

NRx Pharmaceuticals, Inc. (NRXP) – Buy
We Are Raising Our Price Target from \$3.0 to \$9.0

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NRX-101 Could Change the Treatment Paradigm

We have been impressed with not just the clinical data but with the clinical design around NRX-101 and see the potential for this to be a blockbuster (\$1B plus drug). Our confidence is driven by our understanding of the NMDA mechanism of action and its proven utility in the treatment of bipolar depression, PTSD and other related indications that too often involve suicidality, which we consider an unmet medical need. With that said, what's really driving our valuation is a change in the out-year shares outstanding based on the probability that we see a licensing deal that brings in non-dilutive cash or, with cash on the balance sheet (out-years), the company repurchases stock.

Investment Highlights

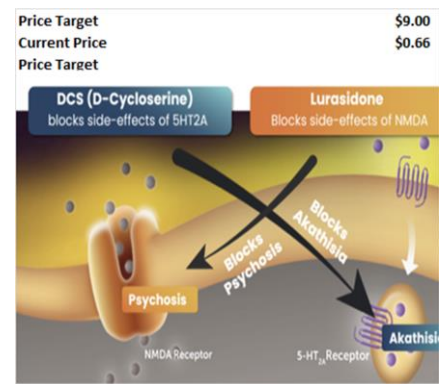
Clinical Update: The company initiated a Phase 3 registrational clinical trial for NRX-101 in patients suffering from severe bipolar depression with acute suicidality. At about the same time the company received an encouraging DSMB readout for a second trial in the broader indication of Suicidal Treatment-Resistant Bipolar Depression. Management, following guidance from the FDA, intends to broaden the indication to the large population of patients treated in the outpatient setting who do not require acute stabilization with ketamine. The design of this study has effectively converged with the ongoing Phase 2b/3 outpatient trial. Management stated: "This is the first time, to our knowledge, that patients with suicidal ideation have been welcomed in a clinical trial of an oral antidepressant". Currently, the only approved treatment for patients with suicidality in depression is electroshock therapy, with its known complications.

Recent Highlights from the Quarter:

- Over the past 12 months, the Company reinitiated its psychiatry development program post pandemic, transferred manufacturing of NRX-101 to the US, and initiated a clinical trial in suicidal treatment-resistant bipolar depression, which was recently reviewed by the independent Data Safety Monitoring Board (DSMB)
- The DSMB identified no safety or futility signals in the first 50 patients with Suicidal Treatment-Resistant Bipolar Depression enrolled in the trial; enrollment to continue as planned.
- The current trial has been upgraded to a Phase 2b/3 study that may be used for a registrational filing; on track to report topline clinical data in 4Q 2023.
- Initiated registrational Phase 3 clinical trial of NRX-101 in patients with bipolar depression with acute suicidal ideation and behavior (ASIB) and held Type B meeting with U.S. FDA in 1Q 2023, which provided important input to the NRX-101 program.
- Two international leaders in Psychiatry, Prof. Andrew Nierenberg of Harvard Medical School and Prof. Marion Leboyer, of INSERM, Paris have joined the NRx Advisory Board

Valuation: We project our model out to 2033. We apply a 30% risk cut to our projected revenues in our product model in addition to our 30% risk rate applied in our Free Cash Flow to the Firm (FCFF), discounted EPS (dEPS), and Sum-of-the-Parts (SOP) models. We do assume additional capital raises. We also assume the company repurchases stock in its outyears, or we may even see a license deal that brings in non-dilutive capital and reduces our assumed development expenses. The result is equal-weighted and averaged and rounded to the nearest whole number to derive our 12-month projected price target of \$9.0.

Risks to our thesis include: 1. Regulatory Approvals; 2. Clinical Science 3. Intellectual Capital 4. Dilution.



Price Target	\$9.00
Current Price	\$0.66
Price Target	
Source: NRx Pharmaceuticals	
Stock Data	
52-Week Range	\$0.49 - \$2.49
Shares Outstanding (mil.)	71.5
Market Capitalization (mil.)	\$47
Enterprise Value (mil.)	\$27
Debt to Capital	0%
Book Value/Share	\$7.69
Price/Book	10.0
Average Three Months Trading Volume (K)	248
Insider Ownership	41.3%
Institutional Ownership	4.7%
Short interest (mil.)	2.0%
Dividend / Yield	\$0.00/0.0%



Valuation: Our valuation for NRx Pharmaceuticals is based on revenue projections out to 2033. We know the markets are quite large for depression, PTSD, and related disorders. Success in one area leads to other indications. Our model assumes the company does raise additional capital, however we also assume with success the company can repurchase stock (in the outyears) and create an efficient capital structure. This change is what principally drives our valuation target from \$3.0 (which was based on a fully diluted share count in 2033) to \$9.0. In our model we assume a rising SG&A and R&D as the company commercializes its products and expands its pipeline, coupled with an improving cost of goods sold (COGS) initially at 20% and at scale falling to just 10%. Our valuation models: Free Cash Flow to the Firm (FCFF), discounted EPS (dEPS), and Sum-of-the-Parts (SOP), use a 30% discount rate. We select 30% for micro-capitalized growth companies, and this represents our highest risk rate. The result of these three models is then equal-weighted and averaged and rounded to the nearest whole number to provide a 12-month target price.

