Loxo Oncology, Inc. (LOXO)

ENA2014 Wrap-Up: Suddenly, the TRK Landscape Looks Much Larger

MARKET DATA

Price	$10.42
52-Week Range:	$10.00 - $16.45
Shares Out. (M):	16.6
Market Cap ($M):	$173.0
Average Daily Vol. (000):	26.0
Cash (M):	$119
Cash/Share:	$7.13
Enterprise Value (M):	$212
Float (M):	16.2
LT Debt (M):	$0

Source: Thomson Reuters and JMP Securities LLC

FY DEC		2014E	2015E	2016E
Revenue ($M)	1Q	$0.0A	--	--
	2Q	$0.0A	--	--
	3Q	$0.0A	--	--
	4Q	$0.0	--	--
	FY	**$0.0**	**$0.0**	**$0.0**
EPS	1Q	($0.68)A	--	--
	2Q	($14.39)A	--	--
	3Q	($0.68)A	--	--
	4Q	($0.30)	--	--
	FY	**($1.48)**	**($1.93)**	**($3.74)**

Source: Company reports and JMP Securities LLC

STOCK PRICE PERFORMANCE

MARKET OUTPERFORM | Price: $10.42 | Target Price: $23.00

INVESTMENT HIGHLIGHTS

TRK fusions found in many more tumor types than had been previously identified; reiterate Market Outperform rating and $23 price target through a synthesis of our discounted cash flow, sum-of-the-parts, and compound annual growth valuation methodologies on Loxo Oncology. A paper published last week in *Nature Communications* described a breakthrough study using algorithmic software to identify novel gene fusions across a spectrum of tumor types with TRK fusions found in many more tumor types than had been previously identified, suggesting broader market potential for LOXO-101, a first-in-class inhibitor.

Refresher on TRK and LOXO-101. Recall that the TRK family of neurotrophin receptors, exemplified by TRKA, TRKB, and TRKC, function primarily in the growth, differentiation, and survival of neurons. Recently, NTRK1 fusions were described in a subset of lung adenocarcinoma patients. LOXO-101 is being developed under license from Array Biopharma (ARRY, NC), and is undergoing clinical development in patients with advanced solid tumors. By 1H15, LOXO-101 is expected to advance into clinical development in lung cancer patients wherein a TRK fusion protein is the key "driver" of the cancer. LOXO-101 will also be looked at in patients with TRK fusions, splice variants, mutations or in conditions where TRKs are overexpressed. The compound binds all three subtypes of the TRK receptors, i.e., TRKA, B, and C. We currently model uptake of LOXO-101 in non-small cell lung cancer (NSCLC), metastatic colorectal cancer (mCRC), and papillary thyroid cancer.

Nature article suggests there are more TRK mutations than originally recognized. This study was conducted by a group at privately held Blueprint Medicines, and Chief Scientific Officer, Christoph Lengauer, presented some of the findings during the Thursday afternoon plenary at ENA2014. Two fundamental assumptions underlie the findings in this breakthrough paper, entitled, "The landscape of kinase fusions in cancer." First, there is a tremendous amount of genomic "white space" in nearly all tumor types (except for those instances in which a tumor is driven by a single mutation); thus, we believe it is reasonable to hypothesize that there are additional, undiscovered gene fusions underpinning tumor subtypes. Second, the advancements made in both next-generation sequencing (NGS), and increased computing power (hardware and software) make it possible to undertake de novo gene discovery purely in software. Kinase fusions, such as bcr-abl in chronic myelogenous leukemia (CML), and ELM4-ALK in NSCLC, are two of the best-known examples of druggable, driver gene fusions. Overall, the investigators found kinase fusions in 3% of samples of 20 tumor types, in a range of 0-12.9%. Pertinent to LOXO and the TRK space, the investigators located five novel TRK fusions in NTRK1, 2 and 3 in tumor types that had not been previously known to carry such.

Michael G. King, Jr.
mking@jmpsecurities.com
(212) 906-3520

In addition, two known fusions in NTRK1 and 3 were found to have previously unknown fusion partners in thyroid cancer. Overall, NTRK1-2 fusions were discovered in a total of nine of the 20 tumor samples analyzed. Also of significance, these fusions seem to travel alone, that is, without other fusions, meaning that they are likely to be the true drivers. This has positive implications for treatment outcomes, in our view.

