COWEN AND COMPANY

Merrimack Pharmaceuticals

Outperform (1)

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Reports Q2; Pipeline Advancements Continue On Multiple Fronts

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Conclusion: This morning, Merrimack reported Q2 results that were in line with expectations. More important than the financials, MACK's broad pipeline continues to progress, including the recent addition of a third arm to MM-398's Phase III pancreatic cancer trial, as well as numerous clinical trial initiations and readouts on earlier compounds expected in the next 12 months. We expect steady newsflow to drive outperformance relative to the market over the coming year.

- **Financials In Line.** MACK reported $12.1MM in revenue from its ongoing research collaboration with Sanofi. Q2 net loss was ($20.0MM) vs. our ($21.9MM) estimate. The company ended Q2 with $107MM cash and investments, which it expects to fund operations into H2:13.

- **MM-398's Pancreatic Trial Expanded.** The NAPOLI-1 trial in gemcitabine refractory pancreatic cancer began enrolling an MM-398 (liposomal irinotecan) montherapy arm and a 5-FU/leucovorin control arm in early 2012. However, following the receipt of encouraging safety data on combined MM-398/5-FU/LV from a separate trial in mCRC, in July enrollment began in a third arm, treating with this combination. Trial design assumptions contemplate a 6-week (MM-398) and 3-month (combo) survival difference vs. the shared control arm. Because it will take an uncertain length of time to get the revised protocol approved at the 100+ trial sites, MACK is not yet providing updated timing for the trial readout (previous estimate was mid-2013).

- **Many Other Pipeline Milestones Pending.** Multiple data presentations are expected in H2, including Phase I data on MM-121 (anti-ErbB3) and MM-111(bispecific HER2/ErbB3) at ESMO in September, the first human trial data on MM-302 (HER2-targeted doxorubicin) later in Q4, and the initiation of Phase I for MM-141 (bispecific IGF1R/ErbB3) and Phase II for MM-111.

MACK (08/10)	**$7.40**
Mkt cap	**$670.4MM**
Dil shares out	90.6MM
Avg daily vol	30.0K
52-wk range	$5.7-9.2
Dividend	Nil
Dividend yield	Nil
BV/sh	$0.36
Net cash/sh	$1.12
Debt/cap	NA
ROE (LTM)	NA
5-yr fwd EPS growth (Norm)	NA
S&P 500	**1399.9**

Revenue $MM

FY Dec	2011 Actual	2012E Prior	2012E Current	2013E Prior	2013E Current	2014E Current	2015E Current
Q1	0.0	—	11.3A	—	—	—	—
Q2	0.0	—	12.1A	—	—	—	—
Q3	0.0	10.0	10.0	—	—	—	—
Q4	0.0	10.0	10.0	—	—	—	—
Year	**34.2**	**40.0**	**43.5**	**—**	**35.0**	**25.0**	**72.0**
EV/S	—	—	13.1x	—	16.3x	22.8x	7.9x

EPS $

FY Dec	2011 Actual	2012E Prior	2012E Current	2013E Prior	2013E Current	2014E Current	2015E Current
Q1	—	—	(2.14)A	—	—	—	—
Q2	—	—	(0.22)A	—	—	—	—
Q3	—	(0.24)	(0.25)	—	—	—	—
Q4	—	(0.24)	(0.25)	—	—	—	—
Year	**(1.05)**	**(0.97)**	**(1.25)**	**(0.90)**	**(0.90)**	**(0.95)**	**(0.95)**
P/E	—	—	—	—	—	—	—

