

Reason for report:

COMPANY UPDATE

SAGE THERAPEUTICS, INC.

PPD Study Shows Encouraging Effect but in Small N, PT to \$107

• **Bottom Line:** This morning SAGE announced data from an exploratory study of SAGE-547 in Postpartum Depression (PPD). The study initially intended to enroll 10-15 patients but after '547 was able to induce remission in the first 4 treated women the trial was stopped early. Overall, while the small sample and lack of placebo keep us cautiously optimistic on the drug's prospects in PPD, we believe the very large magnitude of effect and strong clinical logic are more than sufficient to justify investment in a larger trial. While SAGE plans to advance '547 into a placebo-controlled PPD study by YE15, our PT increases to \$107 on the addition of \$155MM in peak risk-adjusted (20% probability) postpartum depression sales to our model.

• **Small SAGE-547 PPD exploratory study shows profound effect in 4 patients.** At baseline, 4 treated patients had an average 26.5 score on the Hamilton Depression Rating Scale 17 (HAM-D-17), above the threshold of 24 points for severe depression. After 60 hours of SAGE-547 treatment, patients' mean HAM-D-17 score dropped to 1.8 points, well below the bar for complete remission (under 7 points on the HAM-D-17 means no depression). Recall that in our [preview](#) of the data we noted that MEDACorp KOLs believe a ~40% reduction in a small/short study of 10 refractory PPD patients would be enough to warrant further research of '547 in a bigger trial. Though in a smaller N, SAGE-547's 93% reduction on the HAM-D-17 was >2x above this hurdle and thus meets the necessary threshold for moving forward, in our view.

• **The encouraging signal is consistent with the conclusion of our deep dive ([LINK](#)) on SAGE-547** which included specialist feedback on the allopregnanolone PPD hypothesis and a review of 8 papers that posit a connection between ALLO, progesterone, extra-synaptic GABA_A-Rs and PPD onset. We also found a strong clinical rationale for '547 in essential tremor (ET) where data from a small crossover study is expected by mid-2015.

• **While by no means conclusive, the data today suggest that extra-synaptic GABA_A-Rs could be a "druggable" target in indications beyond status epileptics.** With SAGE-547 data only in super refractory status epilepticus (SRSE), investors have wondered whether extra-synaptic GABA_A-Rs are broadly therapeutically relevant, or conversely only viable targets in states of extreme seizure or benzodiazepine failure. While the PPD data are by no means conclusive, because specialists state that benzodiazepines are ineffective as a monotherapy in PPD, the results add support to the hypothesis that the allosteric modulation of extra-synaptic GABA_A-Rs may be beneficial not only to seizure patients in other areas of CNS.

• **Should a placebo-controlled SAGE-547 PPD trial confirm the signal observed in the pilot study,** SAGE plans to advance an orally bioavailable compound into later PPD trials.

Key Stats: (NASDAQ:SAGE)

S&P 500 Health Care Index: 853.59
Price: \$75.15

Price Target: \$107.00 from \$93.00

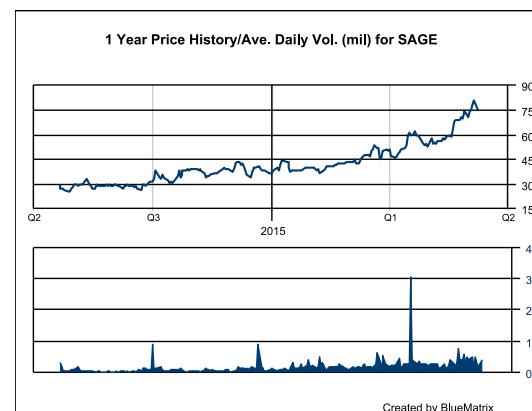
Methodology:

DCF analysis with 11% discount rate

52 Week High: \$81.20
52 Week Low: \$24.25
Shares Outstanding (mil): 30.3
Market Capitalization (mil): \$2,277.0
Book Value/Share: \$2.45
Cash Per Share: \$7.45
Dividend (ann): \$0.00
Dividend Yield: 0.0%

Shares Outstanding (mil): Fully diluted shares outstanding estimated as of 3Q15E

Cash Per Share: Cash/diluted shares 2Q15



Dec Yr	1Q	2Q	3Q	4Q	FY Rev	1Q	2Q	3Q	4Q	FY EPS	P/E
2014A	0.0	0.0	0.0	0.0	0.0	(\$3.71)	(\$4.57)	(\$0.50)	(\$0.48)	(\$1.67)	NM
2015E	0.0A	0.0	0.0	0.0	0.0	(\$0.66)A	(\$0.67)	(\$0.68)	(\$0.71)	(\$2.72)	NM
2016E	--	--	--	--	0.0	--	--	--	--	(\$3.69)	NM

Source: Company Information and Leerink Partners LLC Research
GAAP EPS.