Exhibit 1. Free Cash Flow Model

Average	\$	9
Price Target	\$	7
Year		2023

DCF Valuation Using FCF (mn):

Units ('000)	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
EBIT	(39,816)	(48,076)	(27,920)	(28,199)	9,519	211,234	380,946	565,656	837,362	1,030,866	1,150,374	1,328,536
Tax Rate	0%	0%	0%	0%	5%	8%	10%	18%	24%	28%	30%	31%
EBIT(1-t)	(39,816)	(48,076)	(27,920)	(28,199)	9,043	194,335	342,852	463,838	636,395	742,223	805,262	916,690
CapEx												
Depreciation												
Change in NWC												
FCF	(39,816)	(48,076)	(27,920)	(28,199)	9,043	194,335	342,852	463,838	636,395	742,223	805,262	916,690
PV of FCF	(51,761)	(48,076)	(21,477)	(16,686)	4,116	68,042	92,340	96,096	101,420	90,989	75,936	66,495
Discount Rate									30%			
Long Term Growth Rate										1%		
Terminal Cash Flow												3,192,610
Terminal Value YE2033												231,586
NPV												740,781
NPV-Debt												-
Shares out (thousands)												100,150
NPV Per Share												\$ 7.40

Source: Dawson James estimates

Exhibit 2. Discounted EPS Model

Current Year	2023
Year of EPS	2033
Earnings Multiple	15
Discount Factor	30%
Selected Year EPS	\$ 9.15
NPV	\$ 9.96

Source: Dawson James estimates

		Discount Rate and Earnings Multiple Varies, Year is Constant					
		2033 EPS					
Earnings Multiple	10.0	5%	10%	15%	20%	25%	30%
	5		\$28.10	\$17.64	\$11.31	\$7.39	\$4.91
10		\$56.19	\$35.29	\$22.62	\$14.78	\$9.83	\$ 6.64
15		\$84.29	\$52.93	\$33.94	\$22.17	\$14.74	\$ 9.96
20		\$112.38	\$70.58	\$45.25	\$29.56	\$19.66	\$ 13.28
25		\$140.48	\$88.22	\$56.56	\$36.96	\$24.57	\$ 16.60
30		\$168.57	\$105.87	\$67.87	\$44.35	\$29.48	\$ 19.92
35		\$196.67	\$123.51	\$79.19	\$51.74	\$34.40	\$ 23.24
40		\$224.76	\$141.15	\$90.50	\$59.13	\$39.31	\$ 26.56

Exhibit 3. Sum-of-the-Parts Model

NRx Pharmaceuticals	LT Gr	Discount Rate	Yrs. to Mkt Peak	% Success	Peak Sales MMs	Term Val
NRX-101 for BPD	1%	30%	5	80%	\$800	\$2,759
NPV						\$4.75
NRX-101 for PTSD	1%	30%	5	80%	\$800	\$2,759
NPV						\$4.75
						80%
MM Shrs OS (2030E)						100
Total						\$9.50

Source: Dawson James estimates

Risks to our thesis include 1. Regulatory Approvals; 2. Clinical Science; 3. Intellectual Capital 4. Dilution

- **Regulatory Approvals.** The company's products require regulatory approvals, and there can be no assurances that the requirements to achieve these approvals can be met. Furthermore, even if a drug product is approved, the regulators may impose limitations on the use or marketing of such product.
- **Clinical Science:** The company will need to demonstrate to its "sophisticated" clients (doctors and other physicians) that the product is effective, reliable, accessible, and marketable.
- **The Competitive Landscape & IP.** The company does have intellectual properties and knows how to protect the utility of its drugs; however, our patent position is highly uncertain.
- **Dilution:** The company is likely to incur losses for the foreseeable future until it is able to generate sufficient revenue from product sales. Our model assumes a rising share count. There can be no assurances that the company can successfully raise the capital required to execute its business strategy.