Investment Summary

Merrimack Pharmaceuticals is developing therapeutics and companion diagnostics for oncology utilizing a novel Network biology-based approach. A deeper understanding of signaling networks (as opposed to single gene defects) has enabled Merrimack to identify targets with broad application in oncology. Merrimack has a pipeline of eight biologic and nanoparticle-based drug candidates, five of which are in the clinic. Three of the most advanced include MM-121, MM-111, and MM-398. MM-121 is an antibody that blocks ErbB3's ability to co-stimulate signaling through the EGFR and HER2 receptors. In partnership with Sanofi, Merrimack has shown that MM-121 is active in a variety of tumor types (breast, ovarian, lung), and multiple Phase II trials are underway. MM-111 is a bi-specific antibody directed at blocking the HER2/ErbB3 interaction and overcoming resistance to Herceptin/Tykerb. This candidate is in multiple Phase I trials. MM-398 is a liposomal formulation of irinotecan designed to enable selective uptake in tumors. A 405-patient Phase III trial in second line pancreatic cancer began recruiting patients two three treatment arms in July 2012. In addition, promising data from a Phase I trial in second-line colorectal cancer support an ongoing Phase II trial. With the exception of MM-121, Merrimack retains full ownership of this pipeline. Moreover, companion diagnostics for each candidate should facilitate smarter, more personalized clinical trial design. Following a $105MM IPO completed in April 2012, Merrimack is funded into H2:2013, assuming no new business development activity.

Merrimack Pharmaceuticals Upcoming Milestones

Milestone	Timing
Full data from MM-121's Phase I combination trial with paclitaxel in breast and ovarian cancer (ESMO)	Sept 2012
Full data from MM-111's Phase I multi-arm combination trial (ESMO)	Sept 2012
Begin first Phase I trial of MM-141	H2:12
Begin MM-111 Phase II trial in HER2(+) breast cancer	H2:12
Data from MM-302's Phase I trial in HER2(+) breast cancer	H2:12
Begin Phase I trial of MM-DX-929 nanotherapeutic imaging diagnostic	H1:13
Data from MM-121's Phase II ER+/PR+ breast cancer trial	H1:13
Data from MM-121's Phase II NSCLC trial (patient group with mutant EGFR and EGFR inhibitor resistance)	H1:13
Data from MM-121's Phase II NSCLC trial (patient group with wild-type EGFR and EGFR inhibitor naive)	H1:13
Begin first Phase I trial of MM-301	H1:13
Data from MM-398's Phase II colorectal cancer trial	Mid:13
Data from MM-121's Phase II neoadjuvant HER2(-) breast cancer trial	H2:13
Data from MM-151's Phase I trial	H2:13
Data from MM-141's Phase I trial	H2:13
Begin first Phase I trial of MM-131	H2:13

Source: Cowen and Company

Merrimack Pharmaceuticals Quarterly P&L Model

	H1:11A	H2:11A	2011A	Q1:12A	Q2:12A	Q3:12E	Q4:12E	2012E
MM-398 Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MM-121 Royalties	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
U.S. MM-121 End-User Revenue								
Ex-U.S. MM-121 End-User Revenue								
MM-111 Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MM-302 Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MM-151 Revenue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Research and Development Revenues	13.1	21.2	34.2	11.3	12.1	10.0	10.0	43.5
MM-121 Cost Reimbursement	10.1	15.0	25.1	8.1	8.0	8.0	8.0	32.1
MM-121 Upfront Amort.	2.5	2.5	5.0	1.3	1.3	1.3	1.3	5.0
MM-121 Milestones	0.4	2.2	2.6	1.4	0.6	0.6	0.6	3.2
Other	0.1	1.5	1.6	0.5	0.1	0.2	0.2	1.0
Total Revenue	**13.1**	**21.2**	**34.2**	**11.3**	**12.1**	**10.0**	**10.0**	**43.5**
COGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross margin								
R&D	49.2	51.4	100.6	31.7	28.8	29.0	29.5	118.9
R&D as a % of sales								
SG&A	7.9	6.5	14.5	3.7	3.6	3.6	3.6	14.5
SG&A as a % of sales								
Contingent Consideration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Expenses	**57.1**	**58.0**	**115.1**	**35.4**	**32.4**	**32.6**	**33.1**	**133.4**
Operating Income/Loss	**(44.1)**	**(36.8)**	**(80.9)**	**(24.1)**	**(20.3)**	**(22.6)**	**(23.1)**	**(90.0)**
Interest Income	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Interest Expense	(0.0)	(0.0)	(0.0)	(0.0)	0.0	0.0	0.0	(0.0)
Other Income (Expense)	1.3	(0.2)	1.2	0.6	0.2	0.0	0.0	0.8
Attributable to non-controlling interest	(0.2)	(0.2)	(0.5)	(0.1)	(0.1)	(0.2)	(0.2)	(0.5)
Pre-tax Income/Loss	**(42.5)**	**(36.7)**	**(79.2)**	**(23.3)**	**(20.0)**	**(22.4)**	**(22.9)**	**(88.7)**
Tax rate (%)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Provision for (Benefit from) income taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Income (Loss)	**(42.5)**	**(36.7)**	**(79.2)**	**(23.3)**	**(20.0)**	**(22.4)**	**(22.9)**	**(88.7)**
GAAP EPS, Basic	**($0.56)**	**($0.49)**	**($1.05)**	**($2.14)**	**($0.22)**	**($0.25)**	**($0.25)**	**($1.25)**
Basic Shares Outstanding	75.3	75.3	75.3	11.8	90.6	91.0	91.3	71.2
Diluted Shares Outstanding	75.3	75.3	75.3	11.8	110.6	111.0	111.3	86.2

