MIRA Pharmaceuticals, Inc. (Nasdaq: MIRA)

Rating: Buy

Price Target: $10.00
Share Price: $0.84

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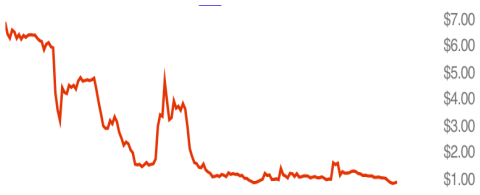
Company Data	
Average Daily Volume (M)	0.698
52-Week Range	0.76-6.95
Shares Outstanding (M)	14.781
Market Cap (M)	12.386
Enterprise Value (M)	7.786
Total Cash (M), mrq	4.603
Total Debt (M)	0
Total Debt to Cap	0

Estimates				
FYE: Dec		2023A	2024E	2025E
EPS	Q1	(0.10)	(0.06)	(0.09)
	Q2	(0.10)	(0.08)	(0.08)
	Q3	(0.26)	(0.09)	(0.08)
	Q4	(0.20)	(0.12)	(0.12)
	FY	(0.64)	(0.35)	(0.37)
P/E		NM	NM	NM
Rev	Q1	0.0	0.0	0.0
	Q2	0.0	0.0	0.0
	Q3	0.0	0.0	0.0
	Q4	0.0	0.0	0.0
	FY	0.0	0.0	0.0
EV/Sales		N/A	N/A	N/A

One-Year Performance Chart



Source: E*Trade.

Engineering Cannabinoids to Treat Neurodegenerative Diseases and Chronic Pain

Potential to Fill the Unmet Medical Need in Neurologic and Neuropsychiatric Conditions

Summary

We re-initiate coverage on MIRA Pharmaceuticals with a Buy rating and a DCF-based 21-month price target of $10.00. MIRA is a preclinical development-stage life sciences company with two neuroscience programs, MIRA-55 and Ketamir-2, targeting a broad range of neurologic diseases and neuropsychiatric disorders.

Our rating is based on our view that the innovative potential of MIRA-55 and Ketamir-2 and their promising mechanisms of action warrant a higher valuation than the market is currently assigning to the company's shares. However, MIRA represents a high-risk investment as the company has numerous hurdles to clear before bringing its product candidates to market. Many of the numerous hurdles MIRA will face along the product development timeline are binary events, and each could reduce the value of an asset to zero or, at a minimum, represent a significant setback. Further, MIRA competes in crowded target markets and may therefore face impediments to developing market traction against better-established competitors even after successful clinical development.

We expect MIRA to realize a sizable cash inflow from the sale of the Ketamir-2 and MIRA-55 assets in 2026 and begin generating product revenue in 2027.

That Ketamir-2 is not considered a controlled substance according to United States Drug Enforcement Administration (DEA) schedules, helps MIRA Pharmaceuticals avoid certain legal and regulatory requirements, elevated production costs, and manufacturing/transportation restrictions. A DEA classification of MIRA-55 is currently pending. If successfully developed, price and insurance coverage will be key considerations for patients and providers, influencing market penetration. Proper marketing strategy and sales tactics will be crucial in raising awareness about the drugs' new mechanisms of action and to inform prescribers of potential use cases.

Our main concerns focus on the current entrenchment of low-cost generics across the target indications, a market condition expected to be more pronounced in three to five years when MIRA Pharmaceuticals expects its product candidates to be market ready. In addition, there are branded prescription drug candidates being developed by competitors with deeper pockets than MIRA Pharmaceuticals, which have a probability of coming to market before MIRA's products, thus gaining a first-mover advantage in areas of unmet need. Finally, when compared to larger firms with established brands and sales channels, it is difficult for companies of MIRA's size to conduct effective product awareness campaigns.

We expect MIRA's stock to exhibit volatility that is typical of early-stage, biotech microcap companies. With the stock currently hovering in the one-dollar vicinity, a prolonged slump in the stock price carries the risk of delisting from the Nasdaq, which could result in further devaluation. On the upside, once proof-of-concept for its technologies has been established, MIRA could become an attractive acquisition target for larger competitors in the field.

Key Points

- The company's two product candidates demonstrate management's strategic focus on enhancing effects of known pharmaceutical compounds and could lead to improved safety and efficacy outcomes. If successful, this approach could position the company to capitalize on unmet needs, offering a competitive advantage over current therapeutic options.

- Ketamir-2 is classified as an unscheduled drug by the DEA and is therefore not considered a controlled substance.

- Initial preclinical results of the company's MIRA-55 product candidate indicate possible improvements in disease treatment via new mechanisms of action, coupled with decreased adverse events. These developments could lead to improved cognitive function, increased pain endurance, and enhanced management of anxiety.

- The company's two product candidates address large target markets with significant unmet medical needs. Specifically, MIRA-55 targets the $43 billion global CNS market and the $13.1 billion U.S. medical marijuana market. Ketamir-2 targets the $7.5 billion U.S. market for major depressive disorder, as well as the $3.1 billion ketamine anesthesia market.

- MIRA Pharmaceuticals has sufficient cash to support operations through the end of 2024 and a $3 million line of credit for the development of Ketamir-2. We expect that the company will need

to raise $10 million in 2025 prior to their anticipated asset sales in 2026, part of which could derive from the exercise of founder warrants. If successfully completed, an asset sale would supply MIRA Pharmaceuticals with sufficient capital to self-fund operations going forward.

- Potential catalysts for MIRA stock in 2024 include the advancement of preclinical work for both MIRA-55 and Ketamir-2, an Investigational New Drug (IND) submission for Ketamir-2 at year-end, and announcements of additional strategic partnerships. While news of this kind is unlikely to drive a large increase in share price from current levels, these events would mark progress toward major value inflection points anticipated for 2025 and 2026, namely clinical trial results demonstrating proof-of-concept and the subsequent sale of the Ketamir-2 and MIRA-55 assets.

Company Description

MIRA Pharmaceuticals, Inc. is a preclinical development-stage life sciences company with two neuroscience programs targeting a broad range of neurologic diseases and neuropsychiatric disorders:

1. MIRA-55, a novel oral synthetic tetrahydrocannabinol (THC) pharmaceutical, is currently in IND-enabling studies to treat anxiety and cognitive decline typically associated with early-stage dementia in the elderly, as well as the chronic neuropathic pain frequently experienced by this patient population.

2. Ketamir-2, a novel oral ketamine analog, is under investigation to potentially deliver ultra-rapid antidepressant effects for patients suffering from major depressive disorder (MDD).

Ketamir-2 is classified as an unscheduled drug by the DEA and is therefore not considered a controlled substance or listed chemical. A DEA classification of MIRA-55 is pending.

MIRA Pharmaceuticals was incorporated in September 2020 and is headquartered in Baltimore, Maryland. The company completed its initial public offering on August 3rd, 2023, and its common stock began trading on the Nasdaq Capital Market under the symbol “MIRA.”

Background

Cannabinoids are a class of chemical compounds that occur in nature, with a principal presence in cannabis plant extracts. The two major cannabinoids are THC and cannabidiol (CBD). These compounds bind to the CB1 and CB2 cannabinoid receptors, which are found throughout the body at the cellular level. CB1 receptors are concentrated in the central nervous system (CNS), while CB2 receptors are found mostly in peripheral organs and are associated with the immune system. Activation of CB2 receptors is believed to have potential therapeutic implications for inflammatory, autoimmune, and neurodegenerative conditions.

The effects of cannabinoids have been shown to impact nervous system functions, immune responses, muscular motor functions, gastrointestinal maintenance, blood sugar management, and the integrity of ocular functions.

THC is psychoactive, producing a high or sense of euphoria when bound to CB1 receptors in the brain. THC is also known to have biphasic physiological effects, eliciting positive effects (such as anti-anxiety therapeutic effects) at low levels while causing undesirable symptoms (such as pro-anxiety effects) at high levels.

