Minerva Neurosciences, Inc. (NERV)

Initiating Coverage at Market Outperform; Developing Truly Novel Drugs for CNS Diseases

MARKET OUTPERFORM | Price: $6.78 | Target Price: $16.00

MARKET DATA

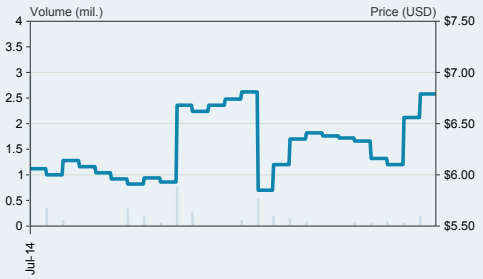
Price	$6.78
52-Week Range:	$5.57 - $7.54
Shares Out. (M):	18.3
Market Cap ($M):	$124.1
Average Daily Vol. (000):	197.0
Cash (M):	$2
Cash/Share:	$0.12
LT Debt (M):	$0

Source: Thomson Reuters and JMP Securities LLC

FY DEC		2013A	2014E	2015E
Revenue ($M)	1Q	$0.0	$0.0A	--
	2Q	$0.0	$0.0	--
	3Q	$0.0	$0.0	--
	4Q	$0.0	$0.0	--
	FY	**$0.0**	**$0.0**	**$0.0**
EPS	1Q	--	($0.34)A	--
	2Q	--	($0.28)	--
	3Q	--	($0.31)	--
	4Q	--	($0.42)	--
	FY	**($0.78)**	**($1.35)**	**($0.95)**

Source: Company reports and JMP Securities LLC

STOCK PRICE PERFORMANCE



INVESTMENT HIGHLIGHTS

We are initiating coverage on Minerva Neurosciences with a Market Outperform rating and $16 price target. Minerva Neurosciences is a biopharmaceutical company focused on the development of novel therapies for the treatment of CNS diseases. In our view, there is significant unmet medical need in the CNS space with current therapies having limited efficacy or intolerable side effects that can cause discontinuation of therapy. Minerva has assembled a portfolio of novel products that we believe have demonstrated proof-of-concept and that have the potential to differentiate from standard-of-care therapies in multiple blockbuster commercial markets. Furthermore, we believe the company has a management team with expertise and demonstrated success to execute on these opportunities. The company completed its IPO in June 2014 and we anticipate multiple clinical catalysts in the coming 12-18 months that, in our opinion, could drive significant value. Our $16 price target is derived through a sum-of-the-parts NPV analysis of MIN-101 and MIN-202.

MIN-101 may become the first FDA-approved drug for the treatment of negative symptoms in schizophrenia. MIN-101 is an antagonist of the serotonin (5HT2A) and sigma2 receptors. In a Phase 2a trial, it showed a statistically significant improvement of negative symptoms in schizophrenia. Minerva plans to initiate a Phase 2b trial in patients with predominately negative symptoms in 1Q15; results are expected in 1H16. If approved, we believe MIN-101 has large market potential as differentiated therapy specific to negative symptoms and possibly also as an adjunct to the current standard of care. We project the launch of MIN-101 in 2019 and U.S. sales of ~$490MM in 2023 (net of royalties owed), at peak penetration, assuming a 45% probability of success.

MIN-202 is a novel therapy for insomnia with a large pharma partner on board. MIN-202, an orexin 2 antagonist being developed in partnership with Janssen Pharma for treatment of insomnia. This mechanism is differentiated to current insomnia drugs and may have a more favorable side effect profile (less residual daytime sedation) and less abuse potential. A Phase 1 trial is ongoing in secondary insomnia and we expect results in 4Q14. We project launch of MIN-202 in 2020, peak royalties from the product of $84MM, and assume a 35% probability of success.

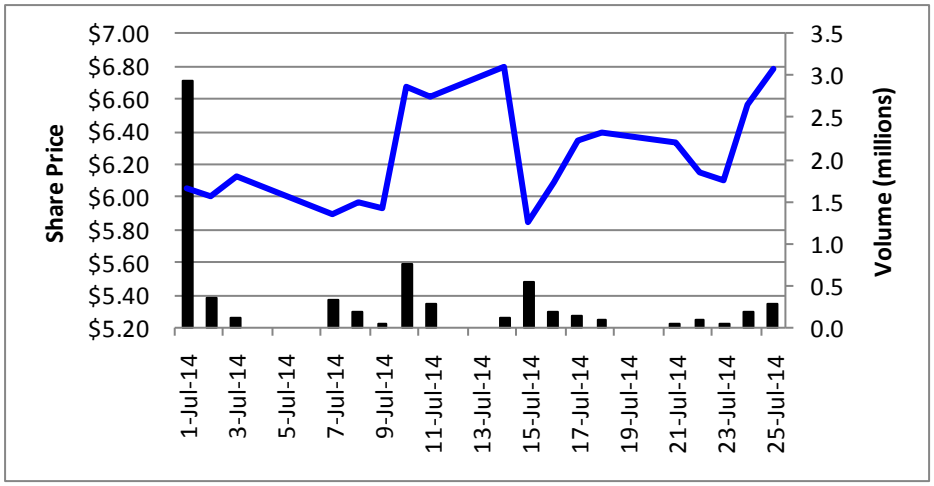
MIN-117 may address large market need of partial and non-responders in MDD MIN-117 is a novel, small molecule serotonin (5-HT1A) receptor antagonist and a serotonin and dopamine reuptake inhibitor being developed for major depressive disorder (MDD). Results from a Phase 2a trial demonstrated activity in both partial and non-responders to current therapies (SSRIs and SNRIs), and faster onset of action (within 2 weeks vs. SSRI typical onset within 4 weeks). We believe the simultaneous, multiple mechanism of action of MIN-117 may have efficacy in patients with partial or no response to current treatment options.

Jason N. Butler, PhD
jbutler@jmpsecurities.com
(212) 906-3505

COMPANY DESCRIPTION

Minerva Neurosciences is a clinical-stage biopharmaceutical company, headquartered in Cambridge, MA, focused on the development and commercialization of novel drug candidates to treat patients suffering from CNS diseases. The company has four novel clinical stage candidates with validated mechanisms of action, each having the potential to differentiate in important unmet medical needs. Its lead product candidates are MIN-101, for the treatment of schizophrenia, and MIN-202, which Minerva is co-developing with Jansen Pharma for the treatment of patients suffering from primary and secondary insomnia. In addition, the portfolio includes MIN-117, for the treatment of patients suffering from major depressive disorder, or MDD, and MIN-301, for the treatment of patients suffering from Parkinson's disease. Based on its current capital, the company intends to focus resources on the development of MIN-101 and MIN-202; however, development of pipeline candidates could be accelerated should additional funds, including from non-dilutive sources or partnerships, become available.

FIGURE 1. Minerva Stock Chart



Source: Thomson Reuters

KEY UPCOMING MILESTONES

2H14	MIN-101	Top-line results from Phase 1 trial, 1x day formulation
2H14	MIN-202	Top-line results from Phase 1b trial in secondary insomnia
1Q15	MIN-101	Initiate Phase 2b trial in schizophrenia
2H15	MIN-202	Results from Phase 1b trial in secondary insomnia
2H15	MIN-202	Results from Phase 1b trial in primary insomnia
1H16	MIN-101	Results from Phase 2b trial in schizophrenia

INVESTMENT THESIS

Minerva is a biopharmaceutical company focused on the development of a portfolio of novel treatments for serious neuropsychiatric diseases. The company has four clinical stage development candidates with the potential to provide clinically meaningful differentiation vs. current standards of care. Proof-of-concept data have already been generated for the two most advanced candidates, MIN-101 and MIN-117, which are now entering Phase 2b development. We anticipate transformative, value-inflecting clinical data read-outs for three of the programs in the coming 12-18 months. In addition, the company has a strong management team, investor base, and large pharma partners.