INVESTMENT THESIS

We rate SAGE shares Outperform. SAGE Therapeutics (NASDAQ: SAGE) is a neuroscience company started by an experienced team of R&D leaders and CNS specialists focused on developing medicines to treat life-threatening, rare neurological disorders. SAGE's lead product, SAGE-547, is in clinical development for super-refractory status epilepticus (SRSE) and is the first of many compounds the company is developing in its positive allosteric modulation (PAM) portfolio. SAGE-547 is a PAM of both synaptic and extra-synaptic GABA_A receptors that rapidly advanced into Phase I/II clinical development in early 2014. The robust clinical potential of '547 was demonstrated under an emergency Investigational New Drug (IND) program in which 5 out of 7 SAGE-547-treated SRSE patients (each of whom had spent over 30 days in the ICU) were successfully weaned out of a medically induced coma. These data were corroborated by final results from a phase I/II study, in which 77% of SAGE-547-treated SRSE patients have been weaned off anesthesia while on '547 therapy. While perfect natural history data is lacking in SRSE, published literature suggests that SRSE patients are weaned successfully in ~30% of cases. We see SAGE as a potential platform company, and upcoming SAGE-547 data readouts in postpartum depression and essential tremor will test the relevance of extra-synaptic GABA-Rs in other indications. Beyond '547, SAGE is developing a seizure franchise of advanced next generation compounds of novel GABA_A allosteric modulators for the treatment of SE and other forms of seizure and epilepsy. SAGE-689 is currently in preclinical development for status epilepticus and is expected to enter a Phase I trial in 2015. In addition, SAGE-217 is being developed as an oral therapy for orphan genetic epilepsies such as Dravet syndrome and Rett. We believe SAGE shares are poised to appreciate as de-risking clinical catalysts are realized for the company's lead product and allosteric modulation platform.

VALUATION

We derive a \$107 (from \$93 previously) per share price target for SAGE shares based on an 11% discount rate and a 3% terminal growth rate. Our base case assumption assumes ~\$1.36B in peak-risk adjusted 2024E sales based on a 70% probability of approval for SAGE-547 in status epilepticus, \$155MM in peak probability weighted PPD sales, and assumes ~\$380MM in peak revenues in 2027E for SAGE-689 and SAGE-217.

RISKS TO VALUATION

Risks to our valuation include disappointing clinical data, regulatory setbacks, and commercial shortfalls. Because SAGE has only one product currently being examined in patients, the occurrence of any of these could impact the stock significantly.

SAGE P&L (\$MM) GAAP	2013	1Q14	2Q14	3Q14	4Q14	2014	1Q15	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E
SAGE-547	-	-	-	-	-	-	-	-	-	-	-	-	-	44.2
SAGE-689	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAGE-217	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tremor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue (p/w)	-	-	-	-	-	-	-	-	-	-	-	-	-	44.2
COGS	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4
R&D	14.4	4.2	4.4	6.6	8.9	24.1	12.9	14.0	15.0	16.0	57.9	75.3	82.8	91.1
SG&A	3.9	1.6	1.8	2.9	3.4	9.7	4.0	4.1	4.1	4.2	16.4	29.5	53.1	39.8
Operating Expenses	18.3	5.8	6.2	9.5	12.4	33.8	16.9	18.1	19.1	20.2	74.3	104.8	135.9	135.3
Operating Income	(18.3)	(5.8)	(6.2)	(9.5)	(12.4)	(33.8)	(16.9)	(18.1)	(19.1)	(20.2)	(74.3)	(104.8)	(135.9)	(91.1)
Interest Income (Expense)	0.0	-	0.0	0.0	0.0	0.0	0.0	-	-	-	0.0	-	-	-
Other Income (expense)	(0.0)	-	(0.0)	(0.0)	(0.0)	(0.0)	0.0	-	-	-	0.0	-	-	-
EBT	(18.3)	(5.8)	(6.2)	(9.5)	(12.4)	(33.8)	(16.9)	(18.1)	(19.1)	(20.2)	(74.3)	(104.8)	(135.9)	(91.1)
Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income (Loss)	(18.3)	(6.1)	(7.8)	(9.9)	(12.4)	(36.1)	(16.9)	(18.1)	(19.1)	(20.2)	(74.3)	(104.8)	(135.9)	(91.1)
Diluted EPS	\$ (1.92)	\$ (3.71)	\$ (4.57)	\$ (0.50)	\$ (0.48)	\$ (1.67)	\$ (0.66)	\$ (0.67)	\$ (0.68)	\$ (0.71)	\$ (2.72)	\$ (3.69)	\$ (4.55)	\$ (2.95)
Basic Shares Outstanding	9.5	1.6	1.7	19.6	25.7	21.6	25.7	27.0	28.3	28.4	27.3	28.4	29.9	30.9
Diluted Shares Outstanding	9.5	1.6	1.7	19.6	25.7	21.6	25.7	27.0	28.3	28.4	27.3	28.4	29.9	30.9