Not adding additional indications to our LOXO-101 model, but highly encouraged. We have no better words than those of the Blueprint Medicines team, who stated the following in their report: "…altogether, we detected a total of 23 NTRK1, NTRK2, and NTRK3 fusions across nine tumor types (vs. three in our model). These data strongly suggest that gene fusions are one of the most prevalent mechanisms of oncogenic activation of this receptor tyrosine kinase family. NTRK fusions therefore represent a low frequency, pan-cancer event that nevertheless may account for a significant fraction of patients who could benefit from a pan-NTRK inhibitor." We agree.

LOXO also provided updated pre-clinical data at ENA2014. In a minor addendum to data that has been presented to date (notably in the LOXO S-1 registration statement), the company performed a head-to-head study of LOXO-101 against Pfizer's (PFE, NC) Xalkori (crizotinib) in pre-clinical animal models. LOXO-101 was shown to have significantly superior tumor inhibition rates compared to Xalkori. LOXO-101 was also shown to have greater activity against TRKA compared to Xalkori.

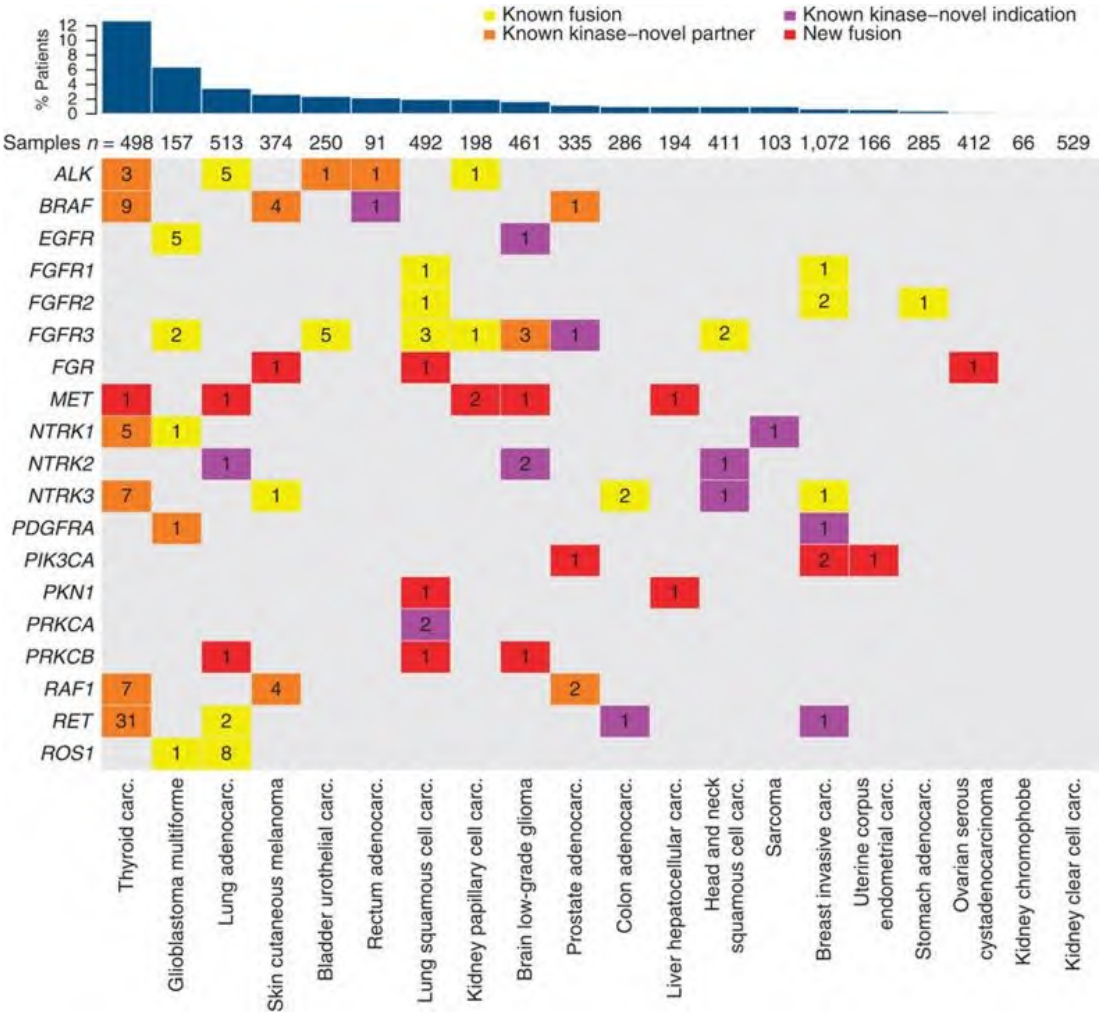
We believe an investment in LOXO represents an investment in a modern model of a nimble and capital efficient oncology drug development company of the future. More concretely, we believe LOXO-101 represents a compound with a high likelihood of clinical benefit and, ultimately, regulatory and commercial success. In our view, LOXO-101 should generate $1 billion-plus worldwide revenues, divided among three separate indications. Longer-term, we believe the management team, with guidance and input from its scientific advisory board, possesses the necessary skill set to repeat the success that we expect to be achieved with LOXO-101 with future pipeline candidates.