Lead development candidate MIN-101 has demonstrated encouraging results in a Phase 2a trial in schizophrenia. MIN-101 is a small molecule antagonist of the serotonin (5HT2A) and sigma2 receptors being developed for patents with schizophrenia. Schizophrenia affects over 24 million people worldwide, with approximately 2.2 million patients in the U.S., reflecting a market opportunity of ~$4 billion. Current standard of care treatments are atypical antipsychotics that address only the positive symptoms (e.g., psychotic behavior, hallucinations, delusions, agitation), but have no impact on negative symptoms (e.g., disrupted emotion, social withdrawal) and cognition that are equally, and possibly more, debilitating to patients. We believe there could be a substantial opportunity for a schizophrenia drug that addresses the full spectrum of symptoms and Phase 2a results for MIN-101 support this potential. Results from a ~100 patient Phase 2a trial demonstrated that MIN-101 significantly improved negative symptoms ($p<0.05$), with favorable trends for the total positive and negative symptoms scale (PANSS) and positive symptoms and cognition. Minerva intends to initiate a 255 patient Phase 2b trial in 1Q15 in patients with predominantly negative symptoms of schizophrenia; results are anticipated in 1H16.

MIN-202 has the potential to address insomnia with a novel mechanism and differentiated safety profile. MIN-202 is an orexin 2 antagonist being developed in partnership with Janssen Pharma for the treatment of insomnia. MIN-202's mechanism of action may have an improved safety and tolerability profile without the daytime sedation and cognitive impairment that many sleep drugs can cause. A Phase I trial suggested a relationship between a single-ascending dose of MIN-202 and rapid induction of sleep and as preservation of REM sleep with no residual daytime sedation. Importantly, MIN-202 may have less abuse potential than current sleep drugs. A Phase 1b trial is ongoing for MIN-202 and results are expected in 2H14. Minerva plans to conduct two Phase Ib clinical trials of MIN-202, with the first expected to begin enrollment in late 2014 and the second in 1Q15. We anticipate results from both Phase 1b trials by YE2015. We note that Minerva is responsible for only $5MM in development costs between now and the end of 2015, with Janssen responsible for any additional costs, following which the companies will split development costs, with Minerva paying a 40% share.

Pipeline candidates include MIN-117 for depression and MIN-301 for Parkinson's disease. Minerva's pipeline includes two additional candidates that both address blockbuster market opportunities. MIN-117 is a novel small molecule serotonin (5-HT1A) receptor antagonist and a serotonin and dopamine reuptake inhibitor being developed for patients with major depressive disorder (MDD). MDD affects 30 million people in the U.S. and Western Europe and represents a current market opportunity in excess of $5 billion. Two-thirds of patients respond inadequately or not at all to current

therapies and other limitations include slow onset of action and adverse tolerability profiles. MIN-301 is a novel soluble recombinant form of NRG-1b1, which is an activator of ErbB4. IND-enabling studies are ongoing for MIN-301 and Phase 1 healthy volunteer trials are expected to be conducted in 2015. In our view, these candidates may show differentiated potential in blockbuster indications. Any positive clinical developments would provide upside to our valuation assumptions.

Strong management team and balance sheet to fund development programs through key value-inflecting milestones. The company's CEO, Rogerio Vivaldi built Genzyme's commercial presence in Brazil and Latin America. He most recently served as Senior Vice President and Head of the Rare Diseases Business Unit at Genzyme Corporation and was also previously head of Genzyme's Renal and Endocrinology Unit. We believe Dr. Vivaldi's experience in developing and commercializing drugs that address severe and unmet medical needs will prove valuable to Minerva. Remy Luthringer, Head of R&D, has extensive experience in clinical psychiatric practice and drug development. Dr. Luthringer has conducted hundreds of clinical trials in the neuropsychiatry space, which, in our view, is important expertise due to the complex nature of trial design and execution for novel CNS drug candidates.

VALUATION

We value Minerva based on our projections for MIN-101 sales in schizophrenia and MIN-202 royalties in insomnia. As summarized in Figure 2, our price target is derived through a sum-of-the-parts NPV valuation. Our revenue projections are described in detail in the relevant product sections of this report. Our NPV analyses assume market exclusivity through 2030, when we expect patent expirations for both product candidates. We assume a 45% probability of success for MIN-101 and a 35% probability of success for MIN-202, based on the available clinical data, risk profiles of the lead indications, and competitive landscape. We also ascribe a 12.5% discount rate to reflect cost of capital. Our $16 price target does not include current cash of ~$28MM, or ~$1.60 per share.

FIGURE 2. Minerva Sum-of-the-Parts NPV Valuation

	Peak sales (MM)	Peak revenue year	Probability of success	Discount rate	NPV	NPV per share	Contribution
MIN-101 sales	626.6	2030	45%	12.5%	246.0	**$13.46**	**83%**
MIN-202 royalties	84.1	2030	35%	12.5%	49.3	**$2.70**	**17%**
Price target						**$16.16**	**100%**

Source: JMP Securities LLC

Capital Structure

Following the completion of its IPO, Minerva has approximately 18.3 million shares outstanding and an additional ~3.5 shares issuable upon exercise of outstanding and reserved stock options.

Balance Sheet

Minerva received net proceeds from the IPO of ~$26.5MM, after expenses. We believe this provides sufficient funding through 1Q16, through multiple data read-outs for MIN-202 and potentially also through Phase 2b results for MIN-101. Conservatively, we assume the company will raise additional funds through an equity financing in 2015.

INVESTMENT RISKS

Clinical risk. Minerva may not be successful in the full development and launch of its product candidates. There may be enrollment, dosing, efficacy, or safety issues that would preclude development. It is possible that drug candidates may fail to reach endpoints or statistical significance in respective clinical trials. Any of the aforementioned issues would cause a delay, or potential discontinuation of development. If product candidates make it through clinical trials, the company may encounter manufacturing issues including challenges with the scale-up to commercial quantities. All of the above circumstances should be taken into consideration when assessing clinical risk.

Regulatory risk. The company's drug candidates may not receive approval from the FDA or from ex-U.S. agencies. The FDA may request additional pre-clinical or clinical trials to provide validation for approval that would likely delay approval timelines and increase expenses. If approval is granted, the regulatory agency may impose restrictions on the label, or may require a REMS program for a drug candidate. This could limit commercial uptake and delay commercial progress.

Market risk. The market opportunity for products may not accurately reflect current estimates and there may be challenges with market adoption. This would impact the ability to reach revenue and profitability projections. The company must obtain and protect its intellectual property rights in order to effectively compete in the marketplace. Minerva could get involved in patent lawsuits that would likely be time-consuming and expensive.