In contrast, CBD does not cause the euphoric effects that occur with THC as it binds weakly to CB1 receptors. In its pure form, CBD has no psychoactive effect, but it acts as a CNS depressant, causing drowsiness.

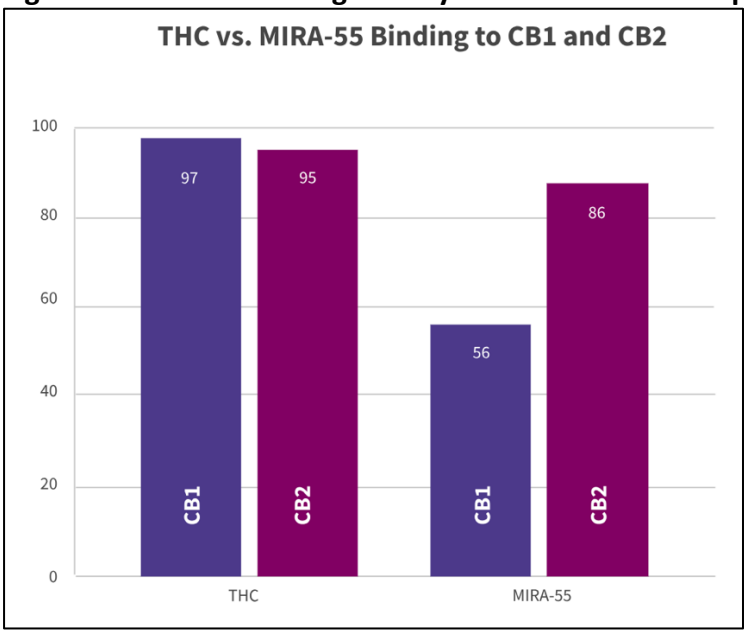
Product Pipeline

MIRA-55

MIRA-55, a synthetic THC analog, could mark a significant advance in addressing various neuropsychiatric, inflammatory, and neurological diseases and disorders. It is being developed as a prescription marijuana drug targeting neuropathic and inflammatory pain, anxiety, and improved cognition. MIRA-55 is being developed with the intention of harnessing and augmenting the useful effects of THC while reducing its adverse effects. Successful development of the molecule would solve the three central challenges in cannabinoid drug development: (1) moderating or minimizing adverse side effects of THC, such as negative mood, memory impairment, increased appetite, and paranoia, (2) improving the therapeutic potential of both THC and CBD by capturing their strong anti-inflammatory, anti-pain, and anti-anxiety properties, and (3) enhancing the beneficial effects of both compounds.

MIRA-55 is being formulated as a once-daily oral medication.

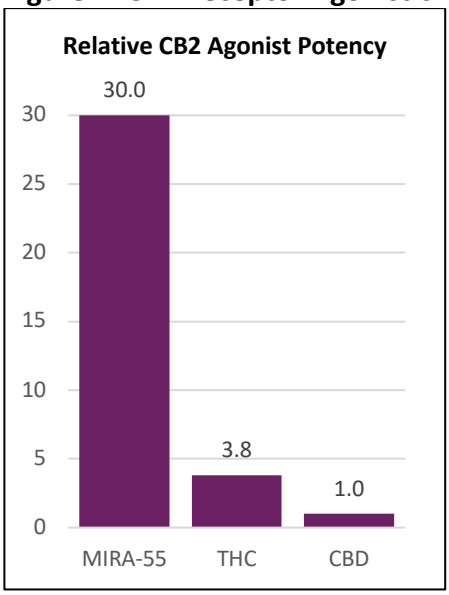
Figure 1: MIRA-55 Binding Affinity to CB1 and CB2 Receptors



Source: MIRA Pharmaceuticals.

MIRA-55 targets the cannabinoid receptors CB1 and CB2, i.e., binding sites in the body's endocannabinoid system, a cell-signaling system found throughout the body that is involved in a variety of physiological processes including appetite, pain sensation, mood, and memory. It is a monophasic CB1 partial agonist/antagonist and a potent CB2 agonist. Unlike THC, which induces psychoactive effects through its activity at the CB1 receptor, MIRA-55 has less potency at CB1, but maintains high binding affinity and activation at CB2. Since the CB1 receptor corresponds with intoxication, MIRA-55 may be less intoxicating, i.e., cause fewer adverse psychoactive events than THC while still delivering valuable therapeutic effects, such as pain relief, neuroprotection, anti-inflammatory, anti-fibrotic, and anti-psychotic effects.

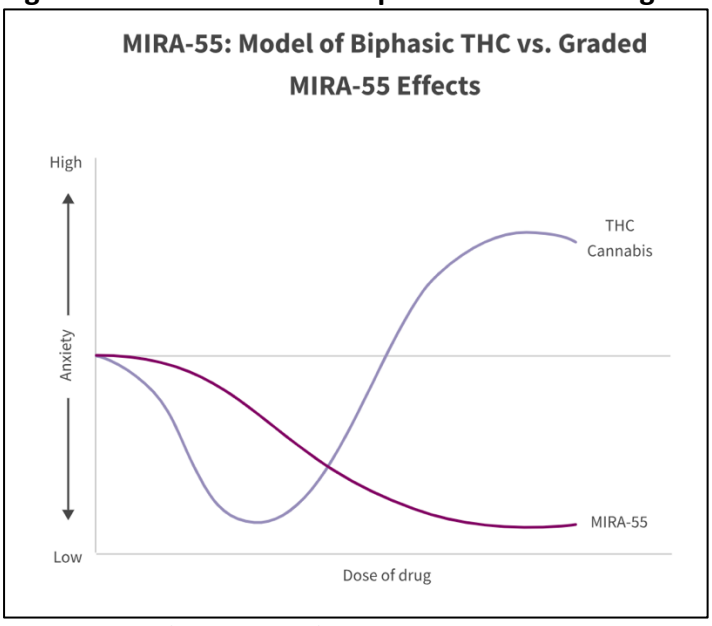
Figure 2: CB2 Receptor Agonistic Effects of MIRA-55 Exceed Those of THC and CBD



Source: MIRA Pharmaceuticals.

The CB2 receptor agonistic effects of MIRA-55 are eightfold more potent than THC and thirtyfold more potent than CBD. As a CB2 agonist, MIRA-55 may be a compelling treatment for a range of neurodegenerative diseases associated with neuroinflammation caused by microglial activation, such as Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis. In preclinical studies CB2 agonism has been shown to regulate neuroinflammatory processes, reducing the neuronal damage characteristic of degeneration.

Figure 3: MIRA-55 is a Monophasic CB1 Partial Agonist While THC Elicits a Biphasic Effect



Source: MIRA Pharmaceuticals.