FIGURE 1. Upcoming Potential Catalysts

Timing	Catalyst
1Q15E	LOXO-101 Phase I safety and tolerability data
2Q15E	Nomination of second pipeline candidate – LOXO-200
2Q15E	Initiation of LOXO-101 Phase Ib trial in TRK+ solid tumors
2H15E	IND filing for LOXO-200

Source: Company Reports

FIGURE 2. Identified Genetic Fusions



Source: *Nature Communications; Sep. 10, 2014; 5: 4846.*

Company Description

Loxo Oncology, based in Stamford, CT, is a biotechnology company focused on the development of targeted, small molecule therapeutics for the treatment of cancer in genetically defined patient populations. By focusing on the engagement molecular targets exhibiting the hallmarks of oncogene addiction, Loxo aims to maximize the probability of clinical success while reducing the time, cost, and risks associated with drug development.

The company's lead product candidate, LOXO-101, is a potent selective inhibitor of tropomyosin receptor kinase (Trk), currently in a Phase I dose escalation trial, expected to give a preliminary safety and PK/PD read-out in early 2015. Trk comprises a family of membrane-bound signaling molecules that, when aberrantly expressed through genetic alterations, play an important role in the pathogenesis of various cancers. The company also intends to expand its pipeline with additional small molecule inhibitors targeting cancers driven by specific genetic alterations, nominating a new candidate in 1H15.

Investment Risks

Clinical. Drug development is an inherently risky business. Like all clinical trials, LOXO-101 clinical development carries some risk of failure. LOXO-101 may fail to maintain the requisite safety or demonstrate meaningful efficacy to warrant further development through to regulatory approval.

Regulatory and commercial. The ability of Loxo or its future potential partners to market its drugs depends on those drugs obtaining approval from the FDA and foreign regulatory agencies. Failure to achieve approval or delays in the timelines to approval could negatively impact the company’s share price.

Competitive. Oncology drug development is an increasingly competitive field. Loxo faces competition from companies developing existing small molecule agents that target the Trk family of kinases, and agents inhibiting cancer-related mechanisms of action applicable to intended indications with LOXO-101. Some of the companies may have access to greater resources and expertise compared to Loxo Oncology.

Partnering. The development of LOXO-101 and additional candidate programs is governed, in part, by a multi-year strategic collaboration agreement with Array BioPharma (ARRY), wherein Loxo has been granted access to Array’s compound library and chemistry platform. Changes to this collaboration agreement could have a substantially negative impact on Loxo’s ability to expand its pipeline and, in turn, valuation.

Financial. Taking into account ~$60MM in net proceeds raised through its IPO, we estimate that Loxo will finish 3Q and FY2014 with cash and cash equivalents of $79MM and $75MM, respectively, which we believe should be adequate resources to fund operations into 1H17. We anticipate that Loxo will seek additional equity financing in the form of a secondary offering in order to complete the development of LOXO-101 and advance its future pipeline candidates, exposing existing shareholders to some degree of dilution risk.

JMP FACTS AND DISCLOSURES

Analyst Certification:

The research analyst(s) who prepared this report does/do hereby certify that the views presented in this report are in accordance with my/our personal views on the securities and issuers discussed in this report. As mandated by SEC Regulation AC no part of my/our compensation was, is or will be directly or indirectly related to the specific views or recommendations expressed herein. This certification is made under the obligations set forth in SEC Regulation AC. Any other person or entity may not use it for any other purpose. This certification is made based on my/our analysis on the date of this report's publication. I/We assume no obligation to update this certification to reflect any facts,circumstances or events that may subsequently come to my/our attention. Signed Michael G. King

JMP Securities Disclosures:

JMP Securities currently makes a market in the security of Loxo Oncology, Inc.