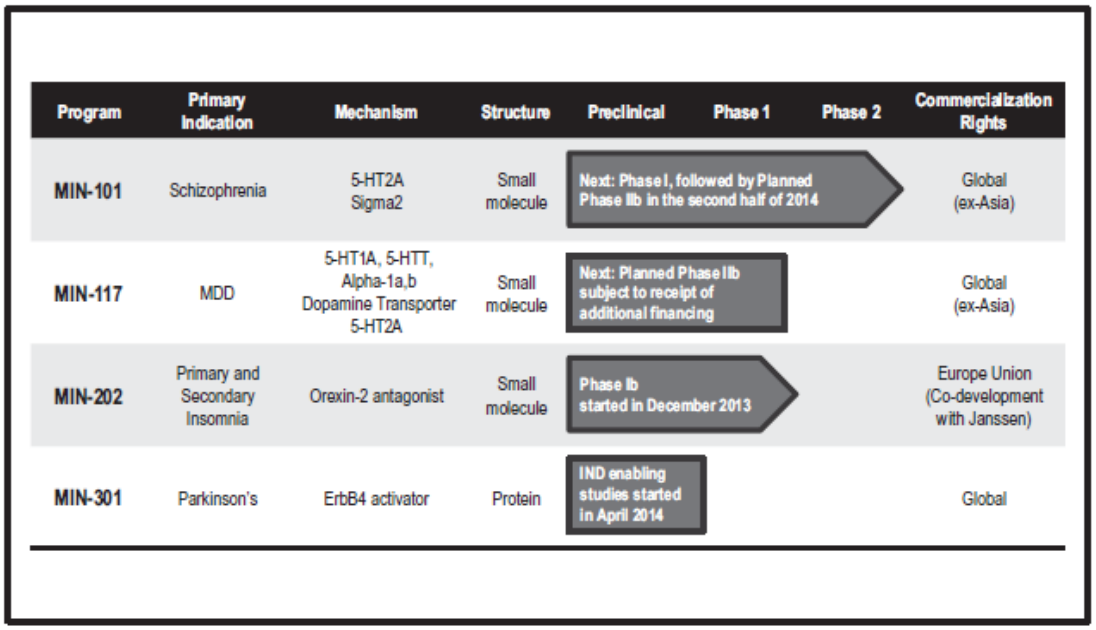
Financial risk. Minerva has no commercial products generating revenue, thus, it has not been, and is not yet, profitable. It has incurred losses each year since inception due to research and development expenses. These expenses are expected to increase in the near future as product candidates advance through the pipeline. The company will likely need to raise additional capital to fund these trials and continue operations. If there are any issues with acquiring needed financing, commercializing its product candidates, or achieving sales revenue, the company may not reach profitability.

NOVEL TREATMENTS FOR NEUROPSYCHIATRIC DISEASES

Minerva is developing a portfolio of small molecule product candidates, with novel mechanisms of action, to treat neuropsychiatric diseases. While there are currently multiple drug classes, reflecting substantial (blockbuster) commercial markets, many patients remain inadequately controlled with current therapies and safety and tolerability profiles commonly limit compliance and persistence of therapy. We believe Minerva's focus on novel and differentiated product candidates, and the experience and expertise of its management in neuropsychiatric indications, provides the potential to deliver therapies that meaningfully advance treatment paradigms.

The company has two lead candidates: MIN-101 for schizophrenia and MIN-117 for major depressive disorder (MDD). Positive proof-of concept data has been shown for MIN-101 and MIN-117, and they are both Phase 2b ready. The company also has MIN-202 in Phase 1b development for insomnia and MIN-301 for Parkinson's. We view the data read-outs from these candidates as important value drivers for the stock.

FIGURE 3. Minerva Pipeline



Source: Company reports

MIN-101 FOR SCHIZOPHRENIA

Minerva's most advanced product candidate is MIN-101, a novel small molecule antagonist of the serotonin (5HT2A) and sigma2 receptors, being developed for the treatment of schizophrenia. A Phase 2a trial has been completed for MIN-101 in schizophrenia patients, demonstrating encouraging signals of efficacy, including a statistically significant improvement of negative symptoms. The company intends to initiate a Phase 2b trial in 4Q14, with results expected in 1H16. We believe this product has the potential to differentiate from current standard-of-care antipsychotics based on its novel mechanism of action, specific focus on treating negative symptoms and improving cognition, and favorable safety profile.

Mechanistic rationale in schizophrenia

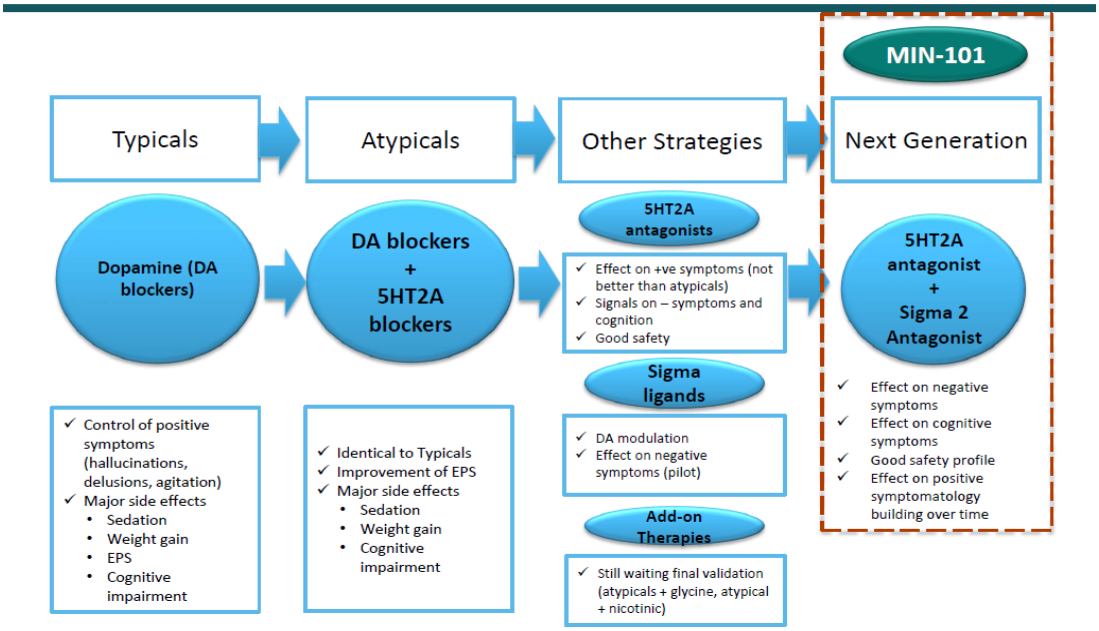
Schizophrenia is a chronic, severe, and disabling neuropsychiatric condition estimated to affect over 50 million worldwide, with approximately 2.2 million in the U.S. and 2 million in Europe (EU5). The disease is characterized by abnormal social behavior, and an inability to interpret reality normally.

Symptoms of schizophrenia can be broadly grouped into three categories: positive symptoms, negative symptoms, and cognitive symptoms. The positive symptoms include psychotic behaviors such as hallucinations (e.g., audible, visual), delusions/false beliefs, and movement disorders. Negative symptoms are associated with disruptions to normal emotions and behaviors. These symptoms significantly impact a patient's ability to maintain social interactions and complete everyday tasks. While they can be mistaken for symptoms of depression, they represent an important component of the schizophrenia symptomatology. Lastly, cognitive symptoms impact executive functioning (the ability to understand information and use it to make decisions), attention, and memory.

Current standard-of-care antipsychotics are modestly effective at treating positive symptoms; however, do not adequately address negative or cognitive symptoms and are limited by adverse safety profiles. These drugs act primarily to block dopamine and serotonin (5HT2A). In our view, there is significant mechanistic rationale that supports the potential for MIN-101 to benefit schizophrenia patients and differentiate from current therapies.

The 5HT2A and sigma 2 receptors are known to regulate mood and anxiety. When the 5HT2A receptor is blocked, positive symptoms of schizophrenia such as delusions, hallucinations, thought disorders, and agitation can be reduced. Other effects of blocking the 5HT2A receptor include promoting slow wave sleep, which is often disturbed in schizophrenic patients, and reducing side effects from anti-psychotics. The sigma 2 receptor plays a role in movement, psychotic symptom control, learning, and memory. Blocking this receptor can lower the heightened levels of dopamine in the schizophrenic brain and increase calcium levels, which can improve memory. A key differentiating factor of MIN-101 is that it only modulates dopamine and does not block it. This means the patient would still have available dopamine in the brain, thus avoiding common side effects seen in typical and atypical antipsychotics such as weight gain and cognitive impairment.