Source: Cowen and Company

Merrimack Pharmaceuticals Annual P&L Model

	2011A	2012E	2013E	2014E	2015E	2016E
MM-398 Revenue	0.0	0.0	0.0	0.0	50.0	180.0
MM-121 Royalties	0.0	0.0	0.0	0.0	0.0	0.0
U.S. MM-121 End-User Revenue						
Ex-U.S. MM-121 End-User Revenue						
MM-111 Revenue	0.0	0.0	0.0	0.0	0.0	0.0
MM-302 Revenue	0.0	0.0	0.0	0.0	0.0	0.0
MM-151 Revenue	0.0	0.0	0.0	0.0	0.0	0.0
Research and Development Revenues	34.2	43.5	35.0	25.0	22.0	25.0
MM-121 Cost Reimbursement	25.1	32.1	25.0	12.0	5.0	3.0
MM-121 Upfront Amort.	5.0	5.0	5.0	5.0	5.0	5.0
MM-121 Milestones	2.6	3.2	4.5	7.5	11.5	16.5
Other	1.6	1.0	0.5	0.5	0.5	0.5
Total Revenue	**34.2**	**43.5**	**35.0**	**25.0**	**72.0**	**205.0**
Y/Y growth					*90%*	*90%*
COGS	0.0	0.0	0.0	0.0	5.0	18.0
Gross margin						*78%*
R&D	100.6	118.9	120.0	125.0	130.0	140.0
R&D as a % of sales						*39%*
SG&A	14.5	14.5	16.0	18.0	66.0	70.0
SG&A as a % of sales						*0%*
Contingent Consideration	0.0	0.0	0.0	0.0	0.0	0.0
Total Expenses	**115.1**	**133.4**	**136.0**	**143.0**	**201.0**	**228.0**
Operating Income/Loss	**(80.9)**	**(90.0)**	**(101.0)**	**(118.0)**	**(129.0)**	**(23.0)**
Interest Income	0.1	0.0	0.0	0.0	0.0	0.0
Interest Expense	(0.0)	(0.0)	0.0	0.0	0.0	0.0
Other Income (Expense)	1.2	0.8	0.0	0.0	0.0	0.0
Attributable to non-controlling interest	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Pre-tax Income/Loss	**(79.2)**	**(88.7)**	**(100.5)**	**(117.5)**	**(128.5)**	**(22.5)**
Tax rate (%)	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Provision for (Benefit from) income taxes	0.0	0.0	0.0	0.0	0.0	0.0
Net Income (Loss)	**(79.2)**	**(88.7)**	**(100.5)**	**(117.5)**	**(128.5)**	**(22.5)**
GAAP EPS, Basic	**($1.05)**	**($1.25)**	**($0.90)**	**($0.95)**	**($0.95)**	**($0.15)**
Basic Shares Outstanding	75.3	71.2	112.0	124.0	135.0	145.0
Diluted Shares Outstanding	75.3	86.2	132.0	144.0	155.0	165.0

Source: Cowen and Company

Addendum

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Ticker	Company Name
MACK	Merrimack Pharmaceuticals

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(a) Assumptions: Time horizon is 12 months; S&P 500 is flat over forecast period.

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