JMP Securities was manager or co-manager of a public offering of securities for Loxo Oncology, Inc. (LOXO) in the past 12 months, and received compensation for doing so.

JMP Securities expects to receive OR intends to seek compensation for investment banking services from Loxo Oncology, Inc. in the next 3 months.

JMP Securities Investment Opinion Definitions:

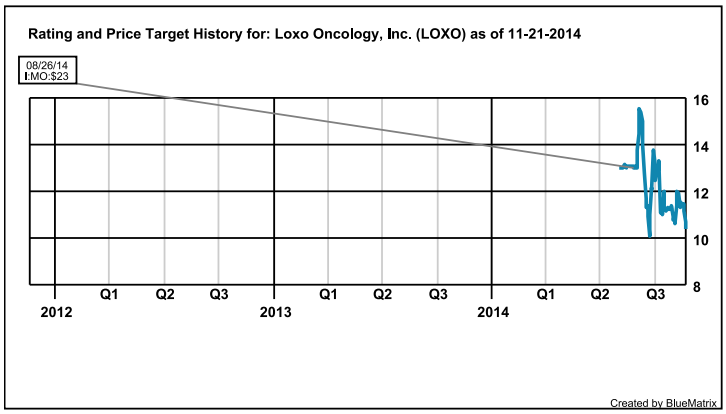
Market Outperform (MO): JMP Securities expects the stock price to outperform relevant market indices over the next 12 months.
Market Perform (MP): JMP Securities expects the stock price to perform in line with relevant market indices over the next 12 months.
Market Underperform (MU): JMP Securities expects the stock price to underperform relevant market indices over the next 12 months.

JMP Securities Research Ratings and Investment Banking Services: (as of November 24, 2014)

JMP Rating	Regulatory Equivalent	# Co's Under Coverage	*% of Total*	Regulatory Equivalent	# Co's Under Coverage	*% of Total*	# Co's Receiving IB Services in Past 12 Months	*% of Co's With This Rating*
MARKET OUTPERFORM	Buy	287	*61.06%*	Buy	287	*61.06%*	102	*35.54%*
MARKET PERFORM	Hold	142	*30.21%*	Hold	142	*30.21%*	16	*11.27%*
MARKET UNDERPERFORM	Sell	3	*0.64%*	Sell	3	*0.64%*	0	*0%*
COVERAGE IN TRANSITION		35	*7.45%*		35	*7.45%*	0	*0%*
TOTAL:		470	*100%*		470	*100%*	120	*25.53%*

Stock Price Chart of Rating and Target Price Changes:

Note: First annotation denotes initiation of coverage or 3 years, whichever is shorter. If no target price is listed, then the target price is N/A. In accordance with NASD Rule 2711, the chart(s) below reflect(s) price range and any changes to the rating or price target as of the end of the most recent calendar quarter. The action reflected in this note is not annotated in the stock price chart. Source: JMP Securities.



JMP Disclaimer:

JMP Securities LLC (the “Firm”) compensates research analysts, like other Firm employees, based on the Firm’s profitability, which includes revenues from the Firm’s institutional sales, trading, and investment banking departments as well as on the quality of the services and activities performed that are intended to benefit the Firm’s institutional clients. These data have been prepared by JMP Securities LLC for informational purposes only and are based on information available to the public from sources that we believe to be reliable, but we do not guarantee their accuracy or completeness. Any opinions and projections expressed herein reflect our judgment at this date and are subject to change without notice. These data are neither intended nor should be considered as an offer to sell or a solicitation or a basis for any contract for the purchase of any security or other financial product. JMP Securities LLC, its affiliates, JMP Group LLC, Harvest Capital Strategies LLC, and their respective partners, directors, officers, and associates may have a long or short position in, may act as a market maker for, or may purchase or sell a position in the securities mentioned herein. JMP Securities LLC or its affiliates may be performing, have performed, or seek to perform investment banking, advisory, or other services and may have acted as manager or co-manager for a public offering of securities for any company mentioned herein. The reader should assume that JMP Securities LLC will solicit business from the company covered in this report. Members of our Sales and Trading Department provide oral and/or written market opinions and trading strategies to our clients that reflect their personal opinions about stocks that are the subject of the firm's research reports. Our research analysts discuss trading strategies with clients that sometimes reflect short-term expectations for the price of the securities that are the subject of research reports. These trading strategies are distinct from the analysts' fundamental rating for the stock, which is based upon the analysts' view compared to other stocks under coverage for the relevant time period. JMP Securities LLC is a member of FINRA, NASDAQ, and SIPC.