FIGURE 4. MIN-101 Mechanism of Action



Source: Company reports

MIN-101 clinical development program

The company has conducted a Phase 2a trial in schizophrenia, which showed that MIN-101 is well-tolerated and has a favorable safety profile. It also showed a statistically significant improvement of negative symptoms over placebo, and encouraging trends supporting improvements in positive and cognitive symptoms. We believe these results suggest that MIN-101 may show safety and effectiveness in a Phase 2b trial, which will focus on a subset of schizophrenic patients with predominately negative symptoms. In 4Q14, Minerva plans to initiate a Phase 2b trial in the U.S., of MIN-101, with results expected to read-out in 1H16.

Phase 2b trial to begin in 1Q15

Minerva intends to initiate a Phase 2b trial in 1Q15 to evaluate the safety and efficacy of MIN-101 in patients with predominantly negative symptoms of schizophrenia. The trial will be conducted in Europe and results are anticipated in 1H16.

The details of the trial design are being finalized; however, we expect it to be a randomized, double-blind, parallel group, placebo-controlled study in 255 patients with predominantly negative symptoms of schizophrenia. The primary endpoint will be the PANSS (Positive and Negative Syndrome Scale) negative score after three months and after six months of treatment for MIN-101 versus placebo. Secondary endpoints should include the PANSS total and subscores after one month and after three months of treatment, effects on sleep cognition, anxiety, and mood, and clinical and biological safety and drug plasma levels.

We believe this Phase 2b monotherapy trial could serve as one of two pivotal trials to support regulatory approval. Minerva plans to subsequently conduct a Phase 3 trial of MIN-101 as adjunct therapy to atypical anti-psychotics. In our view, the Phase 2b trial has the potential to show that MIN-101 has a better safety, efficacy, and side effect profile than what is currently available in the anti-psychotics market. In particular, its unique mechanism of action and potential efficacy in the negative symptoms of schizophrenia and cognition, differentiate MIN-101, making it an attractive investment opportunity. We view this program as the key value driver for Minerva shares.

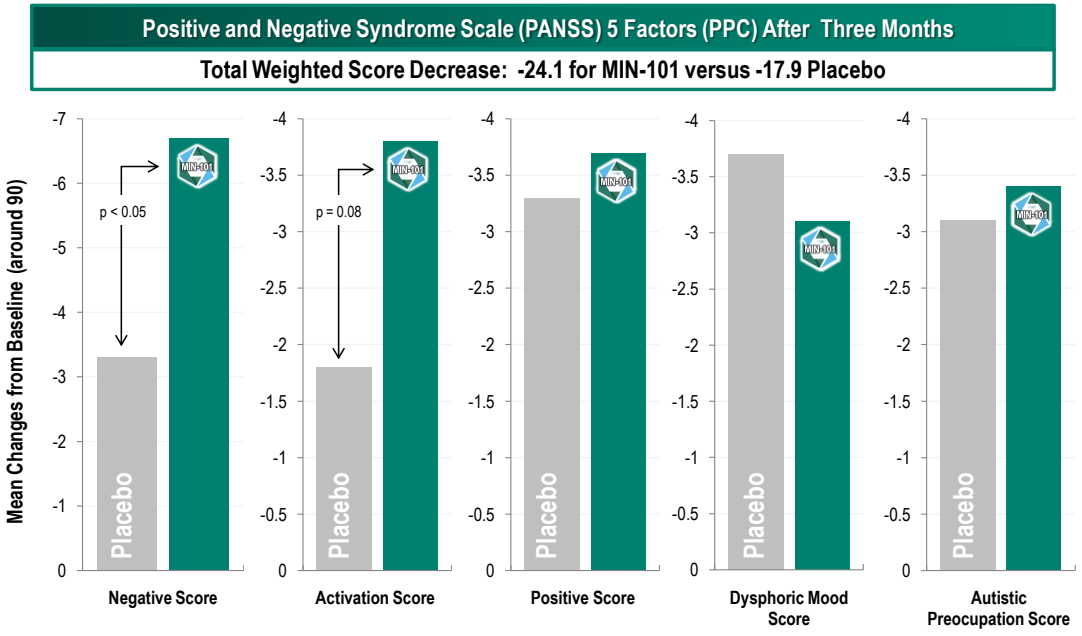
Prior to initiation of the Phase 2b trial, Minerva is completing a Phase 1 trial evaluating a once-daily formulation of MIN-101 (vs. the previous twice-daily formulation). The outcome of this trial is anticipated in 2H14; however, we do not view it as gating advancement of the program into Phase 2b development.

Phase 2a results support differentiated benefits in schizophrenia patients

The trial was a double-blind, placebo-controlled study with a treatment duration of three months. The trial enrolled 96 patients (30 of which completed the study per protocol) with schizophrenia who had stopped responding well to previously prescribed medication. The primary endpoint of the study was to evaluate the efficacy of MIN-101 versus placebo, as measured by PANSS (Positive and Negative Symptom Scale) total and subscores after one month of treatment. Secondary endpoints included the measurement of MIN-101 efficacy versus placebo on the PANSS total and subscores after three months of treatment. Cognition, mood, anxiety, and sleep using various psychological scales at various treatment timepoints were also measured as exploratory endpoints. We note that this Phase IIa trial was not powered to demonstrate statistically significant results.

Prior to administration of MIN-101 or placebo, all subjects discontinued their previous medication for an average of eight days in order to establish a baseline of symptoms. Following randomization, patients were hospitalized for the first 28 days and allowed to return home for the other 56 days.

FIGURE 5. MIN-101 Phase 2a: PANSS 5 Factors Scores After Three Months

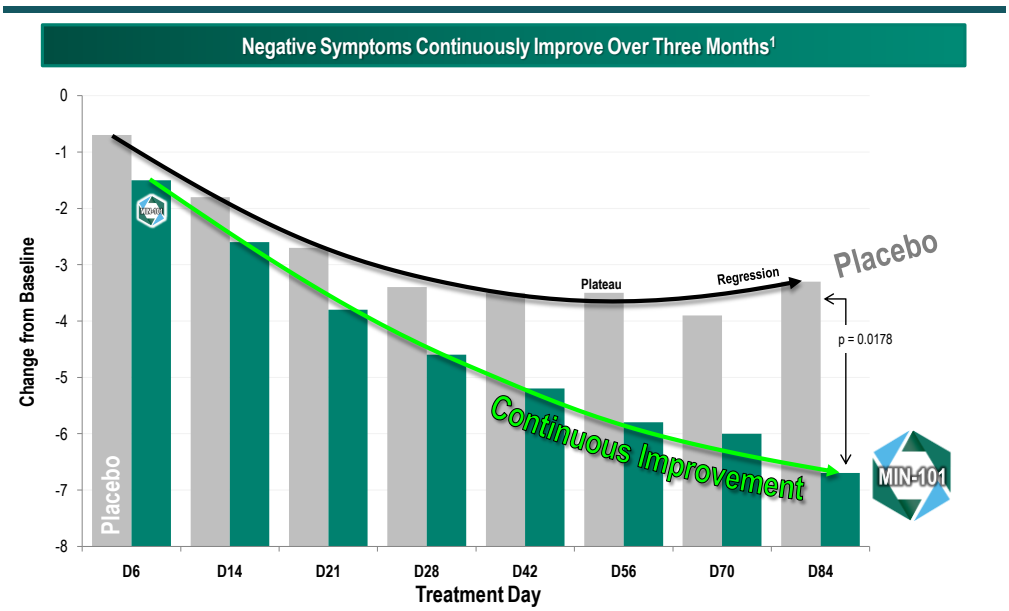


Source: Company reports

Results from the trial demonstrated a statistically significant improvement of negative symptoms and a non-statistically significant trend toward the improvement of positive and cognitive symptoms of the PANSS scale. The results of the trial suggest that MIN-101 shows potential for the treatment of the positive, negative, and cognitive symptoms of schizophrenia, and sleep and overall psychopathology.