Exhibit 4. Income Statement

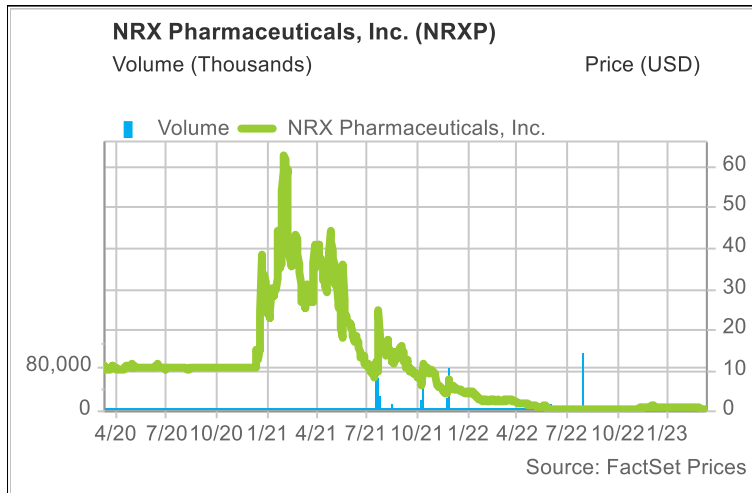
NRx Pharmaceuticals: Income Statement																
000 : YE December 31	2022A	1Q23E	2Q23E	3Q23E	4Q23E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Product sales	-	-	-	-	-	-	-	-	50,000	200,000	300,000	400,000	600,000	660,000	726,000	798,600
NRX-101 for BPD	-	-	-	-	-	-	-	-	-	100,000	200,000	300,000	420,000	588,000	646,800	711,480
NRX-101 for PTSD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Product Sales	-	-	-	-	-	-	-	-	50,000	300,000	500,000	700,000	1,020,000	1,248,000	1,372,800	1,510,080
Expenses																
COGS	-	-	-	-	-	-	-	-	12,000	60,000	90,000	105,000	153,000	187,200	192,192	151,008
COGS %	0%	0%	0%	0%	0%	0%	0%	0%	24%	20%	18%	15%	15%	15%	14%	10%
Research and Development	17,027	4,904	5,108	5,108	5,312	20,432	24,519	29,423	23,538	18,830	19,019	20,921	25,105	30,126	30,427	30,731
General and Administrative	27,370	6,634	6,911	6,911	7,187	27,644	27,920	28,199	28,481	28,766	29,054	29,344	29,638	29,934	30,234	30,536
Settlement Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reimbursement of expenses from Relief Therapeutics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	44,397	11,538	12,019	12,019	12,500	48,076	27,920	28,199	40,481	88,766	119,054	134,344	182,638	217,134	222,426	181,544
Loss from Operations	(44,397)	(11,538)	(12,019)	(12,019)	(12,500)	(48,076)	(27,920)	(28,199)	9,519	211,234	380,946	565,656	837,362	1,030,866	1,150,374	1,328,536
Other (income) Expenses																
Gain on extinguishment of debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest income	(249)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest expense - Convertible note	505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change in fair value of warrant liability	(255)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change in fair value of Earnout Cash liability	(4,582)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total other (income) expense	(4,581)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Loss	(39,816)	(11,538)	(12,019)	(12,019)	(12,500)	(48,076)	(27,920)	(28,199)	9,519	211,234	380,946	565,656	837,362	1,030,866	1,150,374	1,328,536
Tax Rate	0%	0%	0%	0%	0%	0%	0%	0%	5%	8%	10%	18%	24%	28%	30%	31%
GAAP Net Income (loss)	(39,816)	(11,538)	(12,019)	(12,019)	(12,500)	(48,076)	(27,920)	(28,199)	9,043	194,335	342,852	463,838	636,395	742,223	805,262	916,690
GAAP-EPS	(0.61)	(0.15)	(0.13)	(0.11)	(0.10)	(0.48)	(0.19)	(0.15)	0.04	0.90	1.59	2.14	2.92	3.40	3.67	9.15
GAAP EPS (dil)	(0.61)	(0.14)	(0.12)	(0.10)	(0.08)	(0.42)	(0.16)	(0.12)	0.03	0.74	1.30	1.75	2.39	3.40	3.67	9.15
Wgtd Avg Shrs (Bas) '000	65,767	77,897	93,676	109,613	130,709	102,974	150,373	194,532	214,210	215,068	215,930	216,795	217,664	218,535	219,411	100,150
Wgtd Avg Shrs (Dil) '000	65,767	82,897	103,726	124,763	151,011	115,600	176,225	234,097	261,975	263,024	264,078	265,136	266,198	267,264	268,335	100,150

Source: Dawson James estimates, company reports

Companies mentioned in this report:

Important Disclosures:

Price Chart:



Price target and ratings changes over the past three years:

- Initiated – Buy – March 17, 2023 – Price Target \$3.0
- Update Report – March 27, 2023 – Price Target \$3.0
- Update Report – March 31, 2023 – Price Target \$3.0
- Price Target Change- April 3, 2023 Price Target goes from \$3.0 to \$9.0

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Current as of 17-Mar-23

	Company Coverage		Investment Banking	
Ratings Distribution	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	25	69%	1	3%
Market Perform (Neutral)	11	31%	2	6%
Market Underperform (Sell)	0	0%	0	0%
Total	36	100%	3	9%

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