Jeffrey H. Spurr
Director of Research
(415) 835-3903

RESEARCH PROFESSIONALS

FINANCIAL SERVICES

Alternative Asset Managers
Devin Ryan (212) 906-3578
Brian McKenna (212) 906-3545

Commercial & Specialty Finance
Christopher York (415) 835-8965
Hannah Kim, CFA (415) 835-8962

Consumer Finance
David M. Scharf (415) 835-8942
Douglas Greiner (212) 906-3525

Financial Processing & Outsourcing
David M. Scharf (415) 835-8942
Douglas Greiner (212) 906-3525

Insurance
Matthew J. Carletti (312) 768-1784
Christine Worley (312) 768-1786

Investment Banks & Brokers
Devin Ryan (212) 906-3578
Brian McKenna (212) 906-3545

Mortgage Operating Companies
REITs: Agency, Hybrid, & Commercial Mortgage
Steven C. DeLaney (404) 848-7773
Trevor Cranston, CFA (415) 869-4431
Charter Robinson (757) 613-8955
Benjamin Zucker (212) 906-3529

HEALTHCARE

Biotechnology
Liisa A. Bayko (312) 768-1785
Masha Chapman (415) 835-8944
Andrew Prigodich, PhD (312) 768-1788
Bhumika Sharma, PhD (312) 768-1795
Jason N. Butler, PhD (212) 906-3505
Caroline Palomeque (212) 906-3509
Michael G. King, Jr. (212) 906-3520
Bryan Czyzewski, PhD (212) 906-3577

Healthcare Services & Facilities
Peter L. Martin, CFA (415) 835-8904
Aaron Hecht (415) 835-3963
Arthur Kwok (415) 835-8908

Life Science Tools & Diagnostics
J. T. Haresco, III, PhD (415) 869-4477
Marie T. Casey, PhD (415) 835-3955

Medical Devices
J. T. Haresco, III, PhD (415) 869-4477
Marie T. Casey, PhD (415) 835-3955

Medical Devices & Supplies
David Turkaly (212) 906-3563
John Gillings (212) 906-3564

Specialty Pharmaceuticals
Oren G. Livnat, CFA (212) 906-3566
Nazibur Rahman (212) 906-3519

REAL ESTATE

Housing & Land Development
Peter L. Martin, CFA (415) 835-8904
Aaron Hecht (415) 835-3963
Bharathwajan Iyengar (415) 835-3902

Lodging & Leisure
Robert A. LaFleur (212) 906-3510
Whitney Stevenson (212) 906-3538

Property Services
Mitch Germain (212) 906-3546
Peter Lunenburg (212) 906-3537

REITs: Healthcare, Residential, & Specialty
Peter L. Martin, CFA (415) 835-8904
Aaron Hecht (415) 835-3963
Arthur Kwok (415) 835-8908

REITs: Office, Industrial, & Diversified
Mitch Germain (212) 906-3546
Peter Lunenburg (212) 906-3537

Residential Services
Peter L. Martin, CFA (415) 835-8904
Aaron Hecht (415) 835-3963
Bharathwajan Iyengar (415) 835-3902

TECHNOLOGY

Communications Infrastructure & Internet Security
Erik Suppiger (415) 835-3918
John Lucia (415) 835-3920

Internet & Digital Media
Ronald V. Josey III (212) 906-3528
Andrew Boone, CFA (415) 835-3957
Ignatius Njoku (415) 835-8960
Michael Wu (415) 835-8996

Software
Patrick Walravens (415) 835-8943
Peter Lowry (415) 869-4418
Mathew Spencer (415) 835-8930
Greg McDowell (415) 835-3934
Rishi Jaluria (415) 835-3961

Wireless & Cloud Computing Technologies
Alex Gauna (415) 835-8998

ADDITIONAL CONTACTS

Thomas R. Wright
Director of Equities
(212) 906-3599

Dan Wychulis
Director of Institutional Sales
(617) 235-8530

600 Montgomery Street, Suite 1100
San Francisco, CA 94111
www.jmpsecurities.com