The PANSS scale assesses the severity of the symptoms of schizophrenia, on a scale of 0 (absence of symptoms) to 7 (symptoms highly present). A decrease in the PANSS score from baseline, as measured on the vertical axis of the figures below, corresponds to a decrease of symptoms. Importantly, MIN-101 demonstrated efficacy versus placebo on negative symptoms. The decrease in the PANSS negative symptoms score became statistically significant after three months of treatment and continuously improved over time (Figure 6).

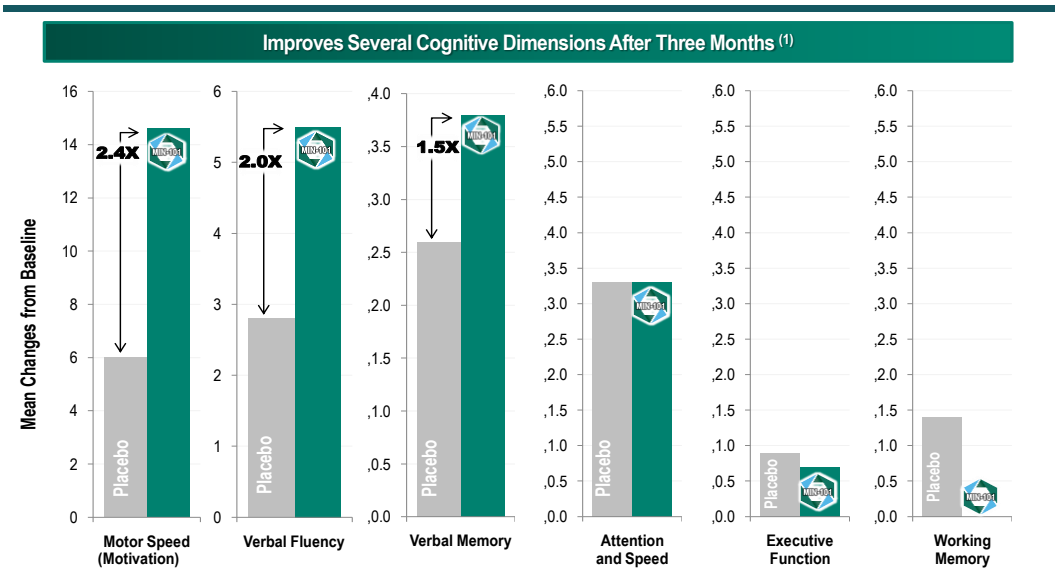
FIGURE 6. MIN-101 Phase 2a: Improvement of Negative Symptoms at Three Months



Source: Company reports

Cognition was measured as a secondary endpoint. Patients who received MIN-101 for three months showed greater improvements in verbal fluency, verbal memory, and motor speed compared to subjects receiving placebo in the PPC group (Figure 7). The horizontal axis shows the BACS subscales and the vertical axis shows the change in the score from the baseline measure to the end of the study. An increase in the score indicates improvement in cognition activities as assessed within the specific subset.

FIGURE 7. MIN-101 Phase 2a: Efficacy Trend In Cognition



Source: Company reports

Commercial opportunity for MIN-101

Current standard-of-care treatments for schizophrenia represent a market opportunity of ~$4 billion, including Clozaril (clozapine), Risperdal (risperidone), Seroquel (quetiapine), Zyprexa (olanzapine), and Abilify (aripiprazole). These drugs are primarily atypical antipsychotics that act as dopamine and serotonin receptor antagonists. As discussed above, these drugs only treat the positive symptoms of schizophrenia but have no impact on negative symptoms or cognition, which are equally, and possibly more, debilitating. Furthermore, the safety and tolerability profiles of atypical antipsychotics are limiting, including cognitive impairment, restlessness, sedation, insomnia, exacerbation of metabolic disorders, weight gain, and prolactin increase. Due to the lack of efficacy across the disease symptom spectrum and side effect limitations, the rate of treatment discontinuation for current schizophrenia therapies is 60% to 80% over the course of 18 months. Therefore, in our view, there could be substantial opportunity for a schizophrenia drug that addresses the full spectrum of symptoms in schizophrenia, specifically including the unmet need of negative symptoms.

MIN-101 revenue model

There are an estimated 2.2 million patients with schizophrenia in the U.S. with a further ~2 million in key European markets (EU5). We project MIN-101 will be launched in the U.S. in 2019. For the purpose of our model, we currently assume that Minerva commercializes MIN-101 though its own specialty sales force; however, we view it as likely that the company will seek a commercial partner, assuming a successful development program. We assume the product is launched at a price per day of $20, at the lower end of the range of current atypical antipsychotics, and include 3% annual price increases. Our peak sales projection of ~$710MM assumes only a mid-single digit penetration rate, which we believe could prove conservative should the product demonstrate a differentiated clinical benefit, specifically relating to its impact on negative symptoms of schizophrenia.

Our NPV analysis assumes the product retains market exclusivity though to 2031, when the pending method of use patent expires (the issued U.S. patent for composition of matter expires in 2021). We take into consideration the royalty owed on the product to Mitsubishi Tanabe Pharma Corporation (MTPC), which ranges from the high-single digits to the low teens depending upon net sales. We assume a 45% probability of success and a 40% operating margin. Our discount rate is 12.5%. We derive an NPV for the asset of ~$246MM, or $13.46 per share.

FIGURE 8. MIN-101 Revenue Model

U.S. Schizophrenia Opportunity	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Schizophrenia Prevalence	2,200,000	2,211,000	2,222,055	2,233,165	2,244,331	2,255,553	2,266,831	2,278,165	2,289,555	2,301,003	2,312,508	2,324,071	2,335,691	2,347,370	2,359,106	2,370,902
Number of patients on MIN-101	0	0	0	0	11,222	22,556	45,337	91,127	103,030	103,545	104,063	104,583	105,106	105,632	106,160	106,691
% penetration	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.5%*	*1.0%*	*2.0%*	*4.0%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*	*4.5%*
Annual treatment cost	$5,040	$5,191	$5,347	$5,507	$5,673	$5,843	$6,018	$6,199	$6,385	$6,576	$6,773	$6,977	$7,186	$7,401	$7,623	$7,852
Cost per day	$20.00	$20.60	$21.22	$21.85	$22.51	$23.19	$23.88	$24.60	$25.34	$26.10	$26.88	$27.68	$28.52	$29.37	$30.25	$31.16
Number of days of dosing	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
Compliance rate	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Gross MIN-101 sales ($MM)	**0.0**	**0.0**	**0.0**	**0.0**	**63.7**	**131.8**	**272.8**	**564.9**	**657.8**	**680.9**	**704.9**	**729.6**	**755.3**	**781.8**	**809.3**	**837.8**
Gross to net adjustment	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*	*15%*
Net MIN-101 sales ($MM)	**0.0**	**0.0**	**0.0**	**0.0**	**54.1**	**112.0**	**231.9**	**480.1**	**559.1**	**578.8**	**599.1**	**620.2**	**642.0**	**664.5**	**687.9**	**712.1**
Royalty to MTPC	0.0	0.0	0.0	0.0	6.5	13.4	27.8	57.6	67.1	69.5	71.9	74.4	77.0	79.7	82.5	85.5
MIN-101 sales to NERV ($MM)	**0.0**	**0.0**	**0.0**	**0.0**	**47.6**	**98.6**	**204.1**	**422.5**	**492.0**	**509.3**	**527.2**	**545.8**	**564.9**	**584.8**	**605.4**	**626.6**
Probability of success	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%
Risk-adjusted net sales ($MM)	0.0	0.0	0.0	0.0	21.4	44.4	91.8	190.1	221.4	229.2	237.3	245.6	254.2	263.2	272.4	282.0
Contribution margin	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Operating income	0.0	0.0	0.0	0.0	8.6	17.7	36.7	76.1	88.6	91.7	94.9	98.2	101.7	105.3	109.0	112.8
Discount rate	12.5%															
NPV	**246.0**															
Shares outstanding	18.3															
NPV per share	**$13.46**															

Source: JMP Securities LLC

MIN-202 FOR INSOMNIA

MIN-202 is an orexin 2 antagonist being developed in partnership with Janssen Pharma for the treatment of insomnia. Approximately 53 million people suffer from insomnia, or the inability to sleep or to stay asleep. Many insomnia patients are elderly. Consequences of insomnia include impaired occupational and social performance. These patients are also at increased risk of depression, anxiety, suicide, and substance abuse. Insomnia is also seen as a secondary symptom to neuropsychiatric disorders, such as MDD and schizophrenia. MIN-202's novel mechanism is differentiated to current insomnia drugs as it allows the patient to experience normal levels of REM sleep. Importantly, we believe there is potential for clinical trials to demonstrate a more favorable side effect profile (less residual daytime sedation) and less abuse potential. A Phase 1b trial is ongoing for MIN-202 and results are expected in 2H14. We view this asset as a fit with Minerva's CNS pipeline and as adding potential upside to our model.