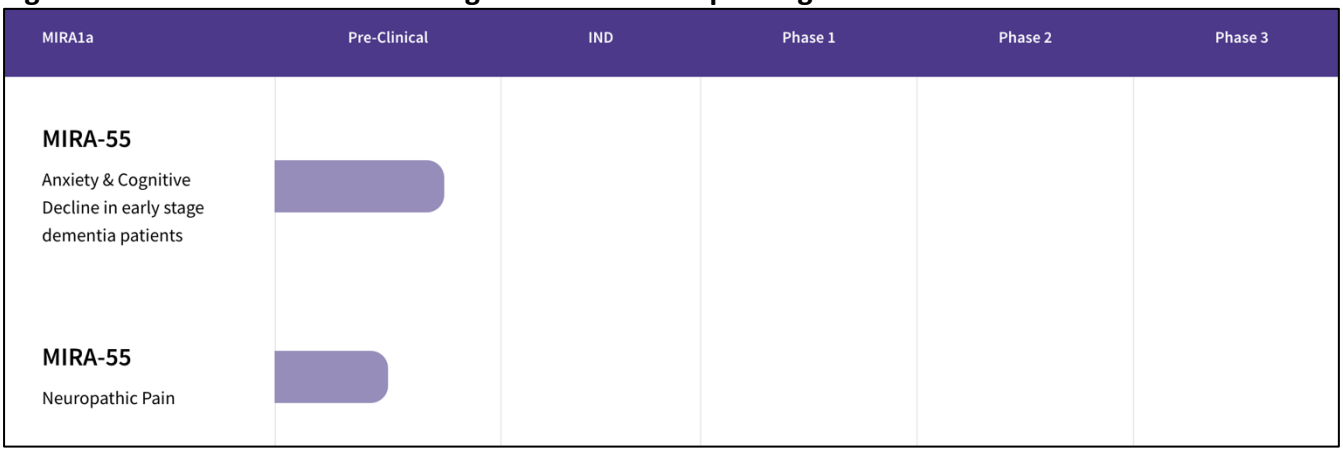
As a synthetic molecule, MIRA-55 is anticipated to contain fewer contaminants and thus induce fewer adverse side effects when compared to molecules extracted from marijuana. In addition, a dose response model comparing MIRA-55 to THC at the CB1 receptor showed that MIRA-55 acts as a monophasic partial agonist that lowers anxiety at high doses, whereas THC exhibits a biphasic effect, initially reducing anxiety at low to intermediate doses while raising anxiety at higher doses. These findings suggest that MIRA-55 may act as an anti-anxiety medication while minimizing the pro-anxiety side effects seen at higher doses of THC.

MIRA-55 Preclinical Results from Animal Experiments in Rodents:

In preclinical studies in mice, MIRA-55 has shown promise as both an anxiolytic and an analgesic, reducing anxiety, alleviating pain, and enhancing memory and cognitive performance, while provoking minimal side effects. If translatable to humans, MIRA-55 could have significant therapeutic potential for its intended indications of anxiety, chronic pain, and cognitive impairment.

MIRA-55 Development Stage and Timeline:

Figure 4: MIRA-55 is in IND-Enabling Studies for Multiple Target Indications



Source: MIRA Pharmaceuticals.

Preclinical development work on MIRA-55 is ongoing and expected to be completed during 2024. This entails laboratory evaluations of drug chemistry, formulation, and stability; safety/toxicology studies and pharmacology testing; as well as maximum tolerated dose and neurobehavioral evaluation in animals. Phase 1 human clinical trials for anxiety and cognitive decline in the elderly are expected to begin at the end of Q2 2025. A second IND for MIRA-55 will focus on the treatment of neuropathic pain.

To develop MIRA-55 as a prescription drug, MIRA Pharmaceuticals is following a well-established regulatory path from preclinical testing to clinical testing to U.S. Food and Drug Administration (FDA) approval.

Ketamir-2

Ketamir-2, an orally administered synthetic ketamine analog, is being developed as a rapidly acting antidepressant to fill the therapeutic gap experienced by those 30% of patients who do not respond to existing treatments for depressive disorders. Early preclinical human intestinal drug absorption studies suggest oral bioavailability of Ketamir-2 of approximately 80%, more than twice that of oral or intranasal ketamine.

Like ketamine, it is expected that Ketamir-2 will elicit antidepressant effects in four hours rather than the two weeks required with conventional antidepressants.

Ketamir-2 is being developed as a take-at-home alternative to Spravato®, which must be dosed under medical observation. On-demand home administration would grant patients greater autonomy and accessibility to effective depression treatment.

Ketamir-2 is being formulated as a once-daily oral medication.

Market Opportunity

If approved by the FDA, MIRA-55 will compete in three key overlapping growth markets: anxiety, cognitive decline, and the neuropathic/inflammatory pain segments of the chronic pain market. Positioned at the convergence of these three markets, MIRA-55 is intended to target CNS disorders. According to IQVIA's *Global Use of Medicines 2023* analysis, the CNS market is expected to grow to $48 billion by 2027, at a rate of two to five percent per year.

Treatment methods now available for both anxiety and chronic pain fail to meet the needs of large patient populations and have not seen significant innovation in recent years. Among this patient population there are high rates of drug-resistant disease and significant adverse events observed with available treatments, including somnolence, decreased appetite, impaired memory, and opioid addiction. To address unmet needs and ameliorate adverse events, various CBD-based programs are in preclinical and clinical trials.

Successful development and approval of MIRA-55 would bring improved mechanisms of action to this patient population, while reducing unwanted side effects of the THC and CBD molecules. Key opinion leaders in the medical community have shown interest in novel drugs with cannabinoid-like mechanisms of action for the treatment of refractory patients. Insurance payors have indicated a positive perception of MIRA-55 as an alternative for other CBDs.

According to valuation reports commissioned from IQVIA in 2021, assuming successful development of both MIRA-55 and Ketamir-2 for the target markets detailed below, U.S. 2035 base case net revenue is projected to reach $1.6 billion for MIRA-55 and $3 billion for Ketamir-2. To achieve these revenue targets, strong safety profiles and efficacy matching or exceeding existing treatment options are required. Proper strategic positioning coupled to competitive pricing will be critical.

Potential expansion markets for MIRA-55 include neurobehavioral disorders such as attention deficit hyperactivity disorder (ADHD), neurodegenerative diseases such as Parkinson's, and diseases associated with neuroinflammation such as multiple sclerosis. Potential expansion markets for Ketamir-2 include drug addiction and post-traumatic stress disorder (PTSD), as well as pediatric markets.

Anxiety

Anxiety disorders are chronic conditions marked by an excessive and persistent sense of apprehension, with physical symptoms such as sweating, palpitations, and feelings of stress. They include phobias, social anxiety disorder, post-traumatic stress disorder (PTSD), generalized anxiety disorder (GAD), and panic disorder.

Standard treatment encompasses cognitive behavioral therapy, often combined with pharmaceuticals such as selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), and tricyclic antidepressants (TCAs).

Unmet needs in the treatment of anxiety disorders include more effective, fast-acting medications, early identification of non-responders, effective treatments for refractory disorders, and prevention of relapse.

Over 40 million U.S. adults suffer from an anxiety disorder. In recent years, prevalence of the condition has increased dramatically among adults between the ages of 18 and 25. According to Adroit Market Research, Future Market Insights, and Fortune Business Insights, within the CNS market opportunity the global anxiety market accounts for $10-$15 billion per year, growing at an estimated 3.2% annually in the U.S.

Cognitive Impairment

Cognitive impairment describes conditions marked by notable decline in a patient's cognitive abilities, interfering with daily activities. Examples are Alzheimer's disease, dementia, mild cognitive impairment, and other related diseases.

Current treatments for cognitive impairment are palliative rather than curative, alleviating symptoms and at best delaying rather than stopping or reversing disease progression.

Approximately 16 million U.S. adults exhibit cognitive impairment, including 5.8 million diagnosed with Alzheimer's disease. According to GlobalData, the global market for Alzheimer's drugs is projected to reach $13 billion by 2030, growing at 12-20% annually. The growth will be driven by new drugs entering the market, expanding the treatable patient population, resulting in increased insurance reimbursements.

Neuropathic Pain

Neuropathic pain is a complex pain condition arising from dysfunction of or damage to the nervous system. It can continue even after the cause of the pain from injury or disease has healed or been

treated. It occurs due to a malfunction in nerve signaling rather than a response to continued harm. Neuropathic pain conditions include diabetic peripheral neuropathy, postherpetic neuralgia, and multiple sclerosis-related neuropathy.

Current treatments for neuropathic pain may leverage anticonvulsants, which can reduce the excitability of nerves, thereby dampening abnormal electrical activity, or antidepressants, which increase serotonin and norepinephrine levels that modulate the way the brain perceives pain. Opioids are used less frequently due to addiction and overdose risk.

Neuropathic pain affects over 20 million people per year in the U.S. Thus, developing non-opiate targeted and efficient therapies with higher effectiveness and more moderate side effects than those associated with anticonvulsants and antidepressants, is a priority for the pharmaceutical industry. CBD-like therapies are being investigated in parallel with other solutions.