Source: SEC Filings and Leerink Partners Research

SAGE BS & CFS (\$MM) GAAP	2013	1Q14	2Q14	3Q14	4Q14	2014	1Q15E	2Q15E	3Q15E	4Q15E	2015E	2016E	2017E	2018E
Net Cash	8.1	55.2	49.1	136.7	127.8	127.8	113.2	225.4	207.4	188.4	188.4	91.8	119.1	40.5
Cash & Equivalents	8.1	55.2	49.1	136.7	127.8	127.8	113.2	225.4	207.4	188.4	188.4	91.8	119.1	40.5
Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change in Cash	5.3	47.4	(6.1)	81.4	(8.8)	113.8	(14.7)	112.2	(17.9)	(19.0)	60.6	(96.6)	27.3	(78.6)
Operating Cash Flow	(17.5)	(5.6)	(6.1)	(12.6)	(8.8)	(33.1)	(14.7)	(17.0)	(17.9)	(19.0)	(68.6)	(95.6)	(120.7)	(75.6)
Net Income (Loss)	(18.3)	(5.8)	(7.8)	(9.9)	(12.4)	(35.8)	(16.9)	(18.1)	(19.1)	(20.2)	(74.3)	(104.8)	(135.9)	(91.1)
SOE	0.1	0.2	0.4	0.6	0.7	1.8	1.0	1.1	1.1	1.2	4.5	8.4	13.6	13.1
D&A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.6	2.4
Other	0.7	0.0	1.3	(3.3)	2.8	0.8	1.2	-	-	-	1.2	-	-	-
Investing Cash Flow	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(1.0)	(2.0)	(3.0)
CapEx	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(1.0)	(2.0)	(3.0)
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing Cash flow	22.8	53.0	-	94.0	-	147.0	-	129.2	-	-	129.2	-	150.0	-
Equity Issuance (Buyback)	22.8	53.0	-	94.0	-	147.0	-	129.2	-	-	129.2	-	150.0	-
Debt Issuance (Retirement)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: SEC Filings and Leerink Partners Research

SAGE DCF Analysis	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	TV
Cash Flow From Operations (\$MM)	(33)	(69)	(96)	(121)	(76)	79	253	433	570	635	775	719	666	636	513	426	365	
Cash Flow From Investing (\$MM)	(0)	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	
Net Borrowing (Repayment) (\$MM)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Free Cash Flow (\$MM)	(33)	(69)	(97)	(123)	(79)	75	248	427	563	627	766	710	657	627	504	417	356	4589
Discount Periods	-	-	0.60	1.60	2.60	3.60	4.60	5.60	6.60	7.60	8.60	9.60	10.60	11.60	12.60	13.60	14.60	
NPV FCF (\$MM)	-	(41)	(91)	(104)	(60)	52	153	238	283	284	312	261	217	187	135	101	78	1,000

Sum NPV FCF (\$MM)	3005
Net Cash 2Q15E	225
Implied SAGE Mkt Cap (\$MM)	\$ 3,230
SAGE Per Share Value	\$ 107