Mechanism of action

We believe there is mechanistic rationale for Minerva to evaluate MIN-202 as a treatment in primary insomnia and secondary insomnia and as an adjunctive therapy with an antidepressant for the treatment of mood disorders. MIN-202's mechanism, as an orexin 2 antagonist, inhibits the activity of neurons that promote wakefulness. The orexin (wakefulness) system affects the secretion and control of stress hormones that directly impacts circadian rhythm function. The sleep/wake cycle influences the release of hormones from the HPA (adrenocorticotropic hormone and cortisol) axis. The HPA plays a role in the neurobiology of the circadian cortisol cycle, which is dysregulated in insomnia, and other CNS disorders, such as depression. An advantage of MIN-202's mechanism is that is has a short half-life of 2-3 hours, with Tmax at 30 minutes. This allows for fast sleep induction and less residual daytime sedation.

MIN-202, which blocks the wake drive through only the orexin 2 receptor, is differentiated from current insomnia drugs, such as Suvorexant, which inhibits the wake drive through orexin 1 and 2, or Ambien, which increases the sleep drive through the GABA receptor. These drugs are known to have unpleasant side effects such as nightmares, decreased deep sleep, and impaired daytime functioning due to residual sedation. MIN-202 does not suppress REM sleep, which plays a role in dreaming and retention of memory and is important in maintaining a physiological sleep state. Thus, inhibiting only the orexin 2 receptor may result in better preservation of physiological and restorative sleep. In our view, this bodes well for an insomnia drug with a better side effect profile than what is currently available in the marketplace.

Clinical development program

Results of a Phase I trial for MIN-202 suggested a relationship between single ascending dose and rapid induction of sleep. A Phase 1b trial is ongoing for MIN-202 and results are expected in 2H14.

In conjunction with Janssen, Minerva plans to conduct two Phase Ib clinical trials of MIN-202 in Europe. The first of these has already been submitted to the EU regulatory agencies to allow for subject enrollment to begin in late 2014. We anticipate results from these trials in 2015.

Co-Development and License Agreement with Janssen

Minerva is developing MIN-202 in collaboration with Janssen Pharma, based on an agreement finalized following the completion of the company's IPO. The agreement provides Minerva an exclusive license to the product candidate and any additional orexin 2 compounds, in the European Union, Switzerland, Liechtenstein, Iceland, and Norway. Janssen received an exclusive license to sell MIN-202 in other global geographies. Under the terms of the collaboration, Minerva will pay Janssen high-single digit royalties on net sales in the European Union and Janssen will pay high-single digit royalties to Minerva on net sales outside the European Union. Minerva has rights to sublicense commercial rights in Europe.

Minerva is responsible for $5MM in development costs between now and the end of 2015, when certain Phase Ib clinical trials and animal toxicology studies are completed, and then 40% of future development costs.

Commercial opportunity

Insomnia treatments represent a $2.7 billion market worldwide. We project that the insomnia market grows at a constant rate of 3% annually. We estimate that MIN-202 will be launched in 2020 and assume that the company will seek a commercial partnership for the asset in Europe, possibly, but not necessarily, Janssen. For the purpose of our model, we assume Minerva will receive 20% of net sales globally. We project that the product will achieve a peak share of the global insomnia market of 10%, representing sales of ~$420MM in 2030, when we expect the composition of matter patents to expire.

We assume Minerva will sublicense its rights to commercialize MIN-202 in Europe and we model a 20% royalty on global net sales. We assume a 35% probability of success and a 90% operating margin. Our discount rate is 12.5%. We derive an NPV for the asset of ~$49MM, or $2.70 per share.

FIGURE 9. MIN-202 Revenue Model

WW Insomnia Opportunity	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Current sales ($MM)	3,130	3,224	3,321	3,420	3,523	3,629	3,737	3,850	3,965	4,084	4,207
% growth	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*
% MIN-202 penetration	*1.0%*	*2.0%*	*4.0%*	*8.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
Net MIN-202 sales ($MM)	**31.3**	**64.5**	**132.8**	**273.6**	**352.3**	**362.9**	**373.7**	**385.0**	**396.5**	**408.4**	**420.7**
Royalty rate	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*	*20%*
MIN-202 royalties ($MM)	**6.3**	**12.9**	**26.6**	**54.7**	**70.5**	**72.6**	**74.7**	**77.0**	**79.3**	**81.7**	**84.1**
Probability of success	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
Risk-adjusted net sales ($MM)	2.2	4.5	9.3	19.2	24.7	25.4	26.2	26.9	27.8	28.6	29.4
Contribution margin	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Operating income	2.0	4.1	8.4	17.2	22.2	22.9	23.5	24.3	25.0	25.7	26.5
Discount rate	12.5%										
NPV	**49.3**										
Shares outstanding	18.3										
NPV per share	**$2.70**										

Source: JMP Securities LLC

ADDITIONAL PIPELINE ASSETS

Minerva's pipeline includes two additional clinical stage candidates that may both address blockbuster market opportunities.

MIN-117 for Major Depressive Disorder

Minerva's second product candidate is MIN-117, a novel small molecule serotonin (5-HT1A) receptor antagonist and a serotonin and dopamine reuptake inhibitor being developed to treat major depressive disorder (MDD). MDD is a mental disorder characterized by depressed mood, known as dysphoria, reduced concentration, overall tiredness, and sleep disturbances. Additionally, lower self-esteem and lower self-confidence adversely affect a person's work, school, and family life. Given MIN-117's proposed action through multiple mechanisms on several receptors associated with mood and the control of mood, including SSRI, 5-HT1A auto-receptor and dopamine transporter, or DAT, and alpha-1A and B modulation, we believe MIN-117 has the potential to differentiate from current standard-of-care anti-depressant drugs.

Results from a proof-of-concept Phase 1b trial for MIN-117 demonstrated activity in both partial and non-responders to current standard-of-care therapies (SSRIs and SNRIs), and a faster onset of action (within 2 weeks vs. SSRI typical onset within 4 weeks). Minerva plans to initiate a Phase 2b trial in 2H14, evaluating MIN-117 in ~450 MDD patients, with results expected in 2H15.