Chronic pain is defined as neuropathic or nociceptic pain lasting longer than 12 weeks. Chronic nociceptic pain is managed using high dose nonsteroidal anti-inflammatory drugs (NSAIDs) such as aspirin, ibuprofen, and naproxen.

Chronic pain is the leading cause of long-term disability in the US, affecting over 50 million people per year (more than twice the U.S. Census Bureau's 2021 population figure for Florida). IQVIA's *Global Use of Medicines 2023* report estimates that the U.S. market for chronic pain drugs will be about $20 billion by 2027, growing by 3-6% per year over the next four years.

U.S. market drivers for the neuropathic pain segment include increasing prevalence of pain across all demographics and increasing prevalence of diabetes, which can lead to diabetic neuropathy. Demographic-driven increases in the incidence of oncology-related pain and pain associated with other age-related comorbidities will be among the key drivers of patient population size and prescription issuance growth.

Depressive Disorders

Major depressive disorder (MDD) is defined by depressed mood, diminished interests, impaired cognitive function and vegetative symptoms such as disturbed sleep, diminished appetite, and inability to focus on daily activities. The majority of MDD cases are caused by life events and trauma, although genetics can also play a role in how and when the condition manifests.

Like anxiety disorders, treatment options for MDD encompass cognitive behavioral therapy, which is often combined with one or more pharmaceutical drugs, such as SSRIs, SNRIs, TCAs, and Spravato® (esketamine). For major depressive disorder with suicidal ideation (MDDSI), pharmaceutical options shown to alleviate suicidal ideation include lithium, clozapine, and ketamine. Despite the availability of several treatment options, antidepressants with greater efficacy and faster onset of action remain a medical need.

Treatment-resistant depression (TRD) is a subset of MDD, exhibited by patients who do not respond to traditional first-line therapeutic options. To be considered treatment-resistant, these patients have shown an inadequate response to at least two trials of antidepressant pharmacotherapy. Treatment resistance occurs in up to 30% of the MDD population.

MDD affects approximately 17.6 million Americans, of which 5.5 million report suicidal ideation of any kind, and 2 million report suicidal ideation with intent. According to insights10, the U.S. anti-depressant drugs market was valued at $6.9 billion in 2022 and is estimated to expand at a compound annual growth rate (CAGR) of 3.9%, reaching $9.4 billion in 2030. Nearly half the market size is attributable to TRD.

Table 1: Total Addressable Patient Populations for MIRA-55 and Ketamir-2 Target Indications

Target Indications	Total Eligible Population	Diagnosed Prevalence	Treatment Rate	Total Addressable Population
MIRA-55				
Mild Cognitive Impairment/Early Dementia	33.0M	15-20%	35-45%	4.95-6.6M
Anxiety	40.0M	15-20%	35-50%	6.0-8.0M
Neuropathic Pain	20.0M	10-15%	25-35%	1.0-1.5M
Ketamir-2				
Treatment-Resistant Depression	246.7M	2%	65%	3.8M
MDSI	246.7M	3%	65%	4.9M

Source: MIRA Pharmaceuticals.

In Table 1 above, total addressable populations are derived from published literature on epidemiology for each disease and by applying estimated diagnosis and treatment rates. Treatment paradigms can differ from patient to patient due to the array of potential root causes, external factors, and treatment options. Healthcare professionals are always looking for more efficacious treatments with fewer side effects and faster onset of action.

Medical Marijuana Market

According to Statista Market Insights, the 2023 U.S. medical marijuana market was $13.1 billion, growing at a CAGR of 12.43% to $21.0 billion in 2028. The 2023 U.S. legal recreational marijuana market was $22.1 billion, growing at a CAGR of 14.74% to $38.3 billion by 2028. A portion of recreational marijuana users choose to self-medicate to ease pain and/or anxiety. Thus, both subsets are considered in this analysis. In some patient populations and cultural settings marijuana may not be a viable treatment option for neurological disorders while alternative drugs often deliver suboptimal outcomes. The goal of MIRA-55 is to offer physicians and patients an FDA-approved, viable synthetic non-intoxicating option not derived from the cannabis plant.

Competitive Landscape

Cannabinoid Therapies

MIRA Pharmaceuticals' MIRA-55 product candidate will compete against several approved cannabinoid therapies, as summarized below:

Table 2: FDA/EMCDA-Approved Cannabinoid Therapies

Cannabis Therapies Currently Authorized by Regulators					
Brand Name/ Classification	**Originator**	**Description**	**Indications**	**Form**	**Location of Approvals**
Sativex (nabiximols)	GW	Extract of cannabis: mix of delta-9-THC and CBD, 1:1 ratio	Multiple sclerosis	Sublingual Spray	25 countries in Europe, Latin America, North America, and Australia. Not approved in the U.S.
Marinol (dronabinol) Schedule 3	Unimed	Synthetic delta-9-THC	Loss of appetite in people with AIDS and chemotherapy-induced nausea and vomiting	Capsules	U.S., Canada, Germany, Australia, and New Zealand
Syndros (dronabinol) Schedule 2	Insys	Synthetic delta-9-THC	Loss of appetite in people with AIDS and chemotherapy-induced nausea and vomiting	Liquid	U.S.
Cesamet (nabilone) Schedule 2	Eli Lilly	Synthetic cannabinoid similar to THC	Chemotherapy-induced nausea and vomiting	Capsules	U.S., Canada, Europe, and Australia
Epidiolex Unscheduled	GW	CBD	Dravet and Lennox-Gastaut syndrome (pediatric epilepsies)	Liquid	U.S.

Sources: European Monitoring Centre for Drugs and Addiction, FDA, drug labels, company reports.

Sativex® (nabiximols), a cannabis extract consisting of a 1:1 mix of THC and CBD, is an oromucosal spray indicated as a treatment for symptom improvement in adult patients with moderate to severe spasticity due to multiple sclerosis who have not responded adequately to other anti-spasticity medication and who demonstrate clinically significant improvement in spasticity-related symptoms during an initial trial of therapy. Sativex® is not assigned a schedule in the U.S. by the DEA as it is not FDA-approved. In the UK it is listed as a Class B controlled drug under the Misuse of Drugs Act 1971 and is placed in Schedule 4 to the Misuse of Drug Regulations of 2001.

Marinol® (dronabinol) is an oral THC cannabinoid indicated in adults for the treatment of anorexia associated with weight loss in AIDS patients and chemotherapy-induced nausea and vomiting in patients

who have failed to respond adequately to conventional antiemetic treatments. Under the Controlled Substances Act (CSA), Marinol® is a Schedule 3 controlled substance, i.e., a substance with moderate to low potential for physical and psychological dependence.

Syndros® (dronabinol) is a liquid formulation of Marinol® indicated for treatment of the same patient population and conditions as Marinol® capsules. Syndros® is a Schedule 2 controlled substance, i.e., a substance with high potential for abuse, with use potentially leading to severe psychological or physical dependence.

Cesamet® (nabilone) is an oral synthetic cannabinoid indicated for the treatment of chemotherapy-induced nausea and vomiting in patients who have failed to respond adequately to conventional antiemetic treatments. Under the CSA, Cesamet® is a Schedule 2 controlled substance, i.e., a substance with high potential for abuse, with use potentially leading to severe psychological or physical dependence.

