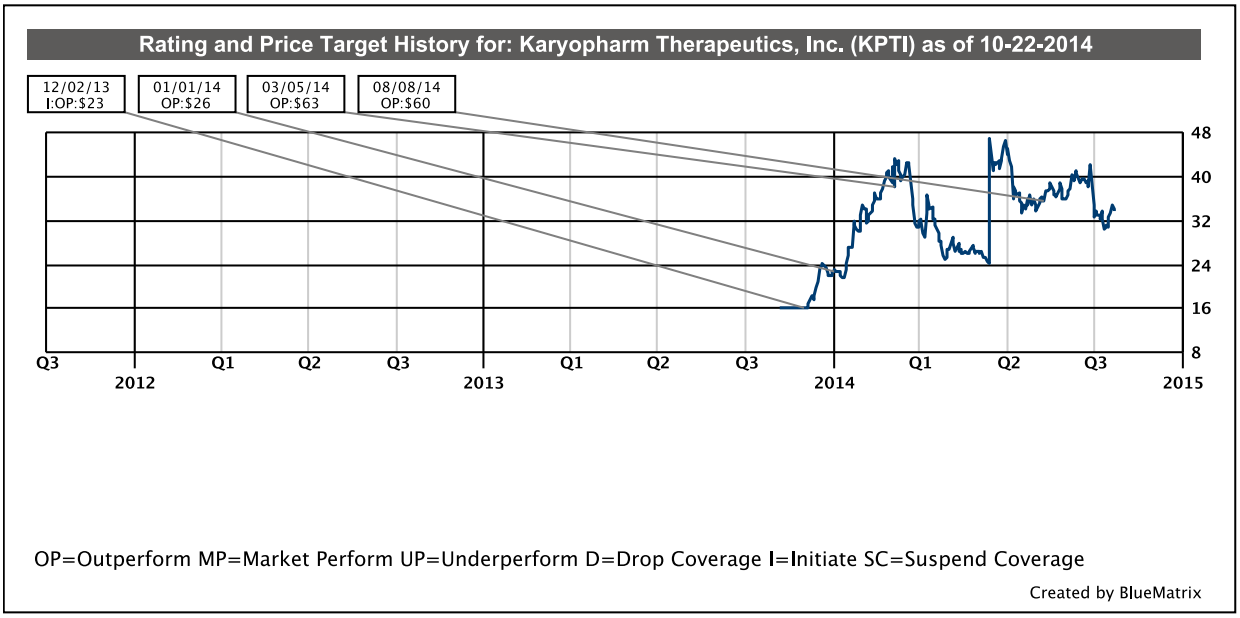
I, Michael Schmidt, Ph.D., certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation

Our price target for KPTI is $60/share. Our valuation is based on a discounted cash flow (DCF) analysis. We apply a 12% discount rate to 35% probability of success (POS) weighted Selinexor cash flows derived from three relapsed/ refractory hematological cancer indications (AML, DLBCL, and MM), 20% POS-weighted sales in Richter's syndrome, and 10% POS-weighted sales in solid tumor indications. Our valuation uses a terminal value derived by applying a 6x multiple to 2025E Selinexor revenue, discounted back by 11 periods. The 6x revenue multiple is in line with the mid-cap biotech industry average. Based on our DCF analysis, we attribute $54/share to Selinexor 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 2H17, 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 on our valuation.



Distribution of Ratings/Investment Banking Services (IB) as of 09/30/14				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OP]	138	69.30	51	37.00
HOLD [MP]	61	30.70	2	3.30
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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Leerink Partners LLC has acted as the manager for a public offering of Karyopharm Therapeutics, Inc. in the past 12 months.

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