FIGURE 10. MIN-117 Mechanism of Action

- Mood is affected by several biological mechanisms in the brain
- MIN117 acts on several receptors associated with the control and status of the patient's mood

Rapid Onset Potential

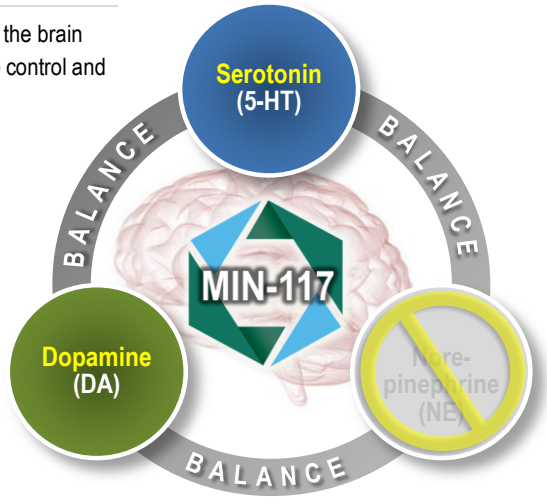
- Antagonist on 5-HT1A receptor
- Dopamine reuptake inhibitor

Potential to Manage Partial and Non-Responders

- Serotonin reuptake inhibitor
- Dopamine reuptake inhibitor
- Alpha 1A & B adrenergic receptors

Good Safety Profile

- Potential for less side effects compared with existing MDD drugs
- Faster onset of action



Three neurotransmitters are involved in regulating mood, emotions and behaviors

Source: Company reports

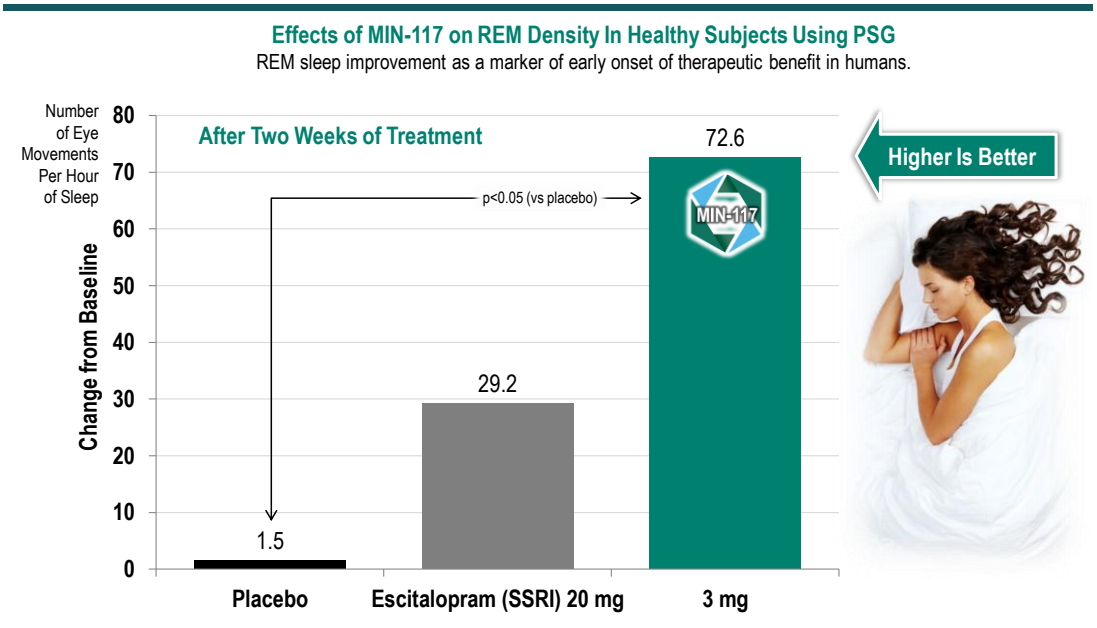
Phase 2b trial

Minerva plans to initiate a Phase 2b trial of MIN-117 in MDD when additional funding becomes available. The trial is planned as a randomized, double-blind, parallel-group, placebo-controlled study to evaluate the efficacy and safety of two fixed doses of MIN-117 in 450 adults with MDD. The primary endpoint is to evaluate depressive symptoms as measured by the change from Baseline in the Montgomery-Asberg Depression Rating Scale (MADRS) total score over six weeks of treatment. Secondary endpoints include the onset of antidepressant response over two weeks, as measured by MADRS and reduction of depressive symptoms over six weeks of treatment, as measured by a change from baseline in the Clinical Global Impression severity and improvement scale (CGI-S and CGI-I). The study will also measure effects on cognition, sleep, anxiety, and sexual function.

Phase 1b results provide proof-of-concept and support advancement to Phase 2 trials

Two Phase 1 studies were conducted in healthy subjects to evaluate the safety PK and pharmacodynamic (PD) of MIN-117. Based upon a PSG analysis, statistically significant improvements compared to placebo, were found in the density of ocular movements during REM sleep (at the 3 and 7.5mg dose) and the number of ocular movements during rapid eye movement, or REM, sleep (at the 7.5 mg dose). This ocular activity in REM sleep may be a potential biomarker for MDD drug efficacy. REM density, which is the number of eye movements per hour of sleep was evaluated after two weeks of administration of placebo, a therapeutic dose of a reference antidepressant (20 mg/day of escitalopram) and 3 mg/day of MIN-117 in the Phase I study of healthy volunteers. MIN-117 increased REM density compared to placebo at a statistically significant level (Figure 11). It is thought that sleep may be a predictive parameter of drugs in MDD patients. An increase in REM density may indicate MIN-117 possibly has a faster effect on MDD compared to escitalopram.

FIGURE 11. MIN-117 Phase 1b Demonstrates Early Onset of Action



Source: Company reports

Commercial opportunity in MDD

It is estimated that MDD affects 30 million people in the U.S. and Western Europe and represents a current market opportunity in excess of $5 billion. Patients are typically treated with antidepressants and/or cognitive behavioral therapy. The most prescribed antidepressants are selective serotonin reuptake inhibitors, or SSRIs, and serotonin-norepinephrine reuptake inhibitors, or SNRIs. Importantly, SSRIs and SNRIs are only efficacious in part of the MDD patient population. As many as two-thirds of MDD patients do not respond or respond inadequately to current therapies. Other limitations of current therapy include slow onset of action and adverse tolerability profiles. MDD is a leading cause of disability and approximately 6% of MDD patients commit suicide. We believe there is significant unmet medical need for these patients that Minerva has an opportunity to potentially address with MIN-117.

MIN-301 for Parkinson's disease

MIN-301 is a novel soluble recombinant form of NRG-1b1, an activator of ErbB4, being developed for the treatment of Parkinson's Disease (PD). It is the second most common neurological disease, with over 2.4 million patients worldwide and ~800,000 in the U.S., with a drug market of over $2 billion in the U.S., EU, and Japan. Parkinson's disease is a progressive and incurable neurodegenerative disorder of the central nervous system in which dopamine-generating cells die. This results in movement-related symptoms such as shaking, rigidity, and impaired balance. Progressive symptoms include loss of speech and cognitive abilities. All of these issues impair a patient's quality of life and shorten life expectancy. MIN-301 may have disease-modifying potential in PD as it has shown preclinical neuroprotective and neurorestorative effects in animal models. IND-enabling studies are ongoing for MIN-301 and Phase 1 healthy volunteer trials are expected to be conducted in 2015. At this time, we do not model this asset; however, we believe it may offer future upside to our estimates.

MANAGEMENT TEAM

Rogerio Vivaldi, MD, MBA- President and Chief Executive Officer
Over the past 20 years, Dr. Vivaldi has been involved in commercializing more than 20 pharmaceutical products addressing a wide range of unmet medical needs. He most recently served as Senior Vice President and Head of the Rare Diseases Business Unit at Genzyme Corporation and was previously head of Genzyme's Renal and Endocrinology Unit. Prior to that, he led the establishment of Genzyme's business operations in Brazil and served as President of Genzyme Latin America. He received his medical degree from Medical School - Rio de Janeiro University (UNIRIO), and completed his residency in endocrinology at State University of Rio de Janeiro (UERJ). He completed his MBA at Coppead, Federal University of Rio de Janeiro (UFRJ).