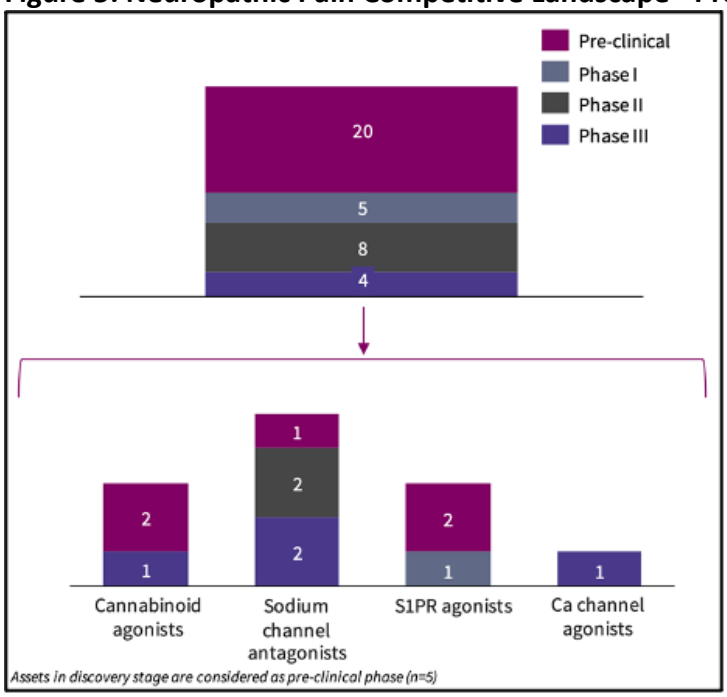
Epidiolex® is the first and to date the only FDA-approved prescription cannabidiol oral solution for the treatment of seizures associated with two rare and severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome, in patients two years of age and older. The DEA placed Epidiolex® in Schedule 5 of the CSA, the least restrictive category.

Neuropathic Pain

The most frequently used branded prescription and generic drugs currently on the market to treat neuropathic pain include the anticonvulsants/antiseizure medications Lyrica® (pregabalin), Gralise® (gabapentin), Horizant® (gabapentin enacarbil), and Neurontin® (gabapentin); SNRI Cymbalta® (duloxetine), topical analgesics/anesthetics Qutenza® (capsaicin) and Lidoderm®; oral opioids Oxycontin®, Ultram®, Opana® (oxymorphone), and Nucynta® (tapentadol); Duragesic®, an opioid administered via a fentanyl transdermal patch; and Prialt® (ziconotide), a non-narcotic, non-opioid pain medication that is administered via injection into the spinal fluid by a physician.

Most assets under development for neuropathic pain indications are small molecules in preclinical development, which fall into the categories of cannabinoid agonists, sodium channel antagonists, sphingosine 1-phosphate receptor (S1PR) agonists, and calcium channel agonists.

Figure 5: Neuropathic Pain Competitive Landscape - Product Candidates Under Development



Sources: Pharmaprojects, clinicaltrials.gov, TrialTrove, Clarivate Analytics, IQVIA.

Of the three cannabinoid agonists, Jazz Pharmaceuticals' GW-1000-02 (Sativex®, nabiximols) is the most advanced, currently in Phase III trials for neuropathic pain associated with spinal cord injury in the UK, and in a multicenter Phase II proof of concept trial of cannabis derivatives in neuropathic pain in the U.S. Sativex® has experienced Phase III setbacks in the past, most recently a failure to achieve the primary endpoint of an improvement in muscle tone in multiple sclerosis patients in June 2022.

In contrast, Vertex Pharmaceuticals recently announced positive results from a Phase II trial of VX-548, a selective NaV1.8 inhibitor (sodium channel antagonist) in painful diabetic peripheral neuropathy. Vertex has also initiated a second Phase II trial of VX-548 in peripheral neuropathic pain, and its three Phase III studies of VX-548 in acute pain are on track to read out in the first quarter of 2024. If approved for acute pain, off-label use for chronic pain will be a likely use case.

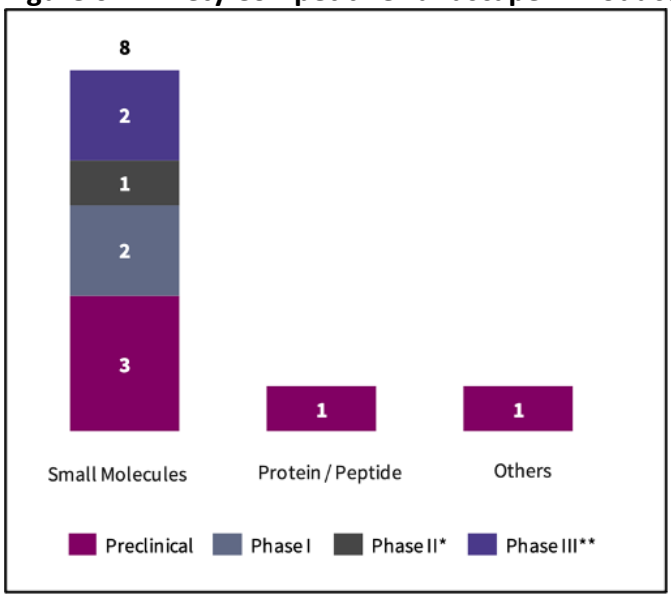
Anxiety

Branded drugs currently on the market to treat anxiety include the SNRIs Effexor XR® (venlafaxine) and Lexapro® (escitalopram); the GABA agonist Ativan® (lorazepam); the selective serotonin and norepinephrine reuptake inhibitor Cymbalta® (duloxetine); and the benzodiazepine depressants Xanax® (alprazolam) and Rivotril® (clonazepam).

The branded anxiety market has been declining since at least 2018, both in terms of total prescriptions and overall sales. Underlying this trend is loss of exclusivity linked to patent expirations and thus an increase in the number of generics.

There are ten product candidates being developed for anxiety, the majority of which are small molecules for oral administration.

Figure 6: Anxiety Competitive Landscape – Product Candidates Under Development



*Includes phase I/II and IIb; **Includes Phase II/III
Sources: Biomedtracker, IQVIA, Mira Pharmaceuticals.

Molecules currently in clinical trials target GABA-A, serotonin receptors, and glutamine channels.

Biohaven's orally dissolving BHV-0223, a new formulation of riluzole, and Allergan's Viibryd®, targeting glutamine and serotonin 5-HT1 receptors, are the most advanced, now in Phase III.

Bionomics' BNC210 acts as a negative allosteric modulator of the α7 nicotinic acetylcholine receptor and is in Phase II testing.

Cerevel Therapeutics' CVL-865 and SK Biopharmaceuticals' Xcopri® both target GABA-A receptors and are in Phase I development.

Dementia

FDA-approved medications include Aricept® (donepezil), approved to treat all stages of Alzheimer's disease, Exelon® (rivastigmine), approved for mild to moderate Alzheimer's as well as mild to moderate dementia associated with Parkinson's disease, Razadyne® (galantamine), approved for mild to moderate Alzheimer's disease, Memantine®, approved to slow the progression of moderate to severe Alzheimer's disease, and Leqembi® (lecanemab), approved for early Alzheimer's disease.

FDA approved in 1996, Aricept® is an acetylcholinesterase inhibitor that improves the function of nerve cells in the brain by preventing the breakdown of a chemical called acetylcholine. Dementia patients typically have lower than normal levels of acetylcholine, which is implicated in the processes of memory,

thinking, and reasoning. Aricept® helps restore the balance of neurotransmitters in the brain. The first generic formulation of Aricept® became available in November 2010.

Exelon® is a cholinesterase inhibitor that inhibits production of both butyrylcholinesterase and acetylcholinesterase, enzymes that would break down the brain neurotransmitter acetylcholine.

Like Aricept® and Exelon®, Razadyne® inhibits acetylcholinesterase, thereby increasing the availability of acetylcholine for synaptic transmission. Additionally, Razadyne® binds to nicotinic receptors, increasing release of acetylcholine and further increasing the neurotransmitter's availability.

FDA approved in 2003, Memantine® works as an ion channel blocker by acting on N-methyl-D-aspartate (NMDA) receptors. The NMDA receptor is a receptor of glutamate, the primary excitatory neurotransmitter in the human brain. It plays an integral role in synaptic plasticity, a neuronal mechanism believed to be the basis of memory formation. Memantine® is often used for patients who are intolerant of or have contraindications to acetylcholinesterase inhibitors.