Cost of Equity	11.0%
TG Rate	3.0%
Diluted Shares Outstanding 3Q15E	30.3

Source: Leerink Partners Research, company information

SAGE-547 SRSE Revenue Model	2014	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
US Status Epilepticus Patients	150,000	151,350	152,712	154,087	155,473	156,873	158,284	159,709	161,146	162,597	164,060	165,537	167,026	168,530	170,046	171,577	173,121
% refractory to benzodiazepines	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
Second-Line Status Epilepticus Patients	50,000	50,450	50,904	51,362	51,824	52,291	52,761	53,236	53,715	54,199	54,687	55,179	55,675	56,177	56,682	57,192	57,707
% refractory to AEDs	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Refractory Status Epilepticus (RSE) Patients	35,000	35,315	35,633	35,954	36,277	36,604	36,933	37,265	37,601	37,939	38,281	38,625	38,973	39,324	39,678	40,035	40,395
% super refractory - 1 failed wean attempt	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%	71%
Super RSE Patients	25,000	25,225	25,452	25,681	25,912	25,779	25,642	25,128	24,978	25,202	25,429	26,238	26,883	27,414	27,865	28,260	28,616
%RSE treated with SAGE-547	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%	4.0%	5.0%	5.0%	5.0%	3.5%	2.5%	1.7%	1.2%	0.8%	0.6%
%SRSE treated with SAGE-547	0.0%	0.0%	0.0%	0.0%	3.0%	15.0%	25.0%	40.0%	50.0%	60.0%	70.0%	49.0%	34.3%	24.0%	16.8%	11.8%	8.2%
Patients on SAGE-547	-	-	-	-	777	4,233	7,149	11,542	14,369	17,018	19,715	14,208	10,176	7,256	5,160	3,661	2,594
Annual Cost of Therapy	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000
US Gross Revenues (\$MM)	0	0	0.0	0.0	50.5	275.1	464.7	750.2	934.0	1106.2	1281.4	923.5	661.4	471.7	335.4	238.0	168.6
Approval Probability	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
US Probability-Weighted Revenues (\$MM)	0	0	0.0	0.0	35.4	192.6	325.3	525.1	653.8	774.3	897.0	646.5	463.0	330.2	234.8	166.6	118.0
ROW as % of US	0%	0%	0%	10%	25%	35%	45%	50%	50%	50%	50%	83%	130%	201%	198%	195%	193%
SAGE-547 ROW Gross Revenues (\$MM)	-	-	-	-	13	96	209	375	467	553	641	763	863	949	664	465	325
SAGE-547 ROW p(w) Revenues (\$MM)	0	0	0	0.0	8.8	67.4	146.4	262.6	326.9	387.2	464.6	534.3	603.8	664.1	464.9	325.4	227.8
y/y Growth Rate					762%	217%	179%	124%	118%	20.0%	15.0%	13.0%	10.0%	-30.0%	-30.0%	-30.0%	
	-	-	-	-	63.2	371.4	673.8	1,125.3	1,401.0	1,659.3	1,922.2	1,686.8	1,523.9	1,420.4	999.5	702.9	494.0
SAGE-547 WW P(w) Revenues	0	0	0	0.0	44.2	260.0	471.7	787.7	980.7	1161.5	1361.6	1180.8	1066.7	994.3	699.6	492.0	345.8

Assumptions	
Annual Cost	\$65,000
Probability of Approval	70%

Source: Leerink Partners Research, company information

Postpartum Depression Model	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Births in US Per Yr (adj for multiple births)	3,802,181	3,836,401	3,870,928	3,905,767	3,940,918	3,976,387	4,012,174	4,048,284	4,084,718	4,121,481	4,158,574	4,196,001	4,233,765	4,271,869	4,310,316	4,349,109	4,388,251
% of pts with PPD	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
PPD cases in the US	380,218	383,640	387,093	390,577	394,092	397,639	401,217	404,828	408,472	412,148	415,857	419,600	423,377	427,187	431,032	434,911	438,825
% treated with GABA PAM	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	5.0%	9.0%	13.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
PPD pts on GABA PAM	-	-	-	-	-	-	-	8,097	20,424	37,093	54,061	62,940	63,506	64,078	64,655	65,237	65,824
Cost Per Month	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
Avg Months of Therapy	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Gross Revenues (\$MM)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 97	\$ 245	\$ 445	\$ 649	\$ 755	\$ 762	\$ 769	\$ 776	\$ 783	\$ 790
Probability of Success	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Probability-Weighted Revenues	-	-	-	-	-	-	-	19.4	49.0	89.0	129.7	151.1	152.4	153.8	155.2	156.6	158.0