Remy Luthringer, Ph.D.- Executive Vice President and Head of R&D
Dr. Remy Luthringer has been involved in the development of more than 150 active molecules for clinical trials in the central nervous system. Dr. Luthringer served as Chief Medical Officer for Index Ventures, with a focus on investments in healthcare infrastructure. He was also the head of the FORENAP Institute for Research in Neurosciences and Neuropsychiatry in France. Dr. Luthringer has extensive experience in clinical psychiatric practice and holds a PhD in neurosciences and clinical pharmacology.

Geoff Race, FCMA, MBA - Executive Vice President and Chief Financial Officer
Prior to being named as Minerva Neurosciences' CFO, Mr. Race served as a consultant for the development of MIN-101 and MIN-117. He has previously served as Chief Executive Officer of Funxional Therapeutics Ltd., the lead program of which (FX125L) was acquired by Boehringer Ingelheim in 2012. He also served as Chief Financial Officer at PanGenetics B.V. He is a Fellow of the Chartered Institute of Management Accountants and earned his MBA from Durham University Business School.

Joseph Reilly -Chief Business Officer
Mr. Reilly was most recently Vice President, Head of Commercial Strategy and Operations at Genzyme Corporation. In more than a decade at Genzyme, he also served as Vice President of Global Business Operations, Vice President of Commercial Operations and Vice President of Finance in the Rare Diseases Division. Mr. Reilly holds a BS and MS in Finance from Boston College.

Source: Excerpted from company reports

FIGURE 12. Minerva Neurosciences Earnings Statement

($ in thousands 000's)	2012	2013	1Q:14	2Q:14E	3Q:14E	4Q:14E	2014E	2015E	2016E	2017E
Revenue										
Product sales/royalties	0	0	0	0	0	0	0	0	0	0
Other revenue	0	0	0	0	0	0	0	0	0	0
Total Revenue	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Cost of goods sold	0	0	0	0	0	0	0	0	0	0
Gross Profit	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Operating expenses										
R&D	550	708	586	1,465	5,128	7,179	14,357	15,793	17,372	19,109
SG&A	1,031	2,466	2,037	509	519	530	3,596	2,157	3,236	11,326
Total Operating Expenses	**1,581**	**3,175**	**2,623**	**1,974**	**5,647**	**7,708**	**17,953**	**17,950**	**20,608**	**30,435**
Operating income (loss)	**(1,581)**	**(3,175)**	**(2,623)**	**(1,974)**	**(5,647)**	**(7,708)**	**(17,953)**	**(17,950)**	**(20,608)**	**(30,435)**
Interest income	0	0	0	0	0	0				
Interest expense	0	(58)	309	0	0	0	309	(40)	(40)	(40)
Foreign currency gains (losses)	(1)	(29)	(6)	0	0	0	(6)	0	0	0
Net Income Before Taxes	**(1,582)**	**(3,262)**	**(2,320)**	**(1,974)**	**(5,647)**	**(7,708)**	**(17,650)**	**(17,990)**	**(20,648)**	**(30,475)**
Income tax provision	0	0	0	0	0	0	0	0	0	0
Net income (loss)	**(1,582)**	**(3,262)**	**(2,320)**	**(1,974)**	**(5,647)**	**(7,708)**	**(17,650)**	**(17,990)**	**(20,648)**	**(30,475)**
EPS										
Basic	**($0.47)**	**($0.78)**	**($0.34)**	**($0.28)**	**($0.31)**	**($0.42)**	**($1.35)**	**($0.75)**	**($0.85)**	**($1.23)**
Diluted	**($0.47)**	**($0.78)**	**($0.34)**	**($0.28)**	**($0.31)**	**($0.42)**	**($1.35)**	**($0.95)**	**($1.07)**	**($1.55)**
Weighted shares outstanding										
Basic	3,387	4,187	6,903	6,937	18,384	18,476	12,675	23,846	24,323	24,809
Diluted	3,387	4,187	6,903	6,937	18,384	18,476	12,675	18,846	19,223	19,607
Cash Flow										
Net Income	(1,582)	(3,262)	(2,320)	(1,974)	(5,647)	(7,708)	(17,650)	(17,990)	(20,648)	(30,475)
Depreciation and amortization	0	36	50	50	50	50	200	200	200	200
Stock-based compensation	656	588	600	600	600	600	2,400	2,400	2,400	2,400
Other adjustments	18	478	0	0	0	0	0	0	0	0
Operating burn	**(909)**	**(2,160)**	**(1,670)**	**(1,324)**	**(4,997)**	**(7,058)**	**(15,050)**	**(15,390)**	**(18,048)**	**(27,875)**
Cash at start of period	209	200	1,818	2,191	28,867	23,870	1,818	16,811	49,421	31,374
Cash from operations	(909)	(2,160)	(1,670)	(1,324)	(4,997)	(7,058)	(15,050)	(15,390)	(18,048)	(27,875)
Cash from investing	0	(3)			0	0	0	0	0	0
Cash from financing	900	3,781	2,043	28,000	0	0	30,043	48,000	0	0
Shares issued								5,000		
Price per share							0	10		
Effect of FX	0	0	0	0	0	0	0	0	0	0
Cash at end of period	**200**	**1,818**	**2,191**	**28,867**	**23,870**	**16,811**	**16,811**	**49,421**	**31,374**	**3,499**
Investment securities	0	0	0	0	0	0	0	0	0	0
Cash and investment securities	**200**	**1,818**	**2,191**	**28,867**	**23,870**	**16,811**	**16,811**	**49,421**	**31,374**	**3,499**

Source: Company reports and JMP Securities LLC

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 Jason N. Butler

JMP Securities Disclosures:

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

JMP Securities Investment Opinion Definitions:

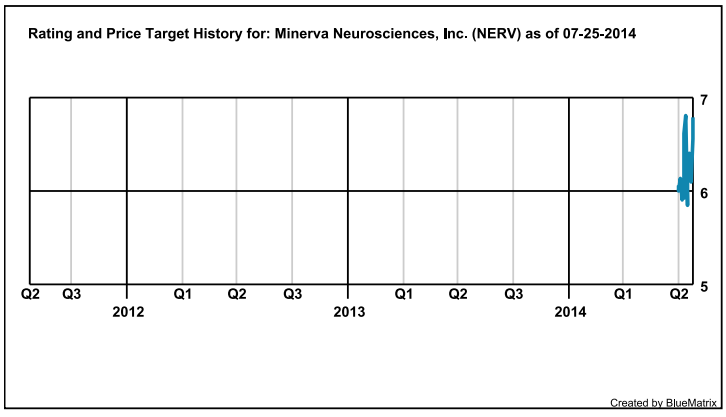
Market Outperform (MO): JMP Securities expects the stock price to outperform relevant market indices over the next 12 months.
Market Perform (MP): JMP Securities expects the stock price to perform in line with relevant market indices over the next 12 months.
Market Underperform (MU): JMP Securities expects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

JMP Securities Research Ratings and Investment Banking Services: (as of July 28, 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	265	*59.42%*	Buy	265	*59.42%*	97	*36.60%*
MARKET PERFORM	Hold	141	*31.61%*	Hold	141	*31.61%*	17	*12.06%*
MARKET UNDERPERFORM	Sell	4	*0.90%*	Sell	4	*0.90%*	0	*0%*
COVERAGE IN TRANSITION		36	*8.07%*		36	*8.07%*	0	*0%*
TOTAL:		446	*100%*		446	*100%*	114	*25.56%*

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
Jeremy Frazer (312) 768-1796

Financial Processing & Outsourcing
David M. Scharf (415) 835-8942
Jeremy Frazer (312) 768-1796

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
Andrew Prigodich (312) 768-1788
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
Eric Joseph, PhD (212) 906-3514

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 Equipment & 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
Michael Wu (415) 835-8996

Software
Patrick Walravens (415) 835-8943
Peter Lowry (415) 869-4418
Greg McDowell (415) 835-3934

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