FDA approved in July 2023, Leqembi® (lecanemab) is a monoclonal, amyloid beta-directed antibody that removes amyloid and tau proteins from the brain. In pivotal trials in patients with early-stage Alzheimer's disease, Leqembi® slowed clinical decline by 27% after 18 months of treatment, compared to placebo. Administered via intravenous infusion, Leqembi® has caused severe side effects in a small subset of patients, including brain swelling and small hemorrhages.

According to the Alzheimer's Society, there are currently well over 100 drug candidates being tested in clinical trials for Alzheimer's disease. Two of the most promising of these, donanemab and remternetug, are immunotherapies like Leqembi®, designed to clear amyloid plaques from the brain, thereby slowing disease progression.

Major Depressive Disorder

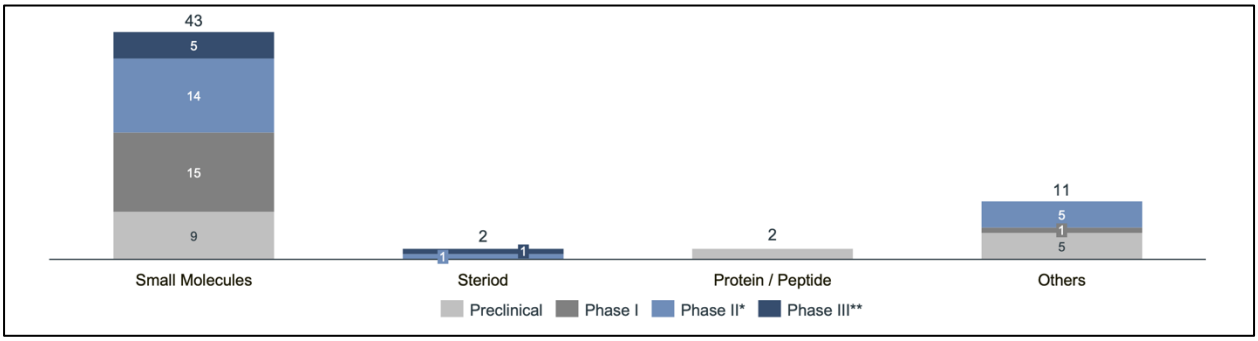
Overlapping with available therapies for anxiety, approved SSRIs for MDD include Celexa® (citalopram), Lexapro® (escitalopram), Prozac® (fluoxetine), Paxil® (paroxetine), Zoloft® (sertraline), and Viibryd® (vilazodone).

Mira Pharmaceuticals' Ketamir-2 was designed as an alternative to Spravato® (esketamine), a dissociative hallucinogen drug used as a general anesthetic and antidepressant. Spravato® is the active enantiomer of ketamine in terms of NMDA receptor antagonism and is more potent than ketamine, though its effectiveness for depression is modest and analogous to other antidepressants. Spravato® is the first nasal spray medication for adults with treatment resistant depression alongside an oral medication.

Rexulti® (brexpiprazole), an atypical antipsychotic, could be considered a second competitor to Ketamir-2. In the U.S., it is used as an adjunctive therapy to antidepressants for the treatment of MDD and schizophrenia. In May 2023, the FDA expanded its indication to include the treatment of agitation associated with dementia due to Alzheimer's disease.

The MDD pipeline features several promising candidates, most of which are small molecules targeting oral or intranasal routes of administration. Few are related to Ketamir-2's mechanism of action, highlighting its novelty.

Figure 7: Major Depressive Disorder Competitive Landscape – Products Under Development



*Includes phase I/II and IIb; **Includes Phase II/III
Sources: Biomedtracker, IQVIA, Mira Pharmaceuticals.

In the small molecules category, Johnson & Johnson, AbbVie, Intracellular Therapies, and Neurocrine Biosciences have assets in clinical development that target NMDA glutamate, P2X7, hypocretin, dopamine, serotonin, and opioid receptors.

In the steroid category, Sage Therapeutics' GABA receptor modulator SAGE-217 received a complete response letter from the FDA in August 2023 for major depressive disorder, citing the need for an additional study or studies.

Key Differentiating Factors

Key differentiating factors for MIRA-55 include: (1) it is a synthetic, which due to reduction of impurities could lead to a decrease of negative side effects when compared to marijuana extracts and (2) its development as a regulated prescription drug.

Key differentiating factors for Ketamir-2 include: (1) its superior oral bioavailability, which is more than double that of oral or intranasal ketamine; (2) its anticipated enhanced safety, tolerability, and ease of administration; and (3) the fact that it is unscheduled and therefore not subject to the limitations associated with controlled substances.

Intellectual Property

MIRA Pharmaceuticals owns the rights associated with U.S. Patent 10,787,675 B2, titled "Purified Synthetic Marijuana and Methods of Treatment by Administering Same," which covers the MIRA1a compound as a new chemical entity, its pharmaceutical formulations, and methods of treating Alzheimer's disease, anxiety, depression, and addiction. The patent expires on February 11, 2039.

MIRA Pharmaceuticals acquired this patent in November 2021 from SRQ Patent Holdings in exchange for a royalty of eight percent on any net sales, royalties, or other revenue earned by MIRA Pharmaceuticals from the sale, commercialization, or disposition of MIRA1a.

Foreign patents covering MIRA1a and its therapeutic uses have been issued in Australia, several European countries, Canada, Israel, and South Korea and corresponding applications are pending in China and Japan. MyMD currently owns these foreign patents and patent applications.

MIRA Pharmaceuticals has a worldwide, perpetual, royalty-free, non-exclusive license from MyMD to use MyMD's Supera-CBD™, a compound that is different from MIRA1a, as a synthetic intermediate in the manufacture of MIRA1a for all purposes including clinical development and commercial production.

In February 2024, MIRA Pharmaceuticals discovered during the manufacturing and scale-up process of its patented MIRA1a molecule, an improved, more potent and potentially more efficacious version of the molecule, now known as MIRA-55. As part of the company's due diligence and subsequent testing, management realized that the company's preclinical studies, previously attributed to MIRA1a, were in fact performed on MIRA-55.

In early March 2024, MIRA Pharmaceuticals filed a provisional patent application for MIRA-55, which encompasses all pre-clinical studies and is still pending. The company plans to pursue domestic and foreign filings based on the provisional application to seek global patent protection for MIRA-55.

If issued, MIRA Pharmaceuticals will own the patent rights ot both MIRA1a and MIRA-55, but intends to develop only MIRA-55.

Partnerships

MIRALOGX, LLC is an intellectual property holding company established by MIRA's founder. Under an exclusive licensing agreement, MIRA Pharmaceuticals will have the exclusive right to develop and commercialize Ketamir-2 in the U.S., Canada, and Mexico. The agreement between the two companies includes a $3 million line of credit, extended by MIRALOGX to MIRA Pharmaceuticals, to fund the initial development of Ketamir-2.

MIRALOGX filed U.S. Provisional App. No. 63/537,744 on September 11, 2023 and U.S. Provisional App. No. 63/451,891, on March 13, 2023, both titled "Antidepressant Compounds, Pharmaceutical Compositions, and Methods of Treating Depression and Other Disorders." MIRALOGX plans to file a corresponding international application under the Patent Cooperation Treaty (PCT) in 2024 and in due course enter the national phase in the United States, Canada and Mexico, among other countries. These applications, if granted and subject to payment of patent maintenance fees, would offer protection extending through at least March 13, 2044. The patent rights for Ketamir-2 outside of the United States, Canada, and Mexico are not included in MIRA's current patent rights.

MIRA is exploring additional strategic collaborations and partnerships to maximize the value of its product candidates.

MIRA is also party to a Master Collaboration Agreement, dated November 1, 2021, with the Johns Hopkins University School of Medicine (JHU) under which the parties may enter into collaborative research projects during a three-year term that began on November 1, 2021. The agreement grants MIRA Pharmaceuticals a right of first offer to negotiate a commercial license to intellectual property rights of JHU arising under the agreement.