Assumptions	
Cost Per Month	\$2,000
Avg Months of therapy	6.0
Probability of Approval	20%

Source: Leerink Partners Research, company information

Essential Tremor Rev. Model	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Essential Tremor Pts. In US	10,000,000	10,090,000	10,180,810	10,272,437	10,364,889	10,458,173	10,552,297	10,647,267	10,743,093	10,839,781	10,937,339	11,035,775	11,135,097	11,235,313	11,336,430	11,438,458	11,541,404
% moderate-to-severe - require pharmacotreatment	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Moderate-to-Severe ET Pts. In US	1,000,000	1,009,000	1,018,081	1,027,244	1,036,489	1,045,817	1,055,230	1,064,727	1,074,309	1,083,978	1,093,734	1,103,577	1,113,510	1,123,531	1,133,643	1,143,846	1,154,140
% treated by GABA PAM	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	1.5%	3.0%	4.5%	5.5%	6.5%	7.0%	7.5%	8.0%	8.0%	8.0%
ET Patients on GABA PAM	-	-	-	-	-	-	5,276	15,971	32,229	48,779	60,155	71,733	77,946	84,265	90,691	91,508	92,331
Annual Cost	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Gross Revenues	0	0	0	0	0	0	52.8	159.7	322.3	487.8	601.6	717.3	779.5	842.6	906.9	915.1	923.3
Probability of Success	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Probability-Weighted Revenues	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Assumptions																	
Annual Cost	\$10,000																
Probability of Approval	0%																

Source: Leerink Partners Research, essentialtremor.org, Company Estimates

Product	Event	Timing
SAGE-547	Top-line Phase I/II Data	4Q14
SAGE-547	End-of-phase II meeting with FDA	1Q15
SAGE-547	Proof-of-Concept Data for ET and PPD Studies	mid-15
SAGE-547	Initiate Pivotal STATUS Trial	mid-15
SAGE-547	Initiate placebo-controlled PPD study	4Q15
SAGE-217	Initiate Phase I Studies	4Q15
SAGE-689	Initiate Phase I Studies	4Q15

Source: SEC Filings and Leerink Partners Research

Disclosures Appendix

Analyst Certification

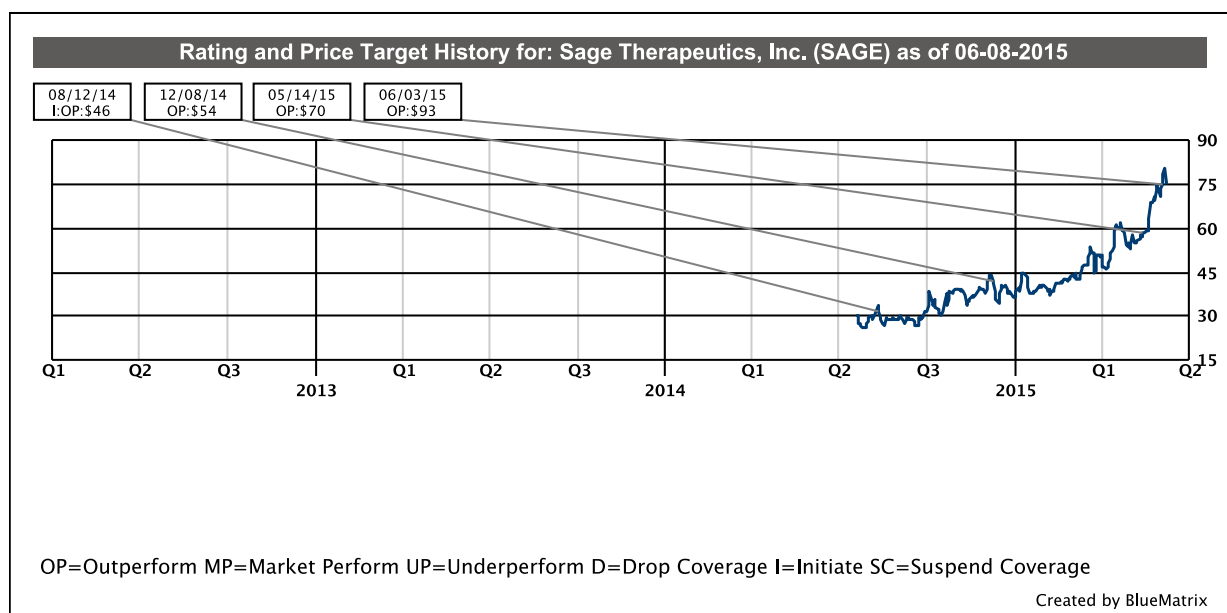
I, Paul Matteis, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation

We derive a \$107 (from \$93 previously) per share price target for SAGE shares based on an 11% discount rate and a 3% terminal growth rate. Our base case assumption assumes ~\$1.36B in peak-risk adjusted 2024E sales based on a 70% probability of approval for SAGE-547 in status epilepticus, \$155MM in peak probability weighted PPD sales, and assumes ~\$380MM in peak revenues in 2027E for SAGE-689 and SAGE-217.

Risks to Valuation

Risks to our valuation include disappointing clinical data, regulatory setbacks, and commercial shortfalls. Because SAGE has only one product currently being examined in patients, the occurrence of any of these could impact the stock significantly.



Distribution of Ratings/Investment Banking Services (IB) as of 03/31/15				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OP]	151	70.20	55	36.00
HOLD [MP]	64	29.80	2	3.00
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

This information (including, but not limited to, prices, quotes and statistics) has been obtained from sources that we believe reliable, but we do not represent that it is accurate or complete and it should not be relied upon as such. All information is subject to change without notice. This is provided for information purposes only and should not be regarded as an offer to sell or as a solicitation of an offer to buy any product to which this information relates. The Firm, its officers, directors, employees, proprietary accounts and affiliates may have a position, long or short, in the securities referred to in this report, and/or other related securities, and from time to time may increase or decrease the position or express a view that is contrary to that contained in this report. The Firm's salespeople, traders and other professionals may provide oral or written market commentary or trading strategies that are contrary to opinions expressed in this report. The Firm's proprietary accounts may make investment decisions that are inconsistent with the opinions expressed in this report. The past performance of securities does not guarantee or predict future performance. Transaction strategies described herein may not be suitable for all investors. Additional information is available upon request by contacting the Editorial Department at One Federal Street, 37th Floor, Boston, MA 02110.

Like all Firm employees, analysts receive compensation that is impacted by, among other factors, overall firm profitability, which includes revenues from, among other business units, Institutional Equities, and Investment Banking. Analysts, however, are not compensated for a specific investment banking services transaction.

MEDACorp is a network of healthcare professionals, attorneys, physicians, key opinion leaders and other specialists accessed by Leerink and it provides information used by its analysts in preparing research.

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

Leerink Partners LLC makes a market in Sage Therapeutics, Inc.

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

©2015 Leerink Partners LLC. All rights reserved. This document may not be reproduced or circulated without our written authority.

Leerink Partners 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
	Michael Schmidt, Ph.D.	(617) 918-4588	michael.schmidt@leerink.com
	Paul Matteis	(617) 918-4585	paul.matteis@leerink.com
	Jonathan Chang, Ph.D.	(617) 918-4015	jonathan.chang@leerink.com
	Richard Goss	(617) 918-4059	richard.goss@leerink.com
Life Science Tools & Diagnostics	Dan Leonard	(212) 277-6116	dan.leonard@leerink.com
	Kevin C. Chen	(212) 277-6045	kevin.chen@leerink.com
	Michael A. Sarcone, CFA	(212) 277-6013	michael.sarcone@leerink.com
Pharmaceuticals/Major	Seamus Fernandez	(617) 918-4011	seamus.fernandez@leerink.com
	Aneesh Kapur	(617) 918-4576	aneesh.kapur@leerink.com
Specialty Pharmaceuticals	Jason M. Gerberry, JD	(617) 918-4549	jason.gerberry@leerink.com
	Derek C. Archila	(617) 918-4851	derek.archila@leerink.com
Medical Devices, Cardiology & Orthopedics	Danielle Antalffy	(212) 277-6044	danielle.antalffy@leerink.com
	Puneet Souda	(212) 277-6091	puneet.souda@leerink.com
	Richard Newitter	(212) 277-6088	richard.newitter@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
Digital Health	Steven Wardell	(617) 918-4097	steven.wardell@leerink.com
Sr. Editor/Supervisory Analyst	Mary Ellen Eagan, CFA	(617) 918-4837	maryellen.eagan@leerink.com
Supervisory Analysts	Randy Brougher		randy.brougher@leerink.com
	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
255 California Street, 12th Floor
San Francisco, CA 94111
(415) 905-7200