Business Strategy

MIRA Pharmaceuticals' strategy entails (i) advancing MIRA-55 through clinical development for anxiety, mild cognitive impairment, and neuropathic pain and advancing Ketamir-2 through preclinical and clinical development for MDD; (ii) continuing preclinical development of MIRA-55 across a range of other CNS diseases associated with neurodegeneration and commence clinical development on the most promising indications; (iii) identifying additional product candidates and expanding current candidates into additional neurological diseases; and (iv) exploring strategic collaborations to maximize the value of its product candidates.

The company plans to sell the MIRA-55 and Ketamir-2 assets at the end of successful Phase II development, once proof-of-concept has been established. The sale would provide MIRA with a significant cash infusion, enabling continuation of then-current research and development, and potential pipeline expansion. Should the company succeed in selling the MIRA-55 and Ketamir-2 assets, MIRA could become independent of the need to raise capital in the financial markets.

Management

MIRA Pharmaceuticals' management team consists of industry veterans with a demonstrated history of drug development.

Erez Aminov, Chief Executive Officer
Mr. Aminov is an experienced biotechnology consultant and investor. In addition to his leadership role at MIRA Pharmaceuticals, he is the founder of Locate Venture Corp., a strategy and investment consulting firm for early-stage life science companies, and a consultant for Telomir Pharmaceuticals. Mr. Aminov has a detailed understanding of early-stage startup growth and vertical integration along with expertise in identifying potential partnerships with pharmaceutical companies and medical research centers. He holds a Bachelor of Arts in Accounting from Touro University in New York.

Michelle Yanez, MBA, Chief Financial Officer, Secretary and Treasurer
Ms. Yanez joined MIRA Pharmaceuticals in 2022, initially as the company's corporate controller and, since April 2023, as its Chief Financial Officer. She has over 25 years of experience in public and private biotech, pharmaceutical, and life science companies, including corporate governance experience. Prior to joining MIRA, Ms. Yanez held various positions at BioDelivery Sciences International, Inc. (NASDAQ: BDSI), including Director of Financial Reporting. She also serves as part-time Corporate Controller at Telomir Pharmaceuticals, Inc. Ms. Yanez received her MBA from Rutgers School of Business, *cum laude*, and is a member of the Institute of Management Accountants and the SEC Professionals Group.

Itzchak Angel, PhD, Chief Scientific Advisor
Dr. Angel is an executive in the pharmaceutical industry, with over 40 years' experience in guiding medical, pharmaceutical, drug, and business development in both large and emerging companies. Since 2005, he has been President and CEO of Angel Pharmaceutical Consulting & Technologies, a life science-focused consulting firm assisting clients with the strategic and operational aspects of drug development, regulatory affairs, and business planning and development. Previously, he was Head of Pharmacology at Synthelabo (Sanofi-Aventis), President and Chief Executive Officer of the stem cell company Accellta, and Vice President for R&D at Proteologics Ltd., Galmed Pharmaceuticals, and D-Pharm Biopharmaceuticals. Dr. Angel earned a PhD degree in neurochemistry from Hamburg University in Germany and pursued his postdoctoral studies in neurobiology at the National Institute of Mental Health in Bethesda, MD.

Risks to Our Price Target

- **High Failure Rate in Drug Development**. Conclusions based on preclinical data or early clinical trials may prove inaccurate and are not necessarily predictive of future results in later stage clinical trials. There is a high rate of failure for drug candidates proceeding through clinical trials. MIRA Pharmaceuticals' long-term viability depends on the success of its product candidates, some or all of which may fail to receive regulatory approval.

- **Future Market Traction Remains Uncertain**. Even upon receiving FDA marketing approval, MIRA's product candidates may fail to achieve the degree of market penetration required for commercial success. Reimbursement by third-party payors will be instrumental in gaining market traction.

- **Competition From Companies with Greater Resources**. The emerging market for synthetic cannabinoids as well as development and commercialization of drugs is and will remain competitive. For some of MIRA's areas of therapeutic interest, various treatment options are already available, and new treatments are under development by competitors with greater financial and technical resources than MIRA's. Achieving market traction will require superior safety and efficacy profiles compared to existing options, at competitive price points.

- **Outsourcing Clinical Development and Manufacturing Creates Vulnerabilities**. Any problems in MIRA Pharmaceuticals' anticipated outsourcing of clinical trials and manufacturing processes and capabilities could have a material adverse effect on its business and financial condition.

- **DEA Controlled Substance Determination of MIRA-55 Still Pending**. While the DEA determined that MIRA1a is not a controlled substance or listed chemical, and MIRA1a and MIRA-55 are structurally closely related, the DEA has yet to make a determination on MIRA-55. If MIRA-55 were to become subject to the CSA, the determination would entail certain legal and regulatory complexities, elevated production costs, and manufacturing/transportation restrictions.

- **No Patent Protection Exists for MIRA-55**. MIRA Pharmaceuticals has no issued patents relating to MIRA-55, and its patent application for MIRA-55 may not result in the issuance of such patents.

This would significantly impact MIRA-55's potential competitive position and likely result in diminished market share, price levels, and third-party reimbursement.

- **Strength of Intellectual Property Remains Untested**. If the scope of MIRA's intellectual property portfolio is not broad enough, competitors could design comparable products around MIRA's technology or patent rights and hamper its ability to successfully commercialize its products. In addition, patent protection for naturally occurring compounds is difficult to obtain, defend, and enforce. Patent litigation is expensive and would siphon off limited resources.

- **Uncertain Ability to Continue as a Going Concern**. Because MIRA Pharmaceuticals is not currently generating revenue and operates at a loss, the company is dependent on the continued availability of additional financing to continue business operations. Clinical trials are expensive, time-consuming, uncertain, and susceptible to change, delay, or termination. The FDA regulatory approval process is lengthy and inherently unpredictable. MIRA's IPO proceeds should fund preclinical development and provide runway through Q4 2024, but there is no assurance that additional financing will be available on reasonable terms.

- **Ability to Maintain Nasdaq Listing Requirements in Question**. MIRA stock has seen a sharp five-month price decline from its IPO price of $7.00 to its current price near $1.00. If MIRA fails to remain in compliance with the Nasdaq requirements the company's shares could be delisted. As a result, liquidity would drop and MIRA's ability to raise additional capital via equity or debt financing would be impaired. As a result, future financing conditions could be punitive and current shareholders might experience significant dilution.

Valuation

We arrive at our 24-month target price of $10.00 per share using a discounted cash flow model (DCF) out to FY 2027.

Our discount rate of 50% may be reverse engineered as follows:

- Expectation of probable success rates of 30% for the MIRA-55 and Ketamir-2 assets to successfully complete clinical development through proof-of-concept (Phase II), and 20% for additional assets to obtain FDA approval and reach the market in 2027
- We project a 2026 sale of the MIRA-55 and Ketamir-2 assets for $600 million, based on comparable transactions of Phase Ib/Phase II assets in the CNS space, and 2027 product revenue of $40 million, corresponding with free cash flow of $448.2 million in 2026 and $5.7 million in 2027
- A discount rate of 50% implies that a discount factor of 0.296 (or close to 30%) will be applied to free cash flow from year 3 (i.e. FY 2026), and a discount factor of 0.198 (or close to 20%) will be applied to free cash flow from year 4 (i.e. FY 2027)
- The year 4 discount factor is calculated as $1/(1+50\%)^4$ or $1/1.5^4$

In other words, the 50% discount rate reflects a 30% probability of 2026 forecast revenue to be realized from the sale of MIRA-55 and Ketamir-2 and a 20% probability of 2027 forecast revenue to be realized from other products. Accordingly, a 50% discount rate applies discount factors of 0.296 and 0.198, respectively, to 2026 and 2027 projected revenue.

Our key assumptions for our DCF valuation are detailed below:

1. **Product gross margin** of 86% for product revenue, per IQVIA valuation of MIRA-55 and Ketamir-2 NPV.
2. We expect **R&D expenses** to grow by 15% per year from FY 2025 onward as product candidates move toward later and more expensive stages of clinical development, additional indications are being explored, and new product candidates are added to the product portfolio.
3. We expect **SG&A expenses** to grow by 10% from FY 2025 to FY 2026, then grow to 40% of revenue from 2027 onward as MIRA scales in preparation of bringing product to market.
4. Minimal **depreciation and amortization** amounts, as MIRA Pharmaceuticals is expected to continue to outsource product development and manufacturing activities.
5. **Interest** amounts are based on anticipated use of the $3 million line of credit available for Ketamir-2 development.
6. Applied **U.S. Federal corporate income tax rate** of 21%.
7. **Opening NOL balance** equals accumulated deficit as of 12/31/22 (from balance sheet)
8. **Net working capital** estimates anticipated capital raise of $10.0 million in 2025 and sale of the MIRA-55 and Ketamir-2 assets for $600 million in 2026, following Phase II proof-of-concept studies. For 2027, net working capital increase is modeled as 15% of revenue.
9. **Discount rate** of 50% reflects a 20% probability of 2027 forecast revenue to be realized.
10. **Terminal value calculation** employs an EV/TTM Revenue multiple of 5.69, calculated as the median of four comparable M&A transactions: (1) acquisition of Beacon Therapeutics by Syncona Limited (LSE:SYNC) on 10/24/2022; (2) acquisition of LogicBio Therapeutics by Alexion Pharmaceuticals on 10/3/2022; (3) acquisition of Bukwang Pharmaceutical Co. by OCI Holdings Co. on 2/22/2022; and (4) acquisition of Akciju sabiedriba Grindeks by Dashdirect Limited on 5/24/2019.
11. The 12/31/23 **cash on balance sheet** figure derives from MIRA's 10K filing.

MIRA Pharmaceuticals, Inc.

Valuation of the firm and common equity as of 12/31/2023

		Fiscal Year Ending				
		12/31/23	12/31/24	12/31/25	12/31/26	12/31/27
$(000s)						
Sale of Phase II Assets		0.0	0.0	0.0	600,000.0	0.0
Royalties on Sale of Assets		0.0	0.0	0.0	48,000.0	0.0
Net Product Sales		0.0	0.0	0.0	0.0	40,000.0
Revenue		**0.0**	**0.0**	**0.0**	**552,000.0**	**40,000.0**
Cost of Goods Sold		0.0	0.0	0.0	0.0	5,600.0
Gross Profit		**0.0**	**0.0**	**0.0**	**552,000.0**	**34,400.0**
% Gross Margin						*86.0%*
Operating Expenses						
Research & Development Expense		2,385.8	3,429.6	2,724.8	3,133.5	3,603.6
Selling, General & Administrative Expensee		8,095.5	1,517.7	2,073.8	2,281.2	16,000.0
Related Party Travel Costs		453.6	0.0	0.0	0.0	0.0
Total Operating Expenses		**10,934.9**	**4,947.3**	**4,798.6**	**5,414.7**	**19,603.6**
EBITDA		**-10,934.9**	**-4,947.3**	**-4,798.6**	**546,585.3**	**14,796.4**
Depreciation and amortization		-15.0	-18.0	-21.0	-24.0	-30.0
EBIT		**-10,949.9**	**-4,965.3**	**-4,819.6**	**546,561.3**	**14,766.4**
Interest		1,025.3	200.0	300.0	300.0	0.0
EBT		**-11,975.2**	**-5,165.3**	**-5,119.6**	**546,261.3**	**14,766.4**
TAX CALCULATIONS						
Tax rate		21%	21%	21%	21%	21%
EBT		(11,975.2)	(5,165.3)	(5,119.6)	546,261.3	14,766.4
Taxes Paid - without NOLs		0.0	0.0	0.0	114,714.9	3,100.9
NOLs Applied		0.0	0.0	0.0	30,037.5	0.0
Taxes Paid - with NOLs		0.0	0.0	0.0	108,407.0	3,100.9
New NOLs Created		(10,949.9)	(4,965.3)	(4,819.6)	0.0	0.0
NOL - Opening Balance		9,302.7	20,252.6	25,217.9	30,037.5	0.0
Increase in NOL		10,949.9	4,965.3	4,819.6	-30,037.5	0.0
NOL - Closing Balance		20,252.6	25,217.9	30,037.5	0.0	0.0
Memo Item: Taxes Paid		**0.0**	**0.0**	**0.0**	**108,407.0**	**3,100.9**
NET WORKING CAPITAL						
as % of Revenue						15.0%
WC - Opening		-875.6	4,322.4	-799.5	4,701.8	44,701.8
Increase in WC		5,198.0	-5,121.9	5,501.3	40,000.0	6,000.0
WC - Closing		4,322.4	-799.5	4,701.8	44,701.8	50,701.8
Memo Item: Change in Net Working Capital		**5,198.0**	**-5,121.9**	**5,501.3**	**40,000.0**	**6,000.0**
CAPEX		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
FREE CASH FLOWS						
EBIT		-10,949.9	-4,965.3	-4,819.6	546,561.3	14,766.4
less Taxes Paid		0.0	0.0	0.0	108,407.0	3,100.9
plus Depreciation/Amortization		15.0	18.0	21.0	24.0	30.0
less Change in Net Working Capital		5,198.0	-5,121.9	5,501.3	40,000.0	6,000.0
less Capex		0.0	0.0	0.0	0.0	0.0
less Payments to Other Forms of Capital		0.0	0.0	0.0	0.0	0.0
Free Cash Flows		**(16,132.9)**	**174.6**	**(10,299.9)**	**398,178.3**	**5,695.5**
Memo Item: Free Cash Flow (w/out tax shield)						
PRESENT VALUE OF FREE CASH FLOWS						
Discount Rate	50.00%					
Discount Period		0.000	1.000	2.000	3.000	4.000
Discount Factor		1.000	0.667	0.444	0.296	0.198
PV (FCFs)		(16,132.9)	116.4	(4,577.7)	117,978.8	1,125.0
PV (FCFs)	98,510					
TERMINAL VALUE						
Terminal Value (Future Value)						227,600.0
Terminal Value (Present Value)	44,958					
NOLs						
Future Value						0.0
Present Value	0					
ENTERPRISE VALUE	**143,468**					
plus Cash on Balance Sheet	4,603					
plus Cash From Option Exercise	-					
less Debt	-					
Common Equity Value	148,070					
Common shares outstanding	14,781					
Implied common equity value per share	**$10.02**					

Source: Company reports, Kingswood research estimates.

DISCLOSURES

Analyst Certification

The Research Analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple Research Analysts are primarily responsible for this report, the Research Analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the Research Analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the Research Analyst's personal views about any and all of the subject securities or issuers; and (2) no part of any of the Research Analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the Research Analyst(s) in this report.

I, Karen Sterling, certify that (1) the views expressed in this report accurately reflect my own views about any and all of the subject companies and securities; and (2) no part of my compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by me in this report.

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Buy - Buy-rated stocks are expected to have a total return of at least 15% over the following 12 months and are the most attractive stocks in the sector coverage area.

Hold - We believe this stock will perform in line with the average return of others in its industry over the following 12 months.

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Company-Specific Disclosures

Distribution of Ratings
Kingswood Capital Partners, LLC

			Investment Banking Services/Past 12 Months	
Rating	**Count**	**Percent**	**Count**	**Percent**
BUY	1	100.00	1	100.00
HOLD	0	0.00	0	0.00
SELL	0	0.00	0	0.00

As of January 2024.

In August 2023, Kingswood Investments, a division of Kingswood Capital Partners, managed MIRA Pharmaceutical's initial public offering. Kingswood received compensation from MIRA Pharmaceuticals for investment banking activity during 2023.

MIRA Pharmaceuticals Rating History as of April 18, 2024

Other Disclosures

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